

# Washington State Patrol Fire Training Academy

Strategic Business Plan

North Bend, Washington



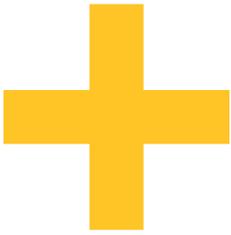
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PLANNING+DESIGN

# Washington State Patrol Fire Training Academy

## Strategic Business Plan

The following information was prepared as a strategic planning document for the proposed updates and improvements to the Washington State Patrol Fire Training Academy. The information in this document was prepared for and authorized by the Washington State Patrol and all aspects of reproduction or usage of this document are subject to the laws and regulations that govern the State Patrol as a public institution.

This Document includes "forward-looking statements." All statements other than statements of historical fact within this document, including statements regarding Washington State Patrol and Fire Protection Bureau strategies, plans, objectives and expectations, are all forward-looking statements. Although the author believes that the expectations reflected in such forward-looking statements are reasonable at this time, it can give no assurance that such expectations will prove to have been correct. Certain important factors that could cause actual results to differ materially from expectations are set forth herein. All subsequent written and oral forward-looking statements attributable to the Washington State Patrol, Fire Protection Bureau, or persons acting on its behalf are expressly qualified in this regard.



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# 1. Executive Summary

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The following Strategic Business Plan provides an overview of the critical funding and operational needs required to re-establish the Washington State Patrol Fire Training Academy as the premier fire training facility in the State of Washington. The Fire Protection Bureau plays a key role in maintaining and improving response capabilities across the State and the Fire Training Academy is a primary tool in executing that requirement. Although once a premier facility both in the State as well as the Northwest, time and insufficient funding have diminished the capacity to maintain that status. Recent years have forced the facility to focus on maintaining basics levels of service as opposed to providing state-of-the-art facilities and programs that serve to enhance the safety and response capabilities of firefighters and emergency response personnel statewide.

The rapidly changing service environment and increasing demands on the fire service make it crucial that departments throughout the State have access to realistic and effective training facilities that accurately reflect real world challenges. The ability to fund and maintain state-of-the-art training facilities is beyond most if not all departments in the State, but the lack of access to such facilities increases risk to uniform and civilian personnel alike. The void in realistic training facilities also makes it difficult to enhance response capabilities statewide in a manner that allows preparedness to keep pace with the ever-increasing challenges of a dangerous world. Agencies both large and small must rely on the State to lead efforts in improving response capabilities and many

of the required facilities only become viable when utilized by a large and diverse audience.

The opening of the Washington State Patrol Fire Training Academy in 1984 represented a giant step forward in enhancing the availability of high quality fire training facilities and programs in the State of Washington. The idea of creating centralized training facilities came about from the recognition that existing training facilities across the State were inadequate. Increasing environmental concerns and the high cost of constructing and maintaining facilities made it difficult for individual departments to build and sustain quality training facilities for their personnel. The objective for developing the Fire Training Academy was to fill that void with State-of-the-art facilities accessible by all agencies in the State. Upon opening, the facility accomplished that goal by providing firefighters throughout Washington State with access to live fire-training environments otherwise unavailable. Many of the stakeholders involved with the early days of the facility recall the excitement of training at the new facility and the frequency with which the facility was utilized. The ability to burn realistic fuels was a major draw of the facility and continues to be to this day. Over the years additional training elements were added to the site including the addition of Aircraft Rescue Fire Fighting training props in the mid 90s. The Fire Training Academy has maintained a key role in the training of firefighters every since training thousands of firefighters each year.

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Although the academy continues to play an important role in preparing firefighters, the lack of available funding to complete, maintain and enhance facilities at the site has not only limited its potential effectiveness, but over the years has also led to diminishing use by many of the agencies it was designed to serve. Many of these users, including volunteer agencies, have limited access to other available options. The void in major enhancements has also seen many of the training areas and props become obsolete and ineffective and this has limited usage by many of the larger departments who have also sought alternative facilities. Many times these options are also of limited effectiveness but they are local and reduce the cost of training personnel.

Although fire departments and response agencies across the State have made the best of available funding, the lack of investment has created a situation quite similar to that when the Fire Training Academy was conceived. The pace of funding for repairs, improvements and new facilities has not kept pace with the rapidly changing service environment and thus not only are many of the training elements beyond their useful life, many no longer represent best practices in the training of firefighters. Diminishing relevance and capabilities at the Fire Training Academy over the years has led many users to seek alternatives based on cost and proximity and this serves to exacerbate the problem of maintaining a healthy and sustainable fire training resource for the State.

The plan outlined below represents requirements to restore the Fire Training Academy to the resource it was always intended to be while also providing an overview of challenges and opportunities likely to be encountered along the way. There are no easy answers to the challenges faced but the stakes are too high to be left unaddressed. The growing threats to communities across the State and nation are highlighted on an almost daily basis and we are frequently reminded of the consequences of being unprepared.

## 1.1. Objectives

1. Provide state-of-the-art facilities and educational programs to fire service and other emergency response personnel and agencies throughout Washington State
2. Facilitate statewide training programs and response initiatives
3. Develop and deliver high quality multi-agency, multidisciplinary training programs and exercises that improve response capabilities and coordination Statewide
4. Develop public/private partnerships designed to increase training opportunities that will enhance community response capabilities

## 1.2. Mission

### **Washington State Patrol**

The Washington State Patrol makes a difference every day, enhancing the safety and security of our state by providing the best in public safety services.

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## **Vision**

To be the best public safety agency in the United States.

a safe, ethical, innovative, knowledgeable, and diverse workforce.

## **Motto**

Service With Humility

## **Values**

Every employee is a critical member of a team committed to:

Strong leadership

Effective partnerships

Professional excellence

Acting with integrity and accountability

Respecting and protecting individual rights

Earning the trust and confidence of the public

## **Goals**

Goal 1 - Make Washington roadways and ferries safe for the efficient transit of people and goods.

Goal 2 - Reduce our citizens' vulnerability to fire, crime, terrorism, and natural hazards.

Goal 3 - Meet the growing need for law enforcement, forensic, investigative, fire protection, and other public safety services statewide.

Goal 4 - Leverage technology to enhance and sustain business processes, public safety infrastructure, and statewide emergency communications to facilitate the accomplishment of all agency goals.

Goal 5 - Provide strong leadership and resources to foster

## **Fire Training Academy**

The mission for the Washington State Patrol Fire Training Academy is:

To work in partnership with Washington State's communities and industrial complex to help develop their capacity to control risk from fire and other emergencies through training and education for fire and emergency response personnel.

The WSP/FTA's purpose is to deal with threatening situations by: Providing fire training experiences, for public and private fire and emergency response personnel that cannot be efficiently or effectively delivered at or through other systems.

Supporting community capacity to provide fire personnel training at the local level through a regional system of training councils.

Through the Fire Protection Policy Board's Fire Training Review Committee, develop and maintain a dynamic plan for the delivery of fire personnel training in the state.

## 1.3. Keys to Success

1. Develop State-of-the-art facilities that accurately replicate real world challenges
2. Become a source for multi-agency and multi-jurisdictional

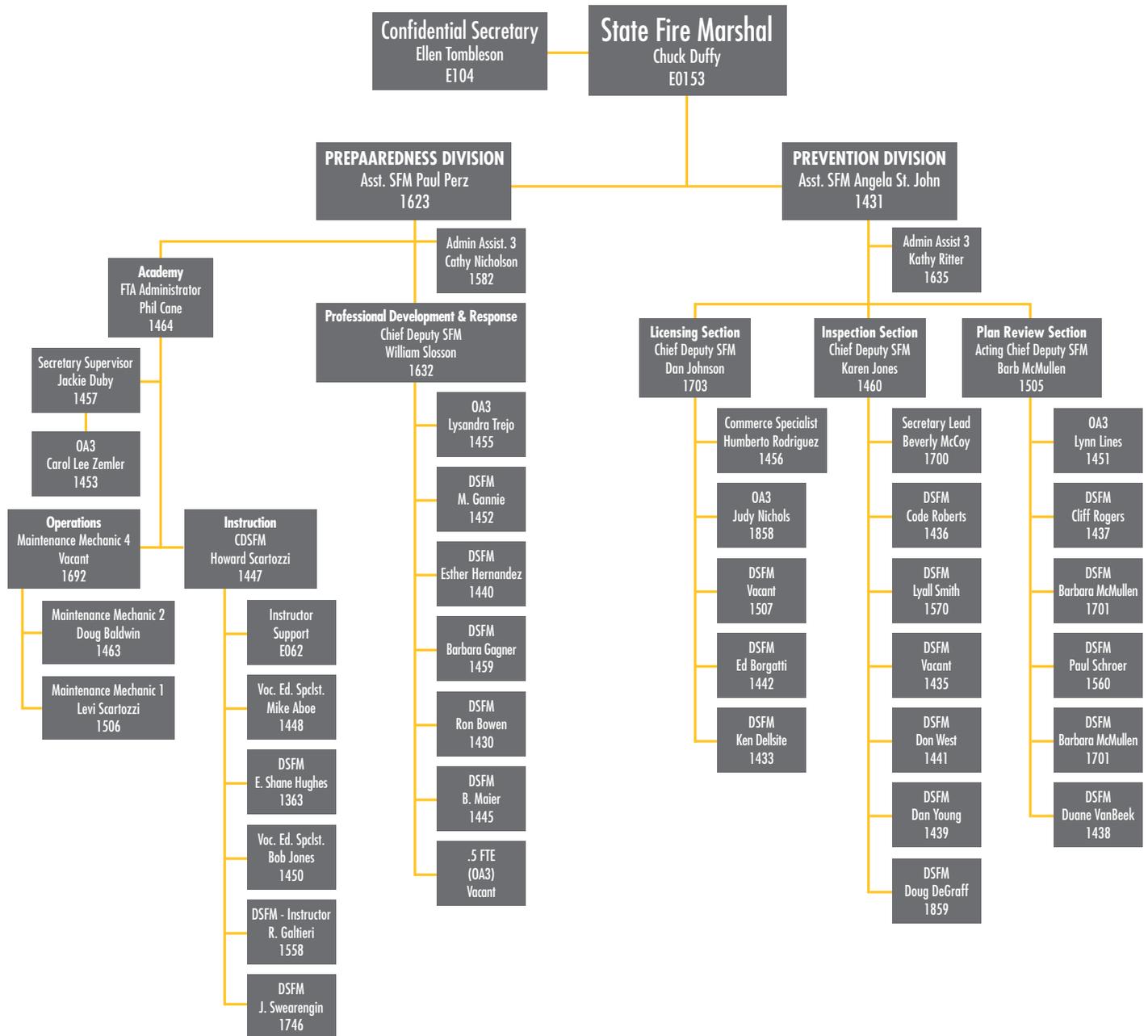
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training and education to improve coordination and capabilities Statewide

3. Enhance viability and sustainability of state-of-the-art facilities by developing facilities and programs beneficial to private industry and other emergency response agencies such as law enforcement
4. Reduce operational cost by obtaining grant funding for large scale training initiatives.
5. Establish funding sources that reduce cost of training to paid and volunteer departments that do not have financial means to travel to the FTA.
6. Establish unified communication network that actively works to represent the funding and facility needs of the fire service in Washington State.
7. Create a full service destination training site that will draw diverse group of participants from throughout the Northwest.



