



**DEPARTMENT OF FORESTRY AND FIRE PROTECTION
OFFICE OF THE STATE FIRE MARSHAL
Statewide Training and Education Advisory Committee**

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Date: March 1, 2019

Attachment 9

To: Ronny J. Coleman, Chairman
Statewide Training and Education Advisory Committee (STEAC)
c/o State Fire Training

From: Joe Bunn and Kevin Conant, Fire Service Training Specialist III

SUBJECT/AGENDA ACTION ITEM:
FSTEP – River/Flood Rescue Technician

Recommended Actions:
Approval of the River/Flood Rescue Technician FSTEP Curriculum

Background Information:

This curriculum was presented at the October 12, 2018 STEAC Meeting. This is the second reading of this curriculum. As of this date, we have not received any feedback or input on this new curriculum.

This course may be new to some STEAC members, however this curriculum has been utilized for training throughout the State of California since 2015. This course originally was developed and facilitated under a firefighter grant through Office of Emergency Services (OES). This project is a joint effort between the California Office of the State Fire Marshal (OSFM), State Fire Training (SFT), the Office of Emergency Services, Fire and Rescue Branch and CAL FIRE, Training Center (Ione). This curriculum was put into the developmental format that all FSTEP and Certification Trainings Standards utilize for SFT. The goal is to make this course available to the Fire Service as soon as possible keeping in mind respect for the process and wanting buy in for all the stakeholders throughout the State of California.

The concept of developing new FSTEP course curriculum is with the purpose of continuing education and professional development, which was approved by STEAC on April 18, 2014. Accordingly, stakeholders identified the need for the creation of numerous courses. The River/Flood Rescue Technician Course is just one of several

courses that have and are going through this process.

Therefore, a cadre of experienced subject matter experts with extensive technical expertise in the area of River/Flood Rescue as it relates to operations were selected from various agencies and backgrounds with the mission to create the content for this FSTEP course.

Cadre Leadership

Joe Bunn, Fire Service Training Specialist III, Deputy Chief (ret) US&R CA-TF8, Kevin Conant, Fire Service Training Specialist III, Battalion Chief (ret), US&R CA-TF3, Laura Garwood Meehan, Cadre Editor, Sacramento State.

Development Cadre Members

Billy Milligan, Firefighter, Riverside City Fire Department, Aide Barbat, Battalion Chief, San Diego Fire Rescue, Patrick Costamagna, Captain, Sacramento Fire Department, John Brenner, Captain (retired), Sacramento Fire Department, James Colston, Battalion Chief, San Marcos Fire Department, Robb Eichelberger, Lifeguard Sergeant, San Diego Fire Rescue, Zachary Boyd, Engineer, Kern County Fire Department, Paulo Brito, Engineer, San Jose Fire Department

Several of the cadre members are SFT Registered Instructors and all have extensive operational experience with special operations incidents as it relates to search and rescue operations in the River/Flood environment. The development of the material required one multi-day session for this curriculum. Because these are FSTEP Course Plans, the development of a Certification Training Standards (CTS) was not required. However, Terminal Learning Objectives (TLO) were established from the authority from the below standards that typically would be in the CTS. The majority of the TLO's and the supporting Enabling Learning Objectives (ELO) were developed from the authority of standards NFPA 1670 Standard on Operations and Training for Technical Search and Rescue Incidents (2017), and NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications (2017.) Additionally, NFPA Standards were considered such as 1500, 1