## 2. Organization Summary



### 2.1. Legal Entity

The Fire Training Academy (FTA) is a division of the Washington State Patrol (WSP) Fire Protection Bureau (FPB).

## 2.2. Start-up Summary/Phasing

### Phase One Start-up

#### PHASE ONE

#### Burn Building Replacement

Construction Funding: 2015-2017

Predesign 2013 - Design 2015

- Single Family Residential Burn Structure
- Multi-Family Residential Burn Structure
- Commercial High Rise Burn Structure
- Classroom Re-Hab Building
- Maintenance and Storage Building Replacement
- Sitework
- Treatment Pond Expansion
- Utilities
- FFE



## 1. BURN BUILDING REPLACEMENT



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Phase Two Start-up

**PHASE TWO**  
**Combined Administrative/Educational Building**

**Construction Funding: 2019-2021**  
**Predesign 2015 - Design 2017**

- Multi-Services building
- Administration
- Dining
- Education
- Hotel – Single Occupant Rooms
- Parking Areas
- Entry Signage
- Sitework
- Utilities
- FFE

**Cityscape Upgrades**

- Single Family Residential Arson investigation
- Multi-Story Arson investigation
- Existing Burn Tower USAR modifications
- Sitework
- Utilities



**2. COMBINED ADMINISTRATIVE/  
EDUCATIONAL BUILDING**



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## Phase Three Start-up

### PHASE THREE

Construction Funding: 2021 - 2023  
Predesign 2017 - Design 2019

#### ARFF Upgrades

- Pave ARFF Training Area
- New Training props/Fuel Delivery/Surface water collection
- Airport Lighting signage and markers
- Vehicle Wash/Decontamination System
- Vehicle Exhaust System
- Mock Hanger
- Remote Classroom
- Existing Building Improvements – incl FFE

#### Marine Upgrades

- Addition to marine Prop
- Shallow Water Control Pond (three feet deep)
- Deep Water training Area (eight feet deep)
- Marina/Dock Prop

#### Transportation Upgrades

- Rail Crossing
- Rail Car accident
- Cargo Container Area



## 3. ARFF UPGRADES & MARINE TRANSPORTATION



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## Phase Four Start-up

### PHASE FOUR

Construction Funding: 2023 - 2025  
Predesign 2019 - Design 2021

#### Hazardous Materials Upgrades

- Equipment for HAZ MAT Building
- Loading Dock Prop
- Warehouse Prop
- Acid Bath
- Bottle Storage Rack prop
- Extend Rail Line
- Expand Confined Spaces Props
- Remote Classroom
- Existing Building Improvements – Incl FFE
- Sitework
- Utilities



## 4. HAZARDOUS MATERIALS & CITYSCAPE BUILDINGS



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Phase Five Start-up

**PHASE FIVE**  
**Highway and Transportation**

**Construction Funding: 2025-2027**  
**Predesign 2021 - Design 2023**

- Five Lane Highway
- Tanker Spill
- Extrication
- Remote Classroom
- Overpass
- Rail Line Rural Accident
- Sitework
- Utilities
- Swiftwater



**5. HIGHWAY / TRANSPORTATION**



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## Phase Six Start-up

### PHASE SIX Industry and Manufacturing

Construction Funding: 2027-2029  
Predesign 2023 - Design 2025

- Refinery Prop
- Tank Farm Prop
- Rail Line Extension
- Remote Classroom
- Manufacturing Structure
  - Large Scale manufacturing structure
  - Storage
- Sitework
- Treatment Pond Expansion
- Utilities



## 6. INDUSTRY / MANUFACTURING



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### 3. Services

WSP Fire Training Academy currently provides a wide range of courses and programs that deal with both public and private emergency response and preparedness. The primary focus to date has been on delivering courses related to conducting the Basic Recruit Academy, Structural Live Fire, ARFF, Marine and Hazardous Materials. Most of the facilities utilized to conduct this training are outdated or in need of significant updates to simply maintain the current status. In addition, the ability to expand and enhance facilities is required to provide the opportunity to reach a larger audience and improve the

quality of training provided to response agencies Statewide. Realistic training facilities as outlined in this document will greatly enhance the ability to provide new and highly beneficial training to the response community and can greatly improve the preparedness capabilities of the State of Washington. The design of the proposed enhancements will also facilitate a wide range of uses by both public and private sectors, which will lead to greater coordination and cooperation by these agencies during emergency operations.

**Proposed Key Fire Programs and Services Include:**

Basic Recruit Academy	Scenario Based Hazardous Materials	Scenario Based Fire Officer
Advanced Continuing Education	High Angle Rescue	Advanced Driver/Operator
Company Level Training	Trench Rescue	Off Road Driving
Live Fire Training	Confined Space Rescue	Advanced Instructor Development Courses
Large Scale Incidents	Swift Water Rescue	NIMS Incident Command
Mass Casualty	Rescue Systems	Strategy & Tactics
ARFF	Industrial Fire	Fire Investigator
Collapse Building Search and Rescue	Marine	Multi-Jurisdictional
Statewide and National Conferences and Seminars	Command and Control	Multi-Agency
	Urban/Wildland Interface	Bomb Range and Ordinance Disposal

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**Key Law Enforcement Course Include:**

Large Scale Incidents	Marine Security and Terrorism Prevention
Mass Casualty	Command and Control
ARFF-Terrorism	Advanced Tactical Scenarios
Collapse Building Crime Scene	Scenario Based Officer Training
Crime Scene Investigation	Off Road Driving
Crowd Control	Advanced Instructor Development Courses
Statewide and National Conferences and Seminars	NIMS Incident Command
Scenario Based Hazardous Materials Awareness	Multi-Jurisdictional
Tactical High Angle	Multi-Agency
Swift Water Rescue	

**Key Law Enforcement Course Include:**

CERT Training	Business Continuity	High Rise Safety
Emergency Management	Risk Analysis	Disaster Preparedness



## 4. Market Analysis Summary

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A market analysis was conducted to determine potential opportunities for revenue generation through partnering and or outside participation. Although little historical evidence was found showing public safety facilities generating return on capital investment, successful State training facilities such as Texas A&M were identified generating sufficient revenue to allow for the ongoing maintenance and upgrading of facilities while at the same time reducing the training cost to the primary user or users. The survey of the market revealed that the true value of the training that can be offered at a state-of-the-art facility often exceeds the customer's ability to pay if not supplemented in some form. In the State of Washington as well as Nationally, successful training facilities often develop some form of partnership with a College or University to avoid duplication and share revenue potentials. Colleges and Universities are experienced at delivering educational programs and usually have State supported funding capabilities that allow for the reduction in cost of delivered training. An established relationship of this type could help offset the cost of training to emergency response personnel and assist in expanding programs and educational opportunities available to the Fire Service in the State of Washington.

In spite of all of the potentials for revenue and expanded services, historical evidence points to problems when these concerns become too important. Balancing the need for quality training with the difficulty in funding training is always a struggle and seems to be a very serious problem in the State. Successful training facilities reviewed nationally tend to have a delicate balance between subsidized training and tuition as

well as diversity in their course offerings that leads to added revenue generation which helps sustain quality training.

### 4.1. Market Segmentation

The market segmentation identified for the new facility includes primary and secondary markets. The primary market will always be State Fire Service personnel and agencies. Secondary markets include law enforcement, industry, non-fire emergency response agencies, non-response public agencies, private corporations, and citizens groups.

#### **Primary Market**

Fire Service personnel and agencies both paid and volunteer should remain the primary focus of the Fire Training Academy. The State of Washington has over 500 departments of varying size. Agencies, both large and small, report difficulty in obtaining and funding quality training. Improvements should facilitate quality training that would otherwise be unavailable at the local level. Emphasis should be on providing those opportunities that would be difficult for any one agency to sustain on their own. Specialized training and facilities that would otherwise be cost prohibitive are much more feasible when they draw across a large area and include a diverse population of users.

**Paid Departments-** There are roughly 7,000 paid firefighters in the State of Washington. Paid departments in the State are often smaller organizations that would not have the capacity to build significant facilities on their own. Even larger paid departments report struggles to build and

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maintain high quality training facilities and programs. The unique capabilities of the proposed facility improvements will provide the opportunity to offer facilities and courses that would otherwise be unavailable to them. In many cases it would be unwise for a community to take on building some of the proposed facilities even if they had funding, as the demand for any one agency would not be great enough to justify the cost of construction and operation.

An added benefit to Centralization of advanced facilities is the increased familiarity and coordination that can result between agency participants. Training together provides the opportunity to improve response capabilities in incidents that cross jurisdictional boundaries or require mutual aid. By drawing from a diverse and larger audience the cost of training to all can be reduced while also making the facility more sustainable.

**Volunteer Departments-** Volunteer departments represent the largest market nationally and this is no different in Washington State. Volunteer departments represent some 15,000 firefighters in the State and the struggle to fund training is consistent across departments. The wide range of ages and skill levels of this vital market makes volunteers a significant point of focus in efforts to improve response capabilities in the State. This market segment most often must rely on State facilities and Funding to access advanced facilities and courses. There is probably no area of greater need for high quality affordable training. The fact that this market segment

does not operate on an 8 to 5 provides an opportunity to provide training to volunteers at times when the facility might otherwise be unoccupied and this greatly assist with the goal of keeping the facility operating at all times. An operating facility is typically a healthy and sustainable facility and facilitating the volunteer market is key. Discussions with key stakeholders from across the State repeatedly revealed the great difficulty volunteers have in funding training including the constant battle to obtain travel funding to attend advanced training such as that provided at the FTA.

### **Secondary Markets**

**Non Fire Emergency Response Agencies-** This market includes law enforcement and emergency medical personnel. The realistic design and context of the proposed facilities makes the facility useful and relevant to all response agencies. FTA programs will be able to expand their capacity to offer courses and programs to both law enforcement and emergency medical providers and also allow them to provide programs that recognize the need for multi-discipline integration during disaster situations. As the proposed improvements strive to mimic the real world environment, they become an ideal location to address the challenges of the modern world including terrorism and natural disasters. Over time the FTA could become a leading site for Statewide as well as national training efforts.

**Non Response Public Agencies-** This segment includes agencies such as the Department of Transportation, municipal

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public works, health and environmental agencies, etc. Disaster situations increasingly require the resources of many non-response agencies and the facility will be uniquely positioned to provide emergency training to these agencies. Too often realistic training is difficult to conduct on the large scale required to replicate a disaster scene, but the proposed improvements will provide an incredible platform of realism that is not available at any other location in the State.

**Private Corporations-**Virtually any business in the State is a potential customer for the new facility. Private corporations are increasingly aware of the impact natural or man made disasters can bring to their personnel and businesses. One of the largest growing markets for emergency training is the private sector. This market is also much more capable of funding beneficial training without the need for State subsidized support. Courses ranging from industrial fire protection to high-rise safety programs can be offered in a realistic environment and context that most corporations do not have access to. Proposed facilities at the FTA can make training real but safe. The potential exist to dramatically increase the ability of corporations to provide for their own personnel in ways that will decrease the demands on response agencies during an emergency. The added cooperation between the public and private sector will also lead to less conflict during emergency events.

**Citizens Groups-** this segment can range from church groups to neighborhood groups to individual citizens. Citizens groups are

often unable to obtain realistic training and prevention information and this lack of information can increase the demands on emergency response providers. The market segment is unlimited in its potential and the hands on opportunities provided by the facility can radically change the level of citizen participation. The addition of high quality classroom space as proposed in the new classroom and administration building will create an environment that would be attractive to citizen groups that may want to take part in seminars and training programs such as the Community Emergency Response Teams (CERT) program.

## 4.2. Target Market Segment Strategy

The key focus will be in providing for the needs of Washington State Fire Departments and personnel and then capitalizing on the unique facilities, which will allow for providing beneficial service to the secondary markets. Fire departments have in most cases become the most versatile provider of emergency response and preparedness capabilities across the country and by focusing on facilities and courses that accommodates State fire training needs, secondary markets will benefit as well. As the State provider and leader for the fire service, the Fire Protection Bureau should have the facilities and personnel to serve as the foundation for Statewide response and preparedness initiatives including developing and offering courses that enhance firefighter capabilities and safety. If significant increases in statewide response capabilities are to occur, it will be imperative that the FPB, and FTA be a

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major contributor and leader of this effort. One of the most significant factors in the success of this strategy will be in establishing funding for both proposed facilities as well as funding programs that assist departments with attending the enhanced courses. Funding is a major barrier to participation and must be addressed. The financial analysis provided in Section 8 of this document highlights the significant funding needs required to adequately address the needs of the fire service in the state. The analysis also demonstrates the ongoing challenges faced in operating an effective training academy if funding shortages are not given renewed priority.

The core focus on serving the State fire department with realistic training facilities will create excellent opportunities for providing customized training programs to other market areas segments that will also increase capabilities throughout the State. The relationship with law enforcement via the Washington State Patrol creates an outstanding opportunity to utilize the proposed facilities to increase cooperative training in a manner that ultimately assist in the focus on serving the fire service market. The potential addition of a State Patrol Bomb Range on the site has the potential to serve as a catalyst for joint training between law enforcement while serving the larger Mission of the Washington State Patrol. Firefighter and Law Enforcement Safety and response capabilities are greatly improved by creating training venues that facilitate joint training operations.

### 4.3. Service Providers Analysis

Fire service training programs have historically been under funded. Training is often accomplished utilizing make shift facilities. Paid and volunteer agencies alike struggle to obtain dollars for developing and delivering courses and evolving environmental issues have dramatically decreased the number of hands on live fire training facilities. All of this has combined to create a giant void in the ability to provide realistic, contextual training. Realistic hands on training is crucial to limiting the potential for injury or death and lack of this type of training is often noted in after action reports of tragic incidents. As service demands have increased across the country, the context of training has changed. This change in the service environment has made it more difficult for departments to maintain viable facilities that address the myriad of skills now required of the fire service and fire fighter. Analysis of Washington State Fire Agencies reveals funding as the number one barrier to obtaining quality training. This lack of funding not only makes it difficult to find beneficial training programs and facilities, but also often makes available programs out of reach due to financial limitations. One of the most often repeated concerns expressed during program meetings at the FTA was the inability to afford the cost associated with travel, overtime, tuition etc. Lack of resources also makes it difficult for many departments to maintain service when personnel attend remote training. Establishing adequate funding levels for both facilities and agency participant is critical to any efforts to improve the fire service Statewide.

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## 4.3.1. Alternatives and Usage Patterns

### **Alternatives**

#### **Regionally and Locally Available Training Facilities:**

Due to the inability to travel to the FTA for training, many departments have developed their own training facilities or attend regional training facilities sometimes developed by the local community college. These facilities are of varying size and quality and have formed a necessary network of local providers that allow for completion of the day to day training necessary for firefighters throughout the State. Most alternatives, however, are limited in their ability to provide a realistic training environment and many still struggle to sustain the facility due to limited funding capacity. This makes it impossible for the development of advanced training components as proposed at the FTA and thus current alternatives do little more than sustain the basics required to provided day to day service. As is the case across the country, fire departments in the State have done the best they can under difficult circumstance, but most currently available facilities do not offer the realistic context necessary to improve response capabilities significantly.

### **Usage Patterns**

Training can be broken down into two primary categories. Mandated training is that set of courses and programs that are required by some governing agency. These requirements have and will continue to grow for the foreseeable future and can be responsible for a significant portion of any training budget.

The second type of training is critical and specialized training that meets the crucial set of skills required in the area in which service is provided. Although there are overlaps in the two types of training, the contextual based critical and specialized training is often sacrificed due to the constraints of time required to train personnel on mandated training. This problem is magnified by the lack of realistic facilities.

When considering choices for mandated training there are several factors that are key.

1. The single most important factor in obtaining mandated training is cost. Faced with miniscule training budgets most departments are struggling to stay within compliance and this makes cost a vital consideration in any program.
2. The second most important factor is location. Overtime cost and lack of manpower makes it difficult to take personnel offline to attend training involving significant travel time.
3. Timing is also critical. The availability of a required course when it is needed is often the deciding factor that leads to attendance.
4. Quality is a key factor when all of the previous factors are close to equal. Although Quality is a consideration in any decision, the willingness to accept a perceived lack of quality is increased when the other deciding factors are positive

When considering choices for contextual based, critical, and specialized training the order of key factors is reversed.

1. Quality. Courses are viewed by the student as vital to their

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ability to safely do their job and thus the perceived quality of the offering is of up most importance.

2. Timing also becomes crucial because the student often wants on demand training.
3. Location remains important as a consideration and this includes proximity to perceived requirements in facilities.
4. Cost continues to be relevant as often time students will pay for these types of classes out of their own pocket out of a desire to improve their skills or safety on the job.



# 5. Strategy and Implementation Summary

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Several key strategies should be implemented to assist in providing firefighters in the State with the highest quality training available while at the same time pursuing opportunities for reducing the cost of operation.

They include:

- Development of State-of-the-art facilities
- Develop Training agreements with local and State agencies
- Establish funding streams to accommodate travel and tuition for departments with limited resources
- Develop advanced curriculum that takes advantage of increased facility capabilities.
- Actively pursue grant opportunities to facilitate Statewide training initiatives including funding for agencies and disciplines that would not qualify for funding individually.
- Increase offerings to private industry
- Provide on demand training program to State departments and other public and private sector customers
- Establish a communications network that develops a unified voice for the fire service
- Establish or enhance relationships with fire departments throughout the State
- Increase marketing efforts to introduce new faculties and programs
- Develop and deliver community preparedness and response training programs
- Enhance relationship and partnership with North Bend and surrounding area
- Pursue private funding opportunities

## 5.1. SWOT Analysis

The SWOT analysis provides an opportunity to examine the internal strengths and weaknesses for the FTA. It also examines the opportunities presented as well as potential threats.

The FTA has a valuable inventory of strengths that will help it succeed. These strengths include:

- An experienced and knowledgeable staff
- Established educational resources
- Quality existing training programs
- Long term relationships throughout the State
- Committed network of Stakeholders

Strengths are valuable, but it is also important to realize the weaknesses that must be addressed. These weaknesses include:

- Lack of adequate facilities
- Lack of funding
- Competitive market for funding
- Apathy from the fire service due to years of limited funding
- Limited marketing capabilities
- Lack of unified vision for the Academy

FTA strengths will help it capitalize on emerging opportunities.

These opportunities include, but are not limited to:

- Facilitating large training grants and programs
- Establishing standardized training and response programs for State agencies
- Creating community preparedness standards
- Facilitate multi-agency training

- Exercising community response capabilities
- Facilitating statewide training and response initiatives
- Facilitating increased industry training programs
- Developing private sector programs and courses

Threats that FTA should be aware of include:

- Continued or increasing unavailability of training funding
- Increased and changing regulatory requirements
- Changing service environment
- Increased usage leading to decreased availability and flexibility of facilities
- Competing visions for training in the State

### 5.1.1 Strengths

The FPB has an experienced staff that has been successful in developing relationships with many departments as well as with other agencies in the State. Nurturing established relationships while fostering new relationships with department leaders across the State will be a critical factor in reaching the potential market for statewide training initiatives. The need to assist agencies in meeting regulatory requirement is essential but as the State fire agency the FPB should use its position to advance training efforts beyond the minimum standard.

The existing educational resources of the department are a great strength and will allow them to access training expertise from many different fields and parts of the State as well as Nationally. This will allow the FTA to respond to opportunities, including those with outside agencies that will provide high

quality training at reduced cost to all.

The biggest strength will be the new facilities. There will be nothing comparable in the State and this will provide an advantage that will allow the FTA to provide world class training to State fire departments and personnel, while also improving statewide coordination between agencies both public and private. These efforts provide the opportunity to set new standards for quality training and preparedness in the region.

### 5.1.2 Weaknesses

The biggest weakness of the FTA is funding for both facilities and programs. Lack of funding to maintain and enhance facilities has led to the current situation where many of the facilities are well past their useful life span. This coupled with the cost of travel has led many fire departments in the State to look to other, often less than adequate training options.

The lack of a unified vision and voice for fire training in the State also makes it difficult to keep the needs of the FTA at the forefront of funding discussions. The lack of enhancements to the programs and facilities at the FTA has led to a great deal of apathy across the State with the expectations that real improvements such as proposed for the facility will never come to be.

### 5.1.3 Opportunities

The most significant opportunity is the ability to provide world-

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class training programs and facilities for fire and emergency response agencies throughout the State. The opportunity to dramatically increase firefighter safety and operational capabilities cannot be underestimated.

The opportunity exists for the FTA to obtain and facilitate grants that can reach a large portion of response personnel in the State. Federal grant money has increasingly favored applications that increase training across a large population or region. The process of applying for grants is overwhelming to many individual agencies and most have little chance of getting funding due to the limited number of students that will be impacted. The FTA will have advanced facilities that allow for statewide training programs that are likely to be attractive to grant funding decision makers.

By bringing many different agencies together the FTA can facilitate the development of standardized training programs and procedures that have the ability to dramatically increase the response capability throughout the State.

The proposed realism and scale of the improvements planned for the FTA provides a one of a kind opportunity to facilitate training across jurisdictions and agencies, which will dramatically improve cooperation and coordination. The ability to operate on a large scale in a realistic context is currently unavailable and the unique relationship of the FTB within the WSP provides the opportunity for significant enhancements in operational capacity Statewide.

The new and improved facilities will provide the opportunity to increase community preparedness initiatives. One of the outcomes of recent community preparedness programs has been a reduced level of interest and involvement when new skills are not exercised frequently. Citizens are often disappointed that they do not get to use their skills and in actual emergencies there are often differing expectations of level of involvement. The realistic facilities that will be constructed will position this facility to provide ongoing training that exercises community skills and assist in clarifying roles.

The improved facility has the potential to become the most significant training resource in the State and region. Existing facilities are not comparable and cannot provide the diverse range of training opportunities that will be possible upon completion of the facility improvements proposed for the FTA.

#### 5.1.4. Threats

The largest threat to sustainability is the availability of funds. The availability of funds to build, operate, and maintain a training facility, as well as assisting departments in getting to the site, is ultimately the key to its ongoing success and long term sustainability.

Changing regulatory requirements are always a threat. Regulatory requirements typically come in the form of unfunded initiatives and this makes it difficult for departments to make available funds meet all of the mandated requirements. Increasing requirements also make it difficult for a department

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to allocate time to take personnel offline for non-regulatory training. Funding must increase accordingly with new requirements or the facility will ultimately become unsustainable.

A constant threat to maintaining quality on a large scale will be the availability of quality instructors who have both content and educational expertise. As the program becomes more successful, the demands placed on the best instructors will increase. Successful operations will create the constant challenge to find new talent that can keep programs dynamic and relevant. Adequate staffing with qualified personnel is key to providing a world class experience. Even the best facilities are doomed to failure if the quality of the instruction is not perceived as top notch.

## 5.2. Competitive Edge

Four key aspects will provide the new and improved FTA with a competitive edge. They are vision, facilities, educational quality and funding.

1. A clear vision for the future of the FTA, as established by the current master plan, provides a much needed roadmap for the future. Fostering a clear and unified voice across the State will provide a key competitive edge in the highly competitive struggle for funding.
2. The availability of state-of-the-art facilities at the FTA will provide an excellent competitive edge as the market is lacking viable alternatives. The proposed facilities offer the opportunity to provide desperately needed realistic training that is currently unavailable to fire departments and other

response and preparedness agencies throughout the State.

3. The educational quality of the training provided will be an important competitive edge to the facility. The educational experience and resources of the FTA coupled with the access to a wide network of specialized experience will allow for the development of beneficial training programs that can be consistently delivered at the FTA.
4. The economic realities faced by most emergency response agencies make funding and the cost of providing training a critical factor. The ability to spread cost across a diverse and large customer base will increase the chances of sustainability.

## 5.3. Marketing Strategy

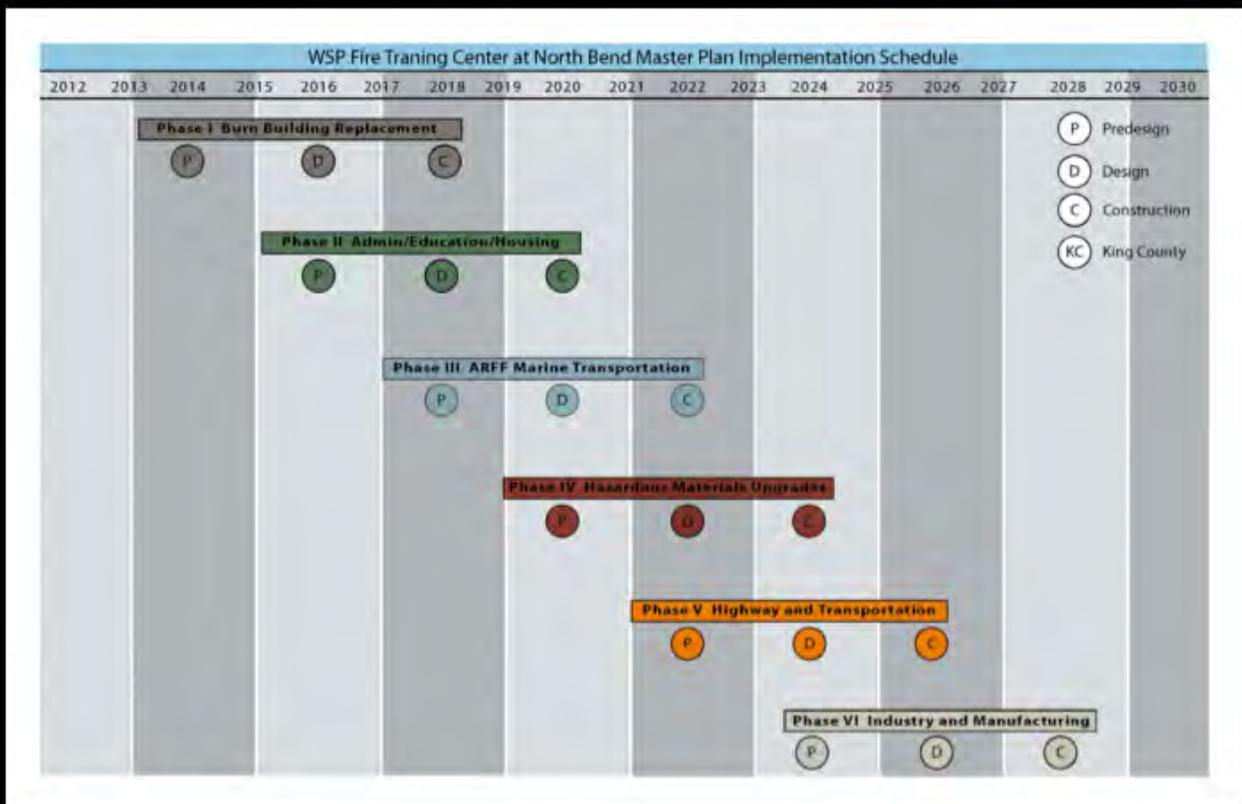
One of the most critical components to the future success of the FTA will be in establishing strong marketing efforts that demonstrate not only the quality of the programs, but also the need to firmly embrace the vision for the future. A unified voice across the fire service in the State is a key measure of commitment in the eyes of critical funding sources. Marketing efforts and programs should focus heavily on establishing close relationships and partnerships with State fire departments as well as with other agencies both public and private. The marketing strategy will include direct contact with potential users to develop strategic alliances. FPB and FTA personnel will be active in the service area making contact with potential customers to ensure they are aware of the capabilities of the facility and its specialized programs. These strategic alliances will allow the training staff to develop curriculum that is customized to the needs of the State and local organizations

and will reduce the possibility that training offered is not desired or needed by the user. Participation in local, state, and federal training associations will allow the facility to maintain aware if emerging trends and training needs. This will be crucial to facilities and programs remaining relevant

while at the same time enhancing the status of the FTA leading to more usage. These associations also provide a vital outlet for the distribution of marketing materials related to the facility. Relationships are key.

## 5.4. Milestones

The following schedule outlines proposed milestones required to complete construction of the updated facility.

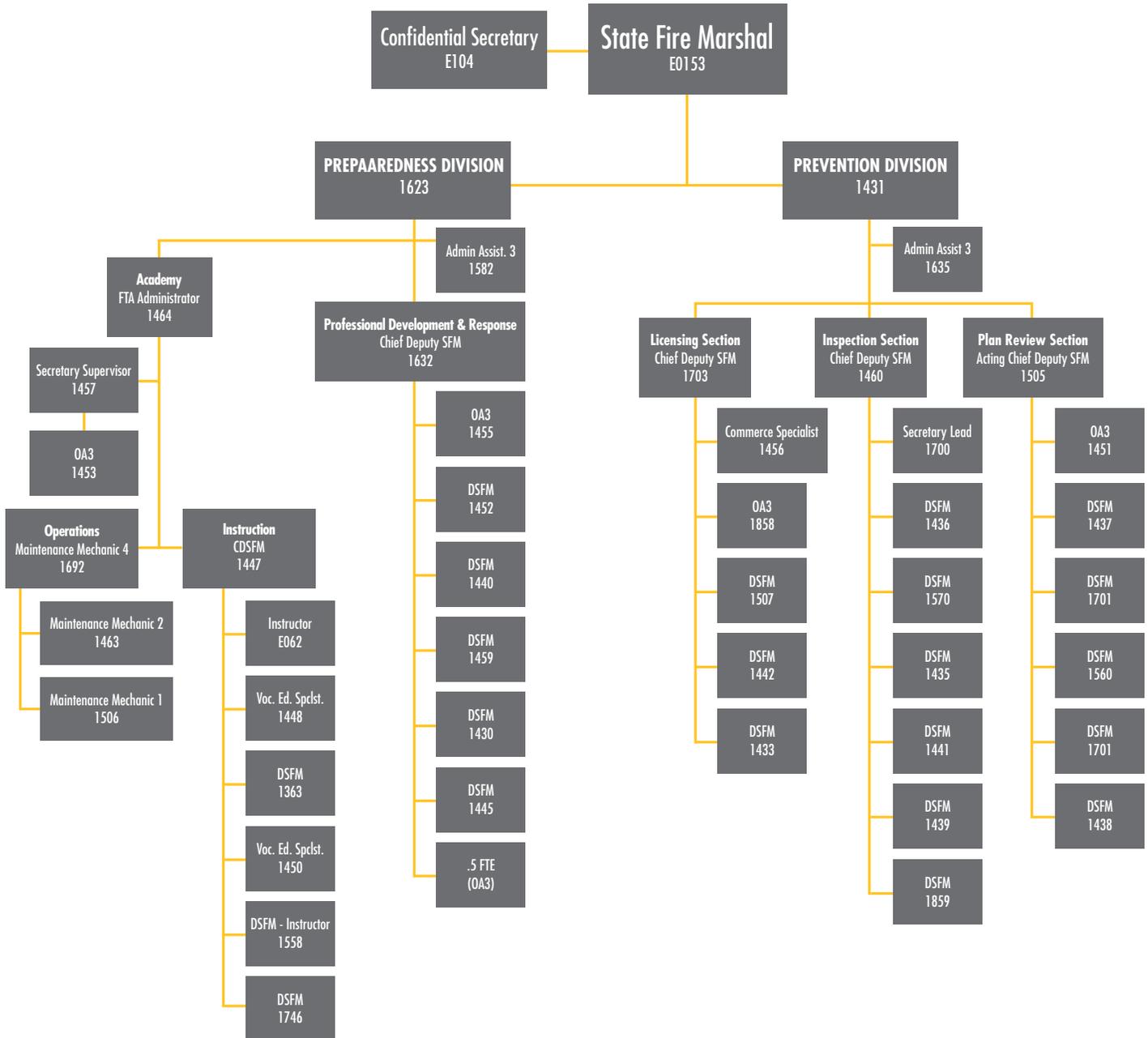


TOVANI HART



# 6. Management Summary

The existing Fire Training Academy training staff will be responsible for day-to-day management of the new training facility.



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## 6.1. Future Personnel

Future personnel requirements must be considered if the FTA is to grow into its full potential. Although it is anticipated that current personnel will be sufficient to handle the first few years of operations, the FPB should anticipate the need for additional personnel to be added as the facility and its usage grows. The need to improve marketing of the facility is critical. To remain effective even a State supported training facility needs to adopt business practices that increase usage and reduce overall cost. Current marketing efforts are ineffective largely due to the fact that staff does not have time or expertise to perform this function. A full time marketing and community liaison staff member would provide the ability to spread the message to departments and agencies across the State. The need to capture industry and business customers makes this position an imperative, as the business population will likely be unaware of the new capacity that comes with the improved facility. A second position that would assist the FTA in growing is a development director who would actively seek opportunities for secondary funding and donations from

business and charitable foundations throughout the State. There is strong support in the State for the mission of the Fire Service and the opportunity to capitalize on that support is not currently accessed. To model this effort the FPB could look to Universities in the State and examine how they have become successful in supplementing State funding through strong development programs.

Lastly a large number of part time adjunct instructional staff will be required to meet the increased demand for training and they will be the most significant factor in the successful capacity to grow the program. These personnel will be hired on an as needed basis as courses are identified. The need to fund these instructors will not occur until revenue is collected from the courses they teach. Maintaining a large pool of highly motivated and experienced adjunct instructors will be critical to keeping the courses dynamic and up to date. Emphasis should be on utilizing instructors who are well respected by other departments in the State and active in disciplines related to what they are teaching.



## 7. Facilities

A comprehensive needs analysis was completed to determine first the number and quality of existing training facilities and secondly what was required to meet the needs of the rapidly growing and changing service environment. The needs analysis was conducted as part of an update of the facilities master plan and included stakeholder workshops, focused interviews, a review of historical data, and most importantly a photographic study of target hazards and incident frequencies across the State. The results of the gathered information are represented in the facilities proposed in this section and represent the capacity to simulate the most frequently encountered problems found in the State.

### 7.1 Existing Facilities

Most of the existing training elements on the site are either in need of significant repair, incomplete, or past their usefulness as a training element. A great deal of money is currently being spent to extend the life of training structures and props to simply keep the Academy up and running. Very little is going to meeting the needs of a rapidly changing service environment. Classrooms and offices are housed in aging and deteriorating modular buildings that are in need of replacement and they provide very little to create an appropriate and efficient learning environment. The lack of adequate facilities has led many agencies to reduce their usage of the facility and serve as a barrier to increase offerings that will meet the expectations of students. Many of the structures are one band aid or patch away from a safety hazard and have reached a critical point for replacement to simply maintain current usability.

**Live Fire Burn Structure**





The live fire burn tower is the primary training area for the Academy playing a crucial role in providing training to fire departments, as well as being the primary structure for the Recruit Academy. The 6 story structure is in need of immediate replacement as it is not only outdated but rapidly becoming a safety concern. The tower does not replicate modern training environments, or have modern safety features, and the maintenance cost for the structure continues to rise. Many of the surrounding support buildings are deteriorating and inefficient and some such as the SCBA building have never been completed.

### **Classroom/Administration**



As was noted previously the classrooms are a far cry from meeting the standards for quality educational facilities. Not only are they unattractive and deteriorating, they lack in modern technologies and serve to create an image that implies a lack of commitment. There is nothing about the classroom or office facilities that serves to create a welcoming



and efficient training space and thus it increases the difficulty in conducting training programs that will be attractive to people and make them want to come to the facility. The image of the facility suffers and contributes to the widespread apathy in regards to the future development of the facility.

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## Aircraft Rescue Firefighting (ARFF) Prop



The ARFF program represents a bright spot in the concept of public private partnerships but again the prop is aging and much of the planned infrastructure around the prop has never been completed. The prop consists of a 20,000 square feet burn pit with a partial aircraft prop in the center. The prop is in need of replacement and update. The area also has a couple of support buildings that house the ARFF vehicles and maintains the control room and storage. Lack of classroom



space has forced the use of a storage loft to be utilized as a classroom, again creating a very inefficient and unappealing learning environment. The entire area lacks of hard surface and has seen little improvement or updating since its original establishment. The ability to utilize fossil fuel for the trainer is a major draw but the supply and storage systems are in need of upgrades for improved performance and safety.

## Flammable Liquid Props



The flammable liquid props pad area has largely become useless and obsolete. The area has eight burn pads that can utilize gasoline, diesel and LPG for fuels. The current layout and mock ups do not represent modern training requirements



and have become obsolete. The ability to burn multiple fossil fuels is considered a positive but the delivery system is in need of modernization and improved safety features.

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## Hazardous Materials Prop

The hazardous materials prop building is a 10,000 square foot metal building that contains a rail car, storage tanks and a confined space training area. Although this structure is in good condition it is not being fully utilized to its potential. It has in essence become a storage and classroom building due to limitations throughout the facility and does not maximize its potential as a scenario based Haz-mat trainer.



## Marine Shipboard Trainer



The Marine Shipboard Trainer is a 40 by 30 foot concrete structure, three stories high. It is designed to represent the mid-section of a ship and provide fires commonly encountered on the interior of a ship. A collection of cargo containers has been added over time to simulate the extension of the ship. The ship trainer has been a desirable training venue as it

has the ability to burn live fuels. Recent structural damage has been revealed, however, and the trainer has become a safety hazard and exceeded its useful lifespan. A permanent replacement for the trainer is required and should include a complete ship including modern safety and training features.

## 7.2 Proposed Facilities

The vision for the FTA is to create realistic training environments that closely duplicate the challenges encountered by firefighters across the State. Too often training facilities do little to recreate the context in which service is provided and thus serve to limit the effectiveness of training. Training in context is a key factor in limiting injury or death and improving performance, as it is the only way to create the stress and information overload common in chaotic emergency events.

To this end a Target Hazard Photo Study was conducted as part of the master planning process. Stakeholders from across the State were asked to document photos of target hazards in their service area with emphasis on capturing those hazards they found

difficult to duplicate for training purposes. The goal of the study was to find common areas of concern that could be duplicated in facilities added or improved at the FTA. Each department was asked to provide 5 photos of target hazards in their area along with a brief description of the nature of the Hazard. After the photos and data were collected they were examined for common themes and reoccurring building or hazard types. Stakeholders then confirmed this information during one of several stakeholder workshops conducted at the FTA.

The Survey revealed common concerns shared throughout the State and provided areas of emphasis that should be addressed to serve both small and large departments across the State. They include the following:



**Older, often Deteriorating Construction**

**Storage of Large Quantities of Hazardous Materials**



**Large Commercial Port Facilities**



**Heavy Industry**



**Large Commercial Retail**



**High Occupancy Public Assembly**



**Public Marina and Commercial Waterfront**



**Lumber Industry Facilities**



**Commercial and Residential Housing with Underground Parking**



**Rural Lodging and Commercial Facilities lacking fire protection**



**Large Historic Structures**



**High Rise Structures**



**Large Commercial Office and Warehouse Structures**



**Aircraft and Other Heavy Manufacturing**

Based on the Target Hazard information confirmed by Stakeholders, the master plan team began to develop concepts and plans for incorporating findings into the master plan for the FTA. The process included examining existing buildings for potential improvements, as well as reexamining those structures proposed under the burn building pre-design. The process

then looked at what additional buildings or training props were necessary to respond to the findings of the Target Hazard Study with an emphasis on creating a realistic context for each. The proposed response to the Target Hazard Study was then presented again to the Stakeholders group during subsequent workshops and further refined based on input received.

The proposed facilities and improvements described reflect the master plan response to the Target Hazard Study.

- ① EXIST DORMITORY
- ② SWIFT WATER
- ③ W/ LAND INTERFACE
- ④ ARFF & SUPPORT BUILDINGS
- ⑤ EXIST SURFACE WATER STRUCTURE
- ⑥ DEMO ALL MODULAR STRUCTURES
- ⑦ NEW ADMIN/CLASSROOM/INJURING BUILDING
- ⑧ NEW REHAB. BUILDING
- ⑨ NEW COMMERCIAL BUILDING
- ⑩ EXIST BURN BUILDING MODIFY TO USAR
- ⑪ CAR FIRE IN PARKING LOT
- ⑫ NEW RESIDENTIAL BUILDING
- ⑬ NEW SUPPORT BUILDING & PALLET STORAGE
- ⑭ EXIST SCBA BUILDING
- ⑮ NEW APARTMENT BUILDING
- ⑯ NEW PALLET STORAGE BUILDING
- ⑰ EXIST FIRE STATION
- ⑱ EXIST SHIP TRAINER
- ⑲ NEW MOAT & MARINA PROP IN NEW WATER/DOCK
- ⑳ CONTAINER PROP
- ㉑ RUNNING FUEL SPILL PROP
- ㉒ NEW RAIL PROP
- ㉓ NEW INDUSTRIAL
- ㉔ NEW TANK FARM
- ㉕ NEW 3 SIDED MANUFACTURE PROP. BUSINESS/UNHAZ/SUPPLY/HT
- ㉖ EXIST FUEL FARM
- ㉗ OVERTURNED TANKER PROP
- ㉘ NEW TRANSPORTATION IMVY
- ㉙ NEW HWY OVERPASS
- ㉚ NEW VEHICLE EXTRICATION
- ㉛ EXIST SEWER BUILDING
- ㉜ EXIST HAZ MAT
- ㉝ NEW TRENCH/CONFINED SPACES
- ㉞ EXIST WATER STRUCTURES
- ㉟ NEW RAIL CROSSING
- ㊱ EXTEND EXIST RAILLINE
- ㊲ EXIST WELL
- ㊳ COVERED OUTDOOR CLASSROOM WITH TOILET & SCBA SUPPORT
- ㊴ ARSON INVESTIGATION
- ㊵ ARRIVAL MONUMENT
- ㊶ EXIST PUMP HOUSE
- ㊷ EXIST WATER TREATMENT



WASHINGTON STATE PATROL FIRE TRAINING ACADEMY MASTER PLAN 2013



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## 7.2.1 The Site and Site Development

The site is located at 50810 SE Grouse Ridge Road just outside the community of North Bend, Washington. All additions

and improvements outlined below will take place within the existing available land but additional surrounding land may be required in the future.



## 7.2.2 Training Field/Live-Fire Cityscape



The improvements to the training field and live fire structural training areas, including the creation of a Live-Fire Training Cityscape, is the area of greatest need and represents the greatest potential for increasing the quality and quantity of programs. Recent surveys of department training needs nationwide have revealed the lack of realistic hands-on training as a leading obstacle facing most departments. This pattern is consistent with what is found in Washington State. The type of advanced training facility required to realistically address this problem is beyond the financial capabilities of most communities; but the lack of access to such a facility can

lead to a dramatic increase in losses as the result of injury, liability and fire damage. The existing live fire structure and the ability to burn Class A materials has made the FTA the only source available to many departments in the State to conduct such training, but age and repeated use has seen the structure exceed its useful life cycle. The inability to conduct live fire in a realistic context has also hampered training efforts and fails to address the myriad of activities that are going on during an emergency event, all of which create potential hazards to the operation.

The construction of the proposed live fire training structures and support facilities and will:

- Improve realistic fire training thereby reducing the risk of injuries and deaths of firefighters and civilians
- Improve Safety of Training
- Help reduce the amount of losses associated with fire damage statewide
- Enhance Competency and Morale in the response community
- Provide improved training Statewide
- Improve coordination and efficiency among agencies responding to large scale incidents

The Training Field, anchored by the Live Fire Burn Cityscape, will be the driving force behind improving emergency response capabilities. This area will bridge the gap that exists between current training and the reality of the public safety emergency situations the student will encounter every day. The Training Field is planned for eventual expansion as future emergency training methods evolve and this growth should occur naturally in a manner similar to how an actual city or area grows. Context should be a key consideration in all design decisions and great

care should be taken to avoid cutting up and grouping elements in a manner that would not reflect their context in the real world.

The design of the field is a very crucial aspect in reaching the educational goal of training in context. The training field and its components will relate to each other in a manner that enhances each component and maximizes flexibility and usability. Upon entering the field, the trainee should recognize hazards found in communities throughout the State. The layout of the streets and the buildings will echo those encountered on the job and enhance the opportunities for holistic training. This is not unlike building a theme park, with the theme being a replication of communities and rural areas in Washington State. Each structure that becomes a part of the field will serve to enhance this feeling of community and add realism to the training. By creating an environment that recreates the actual work environment in form and function, the educational value and applicability of the training will be improved tremendously and increase the opportunities to practice all elements required in a successful emergency incident. The goal is to immerse the student into interactive educational opportunities from the moment they enter the field.

**Examples of the types of simulations that are anticipated include the following:**

Structural Live Fire	Vehicle Fire	Multi-Agency Incident
Trench Rescue	Confined Space Rescue	Disaster Drills
Structural Collapse	Railroad Emergencies	Multi-Company Incident
Hazardous Materials Mitigation	Flashover Training	Mass Casualty Incident
Traffic Incident/Vehicle Extrication	Swift Water Rescue	Natural and LP Gas Fire
Tank Truck Emergencies		

### 7.2.3. Administrative/Educational Building



The Combined Administrative/Educational Building is the second critical component necessary to create an integrated educational public safety training facility that efficiently and effectively serves emergency responders throughout the State. The goal of this component is to create a building that becomes an integral part of the learning process, demonstrates respect and commitment to the students, and assist in establishing the FTA as a primary destination for training. The idea is to create an environment that plays a role in mentally preparing the student to learn and includes tools that facilitate that learning. The building should function to maximize interactive opportunities and give the student the sense they are truly in

a higher education environment as opposed to a collection of modular buildings thrown together. This dynamic learning environment will complement the other areas of the Training Center and provide the opportunity for a unique educational experience including the opportunities to host large groups for training seminars and meetings. The building will allow the student to learn in an environment that is comfortable, limited of distractions, and designed to promote interaction and knowledge exchange.

Design features that honor the tradition of the fire service throughout the years will also help instill a sense of pride and

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loyalty in the students attending courses.

Each classroom in this facility should be designed to address the unique requirements of emergency response education. Individual design features that consider the firefighter's need to blend academic learning with hands-on technical skills will enhance the student's ability to combine the two aspects.

All classrooms will be designed to match the nature of the specific types of response education with the most efficient learning environment in which to accomplish the objectives. Placement of classrooms will also enhance the learning

environment by creating a natural grouping of similar classes promoting interaction among students and increasing the learning opportunities.

The placement of administrative and faculty offices is critical to the function of this building. Interaction between faculty and students enhances the learning opportunities while contributing to the understanding of the student problems and needs. All aspects of day-to-day operations should become more efficient due to the centralization of administrative functions and allow better communication exchange.

## 7.3 Detailed Phased Components

### **PHASE ONE**



## The Live-Fire Training Buildings



The Live-Fire Training Buildings, also referred to as “the burn buildings,” will be designed to allow real-time, live-fire and emergency training simulations. Design consideration will be given to fire spread, rescue, ventilation and special problems. The structures will be designed to maximize the number of simulated emergency and disaster situations that can be created.

The design features of the Live-Fire Training cityscape will work to create a variety of approach considerations that may be incorporated into training sessions. Landscaping and street to building setback variations will assist in increasing approach considerations. Streetlights will be located around

the burn structures and will be used for both lighting and as a factor in training evolutions. Electrical power line simulation system will be designed to allow the use of cable to simulate above ground power lines. Utility control simulators including electric, gas and water shall be located around the structures.

### Single Family Residential

The Single Family Residential structure will be representative of a residence commonly found throughout the State. This structure represents one of the highest priorities of the cityscape and will be equipped to create realistic, real time scenarios that can simulate incidents performance requirements from

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notification to units cleared. The structure represents the bread and butter operation for the fire service and thus will provide good usage for all companies and all skill levels. The structure will be designed to facilitate fire throughout the structure.

### **Multi-Family Residential**

The multi-family residential will replicate one building of a typical apartment complex found throughout the State. The structure will be multi-storied to allow for scenarios simulating the challenges by above ground operations that have a high potential for trapped occupants. At least one unit will be designed with the garage on the first floor with a residential unit directly above. Working standpipe and sprinkler systems will be installed and have the capability for instructor controlled function. The structure will be designed to accommodate live fire throughout the structure. A small parking lot will be constructed in front and back of the unit with multiple points of impeded access.

### **Commercial High Rise Burn Structure**

The commercial high-rise burn structure will be a multi-story building that is designed to reflect the current trends and associated hazards found in hotel and office building construction common throughout the State. This building will replace the aging and deteriorating burn tower and will allow for realistic training in the coordination required in this type of structure fire. The revised tower and burn capabilities will greatly exceed the training opportunities provided by traditional fire training towers and thus enhance the capacity

to create realistic scenarios for trainees. The building will be designed with different floors representing different types of occupancies. The floor plans will include representations of a hotel, apartment, and office structure. The ground floor will provide elements of commercial storefront as well as the potential to mock up a simulated hotel lobby area. Live Fire will be accommodated on each floor with multiple accommodations allowed for future expansion. The structure will be designed to accept forcible entry doors in multiple locations. Breachable wall cutouts between units will be designed on each floor. Gas and electric utilities simulators that can be manipulated will be included inside and outside of the structure in appropriate locations. Simulated utilities will be designed for the roof and be stabilized to simulate natural tie off points for high angle rescue training. The High Rise will also include an elevator shaft to simulate elevator rescue as well as allowing training in elevator usage during firefighting operations. A variety of working elevator doors will be placed on the different floor levels. A manhole opening will be placed above the elevator shaft to be used in elevator and confined space rescue courses. Access to the roof of the high rise will be available via interior stairways. Suspended ceiling simulators will be placed strategically throughout the building to allow for inspection for hidden fires. Complete standpipe and sprinkler coverage will be designed into the building but should have the ability to be controlled by the training instructor. A working alarm system will be installed that can also be controlled by the instructor. (It is recommended that a partnership be explored to provide for this equipment and installation.

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## Structural Collapse

The existing burn tower should not be torn down as it can be a valuable structure for other types of training including structural collapse. The structure is not safe for burning but due to its location and size it has the potential to be a highly effective rescue trainer as well as serve as an exposure for the new burn structures. The old structure will remain intact and can be utilized to replicate an office or other type of commercial structure. Additional elements can be added around the structure to simulate a realistic collapse of a building or parking garage. Bent structural steel, collapsed floors, and a large rubble pile could simulate the collapse of the structure and allow for changing the position of floors and pieces of the debris field between exercises and training sessions. The two elements could be used independently or in conjunction with each other.



## PHASE TWO

### Combined Administrative/Educational Building

The Administrative/Classroom Building will include state-of-the-art classrooms and will also house administration, dining, and single occupancy hotel space for the FTA. Current space is severely lacking and represents one of the biggest barriers to reaching fire service students and others throughout the State. The lack of modern and comfortable facilities poses significant challenges to creating an efficient learning environment and many students expressed their unwillingness to attend classes at the FTA due to the poor condition of the facilities. Housing at the FTA has consistently been rated as a barrier to attendance and many of the students the improved facility needs to reach are unwilling to stay in shared dorm rooms with little to offer during downtime.

The Administrative/Educational Building is a key strategic addition to the FTA and will be designed to make the FTA a destination site for training. The setting of the FTA is one of the most beautiful for a training facility anywhere in the world and quality classroom and housing space will make it attractive to large groups, conferences, and seminars for both the public and private sector.

### Multi-Story Residential Arson Investigation

During stakeholder meetings, a large number of participants expressed the need to construct arson investigation facilities at the FTA. The availability of facilities where scenarios can be built and burned using fossil fuels are few and far between

and this severely limits the ability to train investigators. The multistory arson structure will be designed to allow the repeated construction and destruction of contextual arson scenarios. The facility will allow instructors to duplicate actual arson events and then allow the students to investigate as they would after an actual fire. The scenario may be used for multiple classes and then rebuilt at any time to create new investigative situations. This facility will also allow for the creation of simulated clandestine drug labs that will allow both fire and law enforcement to gain valuable skills in both responding to, and investigation of these dangerous makeshift labs.

### **ARFF Upgrades and Marine/Transportation**



### **ARFF Upgrades**

Phase Three will include badly need upgrades to the ARFF training area and include new training props as well as safety improvements to the fuel delivery and storage system. A new fuselage for the trainer is included and the entire site will be paved and lit to simulate airport conditions. The addition of a mock hangar will allow for simulating storage and manufacturing processes related to aircraft and also provide an area for large area search training.

### **Marine Upgrades**



### **PHASE THREE**

Improvements to the ship trainer will include replacing the existing ship trainer with a full scale replica of a ship including modern safety and training features. The completion of a surrounding shallow and deep water pool will place the ship in the proper context while creating the hazards and challenges posed by on water emergencies. The addition of a Marina simulator was a common request from departments across the State and the new trainer will realistically duplicate the challenges faced in accessing these potentially rapidly spreading hazards. The marina prop will be one of the only of its kind in the world and has the potential to draw users from across the State as well as the Northwest region.

### **Rail and Cargo**

Efforts are already underway to partner with Rail companies in the State to create realistic simulations of rail emergencies. Phase Three will add infrastructure and cargo container simulations that allow for multiple types of rail incidents including crossing accidents, derailment, and hazardous materials releases.

### **PHASE FOUR**



### **Hazardous Materials Upgrades**



Phase Four focuses on upgrading the existing Hazardous Materials building utilizing modern technology to create realistic scenario based training. The features added will include an a loading dock area and warehouse props including overflowing acid baths, leaking gas cylinders, leaking rail cars, burning hazardous solids, and simulated

electrical emergencies. This phase will also add and improve confined space training options that often go hand and hand with hazardous materials training.

### Trench Rescue



Phase Four will also add trench rescue capabilities to the facility. The trench rescue-training site will consist of a series of concrete trenches of varying width and depth with at least one intersecting trench. Trenches will be designed to reflect sites as they would be encountered in the community and thus will be incorporated into the cityscape as much as possible. Trenches will be designed with multiple simulated utility hazards such as gas lines, electric lines, and water lines. The utilities simulation will include ruptured water lines that flood the trench, ruptured gas lines with vapor escape, and ruptured electric with arching simulation. All simulations will be instructor controlled. The design will also allow for safety considerations such as rapid evacuation of water in case of emergency.

### PHASE FIVE



### Highway and Transportation



### Highway/Vehicular Incident Simulation Site

The Vehicular Incident Simulation Site will be designed to enable the students to develop the skills required to operate safely and effectively at the scene of a vehicle accident. A great deal of interest was indicated during the master plan process and the Department of Transportation has indicated a strong desire to assist in the development of this area.

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Simulation of a multilane highway with overpass will create a realistic training area and allow for both small incidents and incidents involving multiple hazards and disciplines. The training areas will consist of cutting, storage and main incident simulation areas. The subjects covered in the Vehicular Incident Simulation Site will demonstrate the tactical approach to a "Casualty Centered Rescue" with consideration given to logistical support by operational personnel and a diverse group of response agencies. The site will be designed to allow simulation of traffic accidents requiring students to adopt the team approach to bring the incident to a successful conclusion. Design will also consider the many different locations that a major incident may occur with many accidents resulting in the vehicle coming to rest on uneven or unstable terrain resulting in difficult access. The student will also be faced with the possibility of the vehicle being in a position other than upright. The streets providing access to this area will force the student to address scene access and control issues that may be encountered in the field.

### **Train Derailment/Truck Accident/Hazmat**

Several areas will simulate common transportation emergencies. Public and Private agencies involved in transportation have shown a great deal of interest in upgrading training areas and indicated a strong willingness to support the development of training props and structures. A train emergency simulator will be designed to include both freight and passenger trains. A simulated railroad-crossing incident will be provided for and will allow for multi-hazard incidents to be created. The

freight cars will have simulation equipment that will allow for the release of hazardous chemicals both gas and liquid. Simulated waterways and storm drains will be designed to allow for runoff containment and mitigation training. Future development may include industrial simulations to include loading and off loading of materials.

### **Swift Water Rescue Trainer**

Many rescuers are killed or injured each year during swift water operations including a large number during training. The uncontrolled nature of most training areas make it difficult to realistically train without encountering a high level of risk of injury. The swift water rescue trainer will be designed to offer a realistic but safe simulation of the conditions and hazards associated with rapidly moving and/or rising water. The trainer will include the ability to train on defensive swim tactics, wading operations, rescue from submerged cars, boat operations, and low water dam operations. Hazards found in the numerous rivers and streams found in the State will be incorporated into the design. The site will be designed in association with the marine training area and incorporate the natural terrain to increase realism.

## PHASE SIX



### Industrial and Manufacturing



The sixth and final phase of the master plan will create a much needed training area for industry and manufacturing. Working in conjunction with industry throughout the State, a simulated industrial and manufacturing complex will be created including the use of donated materials to accurately simulate common problem areas encountered by industrial fire brigades. Props will range from leaking flammable gas

and liquids to over pressurization and explosions. Additional rail props will also be added.

A large manufacturing structure will also be completed to include simulations of large scale manufacturing and storage facilities.

### ADDITIONAL TRAINING FIELD FUNCTIONAL AREAS

#### Bomb Range

The remote location of the training site provides the opportunity for the consideration of a future bomb range and teaching area to be constructed. The natural topography is conducive to accommodating this type of facility, which is increasingly in demand across the country. The construction of a bomb range will increase opportunities for law enforcement and fire to train together and have the potential to generate revenue via usage by local State and Federal law enforcement agencies including the ATF. Stakeholder meetings revealed a strong need and demand for this type of facility and there are very few locations that are as advantageous and viable as the FTA site.

#### Outdoor Classrooms

Outdoor classrooms will be strategically located in various phases to provide for brief periods of instruction in a location that limits time away from training props. The outdoor classrooms will provide open-air protection from the elements and have an integrated misting system installed. The outdoor classrooms will have restroom and watering facilities as

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well as air refilling stations. Additional air refilling stations will be added throughout the site as needed. Seating will accommodate approximately 30 students seated at all weather benches or bleachers. Whiteboards will be placed at the front of the classroom. Equipment storage areas will be integrated into the design of the outdoor classroom.

### **Equipment Storage**

Ample storage will be added throughout the facility to store training equipment safely and efficiently. Emphasis will be on providing storage that is convenient for training exercises reducing the amount of time required for preparation, operation, and conclusion of training sessions.



# 8. Financials

## 8.1. Development Cost Estimates by Phase

**PHASE ONE - \$16,000,000.00**



**PHASE TWO - \$30,000,000.00**



**PHASE THREE - \$15,900,000.00**



**PHASE FOUR - \$4,400,000.00**



**PHASE FIVE - \$9,400,000.00**

**PHASE SIX - \$13,000,000.00**



8.2. Cost Benefit Analysis

Sustaining a high quality training facility in any part of the public safety market is challenging. Successful facilities recover the cost of operation and maintenance of the facility and work to generate positive revenue streams that allow the facility to remain dynamic and relevant over many years. Although

the bottom line remains an important aspect of success, analyzing the full benefits of a training facility such as the FTA requires moving beyond a simple discussion of profit and loss. In conducting a cost benefit analysis, some discussion must focus on the long-term benefits to the community that are often difficult to quantify.

**Some of the many identified benefits of the improved facilities include:**

Realistic Training	Improved Community Preparedness
Increased Safety	Improved Agency Coordination
Improved Firefighter Performance	Enhanced Communication Capabilities
Enhanced Skills	Reduction in Property Loss Numbers
Expanded Response Capabilities	Improved Life Safety
Improved Workforce Morale	Reduction in the Cost Associated with Injuries

## 8.2.1 Revenue Projections

Revenue projections utilized in the financial model and presented in the cash flow analysis below were developed by first examining market rates and thresholds for comparable

facilities and training courses in the State of Washington and the surrounding region, as well as nationally. Secondly historical revenue data was studied to determine continuing revenue potential related to existing operations.

### REVENUE PROJECTIONS

<b>Current Annual Revenue</b>			
<b>State Charges and Miscellaneous Revenue</b>			<b>\$1,243,783</b>
<b>Additional Revenue by Phase</b>		<b>Estimated Revenue Per 8-Hour Period</b>	
		<b>at today's price</b>	<b>at opening date*</b>
Phase One	(opens in Year 1)	\$1,500	\$1,500
Phase Two	(opens in Year 3)	\$1,250	\$1,313
Phase Three	(opens in Year 5)	\$1,500	\$1,656
Phase Four	(opens in Year 7)	\$750	\$870
Phase Five	(opens in Year 9)	\$750	\$914
Phase Six	(opens in Year 11)	\$1,500	\$1,920
<b>Total</b>		<b>\$7,250</b>	<b>n/a</b>
Assumed # of 8-Hour Training Periods Per Year		275	
Maximum # of 8-Hour Training Periods Per Year		425	

\*Estimated Revenue at opening date is based on today's price multiplied by an annual price increase. (See Operating Assumptions for actual % increase).

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## 8.2.2. Expenses

Expenses for the financial model were estimated by utilizing existing historical data related to existing operations with added expenses calculated for expanded facilities and usage.

### EXPENSE PROJECTION

<b>Current Annual Operating Costs:</b>	
Salaries and Wages	\$643,216
Employee Benefits	\$219,301
Professional Service Contracts	\$349,734
Goods and Other Services	\$921,244
Travel	\$7,550
Capital Outlays	\$76,898
Grants, Benefits & Client Services	\$222,708
Debt Service	\$119,399
Interagency Reimbursements	(\$26,048)
<b>TOTAL</b>	<b>\$2,534,002</b>

## 8.2.3. Operating Assumptions

### ASSUMPTIONS

<b>General Assumptions:</b>	
Assumed # of 8-Hour Training Periods Per Year	275
Maximum # of 8-Hour Training Periods Per Year	425
<b>Cash Flow Assumptions:</b>	
<b>Revenues</b>	
All Phases begin at 100% of Assumed # of 8-Hour Training Periods/Year	275
# of 8-Hour Training Periods increases annually by	0.0%
Price increases annually by	2.5%
Phase One opens in Year 1 with subsequent phases opening in 2 year intervals	
<b>Expenses</b>	
<b>Year 1 - Year 11 "Growth Years"</b>	
Annual operating costs increase annually by 10 yr average CPI increase*	2.44%
Plus an additional increase to accommodate growth	2.44%
<b>Year 12 - Year 25 "Maturity"</b>	
Annual operating costs increase annually by 10 yr average CPI increase	2.44%

\* 10 year average Consumer Price Index (CPI) increase of 2.44% was obtained from the Bureau of Labor Statistics and is based on the annual percent change in CPI for all items excluding shelter from 2003 - 2012 for the Seattle-Tacoma-Bremerton area

## 8.2.4. Cash Flow Analysis

The model for the cash flow analysis utilizes existing expenses and revenue figures and adds Phase One expenses and revenue beginning with year one. Subsequent phases are

added to the model in two year increments coinciding with the proposed phasing plan. The findings from the model indicate the potential for the facility to become profitable upon the completion of Phase 6, which occurs in year 11.

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9
<b>Estimated Revenues</b>									
Current Annual Revenue	1,243,783	1,274,878	1,306,750	1,339,418	1,372,904	1,407,227	1,442,407	1,478,467	1,515,429
<b>Additional Revenue by Phase</b>									
# of 8-Hour Training Periods Per Year	275	275	275	275	275	275	275	275	275
<b>Estimated Revenue per 8-Hour Period</b>									
Phase One	1,500	1,538	1,576	1,615	1,656	1,697	1,740	1,783	1,828
Phase Two			1,313	1,346	1,380	1,414	1,450	1,486	1,523
Phase Three					1,656	1,697	1,740	1,783	1,828
Phase Four							870	892	914
Phase Five									914
Phase Six									
Total Additional Revenue	412,500	422,813	794,535	814,399	1,290,081	1,322,333	1,594,578	1,634,443	1,926,600
<b>Total Estimated Revenues</b>	<b>1,656,283</b>	<b>1,697,690</b>	<b>2,101,285</b>	<b>2,153,817</b>	<b>2,662,985</b>	<b>2,729,560</b>	<b>3,036,986</b>	<b>3,112,910</b>	<b>3,442,029</b>
<b>Estimated Expenses</b>									
Annual Operating Costs	2,534,002	2,657,661	2,787,355	2,923,378	3,066,039	3,215,662	3,372,586	3,537,168	3,709,782
<b>Total Estimated Expenses</b>	<b>2,534,002</b>	<b>2,657,661</b>	<b>2,787,355</b>	<b>2,923,378</b>	<b>3,066,039</b>	<b>3,215,662</b>	<b>3,372,586</b>	<b>3,537,168</b>	<b>3,709,782</b>
<b>Net Income (Loss)</b>	<b>(877,719)</b>	<b>(959,971)</b>	<b>(686,070)</b>	<b>(769,561)</b>	<b>(403,054)</b>	<b>(486,102)</b>	<b>(335,600)</b>	<b>(424,258)</b>	<b>(267,753)</b>
<b>Net Income (Loss) %</b>	<b>-53%</b>	<b>-57%</b>	<b>-33%</b>	<b>-36%</b>	<b>-15%</b>	<b>-18%</b>	<b>-11%</b>	<b>-14%</b>	<b>-8%</b>

	Year 10	Year 11	Year 12	Year 13	Year 14	Year 15	Year 16	Year 17	Year 18
<b>Estimated Revenues</b>									
Current Annual Revenue	1,553,315	1,592,148	1,631,951	1,672,750	1,714,569	1,757,433	1,801,369	1,846,403	1,892,563
<b>Additional Revenue by Phase</b>									
# of 8-Hour Training Periods Per Year	275	275	275	275	275	275	275	275	275
Estimated Revenue per 8-Hour Period									
Phase One	1,873	1,920	1,968	2,017	2,068	2,119	2,172	2,227	2,282
Phase Two	1,561	1,600	1,640	1,681	1,723	1,766	1,810	1,856	1,902
Phase Three	1,873	1,920	1,968	2,017	2,068	2,119	2,172	2,227	2,282
Phase Four	937	960	984	1,009	1,034	1,060	1,086	1,113	1,141
Phase Five	937	960	984	1,009	1,034	1,060	1,086	1,113	1,141
Phase Six		1,920	1,968	2,017	2,068	2,119	2,172	2,227	2,282
Total Additional Revenue	1,974,765	2,552,169	2,615,973	2,681,372	2,748,406	2,817,117	2,887,544	2,959,733	3,033,726
<b>Total Estimated Revenues</b>	<b>3,528,079</b>	<b>4,144,316</b>	<b>4,247,924</b>	<b>4,354,122</b>	<b>4,462,975</b>	<b>4,574,550</b>	<b>4,688,913</b>	<b>4,806,136</b>	<b>4,926,290</b>
<b>Estimated Expenses</b>									
Annual Operating Costs	3,890,819	4,080,691	4,180,260	4,282,258	4,386,745	4,493,782	4,603,430	4,715,754	4,830,818
<b>Total Estimated Expenses</b>	<b>3,890,819</b>	<b>4,080,691</b>	<b>4,180,260</b>	<b>4,282,258</b>	<b>4,386,745</b>	<b>4,493,782</b>	<b>4,603,430</b>	<b>4,715,754</b>	<b>4,830,818</b>
<b>Net Income (Loss)</b>	<b>(362,740)</b>	<b>63,625</b>	<b>67,664</b>	<b>71,864</b>	<b>76,230</b>	<b>80,768</b>	<b>85,483</b>	<b>90,382</b>	<b>95,471</b>
<b>Net Income (Loss) %</b>	<b>-10%</b>	<b>2%</b>							

	Year 19	Year 20	Year 21	Year 22	Year 23	Year 24	Year 25	TOTAL
<b>Estimated Revenues</b>								
Current Annual Revenue	1,939,877	1,988,374	2,038,084	2,089,036	2,141,262	2,194,793	2,249,663	
<b>Additional Revenue by Phase</b>								
# of 8-Hour Training Periods Per Year	275	275	275	275	275	275	275	
Estimated Revenue per 8-Hour Period								
Phase One	2,339	2,398	2,458	2,519	2,582	2,647	2,713	
Phase Two	1,950	1,998	2,048	2,099	2,152	2,206	2,261	
Phase Three	2,339	2,398	2,458	2,519	2,582	2,647	2,713	
Phase Four	1,170	1,199	1,229	1,260	1,291	1,323	1,357	
Phase Five	1,170	1,199	1,229	1,260	1,291	1,323	1,357	
Phase Six	2,339	2,398	2,458	2,519	2,582	2,647	2,713	
Total Additional Revenue	3,109,570	3,187,309	3,266,992	3,348,666	3,432,383	3,518,193	3,606,147	
<b>Total Estimated Revenues</b>	<b>5,049,447</b>	<b>5,175,683</b>	<b>5,305,075</b>	<b>5,437,702</b>	<b>5,573,645</b>	<b>5,712,986</b>	<b>5,855,810</b>	<b>100,437,200</b>
<b>Estimated Expenses</b>								
Annual Operating Costs	4,948,690	5,069,438	5,193,133	5,319,845	5,449,649	5,582,621	5,718,837	
<b>Total Estimated Expenses</b>	<b>4,948,690</b>	<b>5,069,438</b>	<b>5,193,133</b>	<b>5,319,845</b>	<b>5,449,649</b>	<b>5,582,621</b>	<b>5,718,837</b>	<b>104,550,405</b>
<b>Net Income (Loss)</b>	<b>100,757</b>	<b>106,245</b>	<b>111,942</b>	<b>117,857</b>	<b>123,995</b>	<b>130,365</b>	<b>136,974</b>	<b>(4,113,205)</b>
<b>Net Income (Loss) %</b>	<b>2%</b>							



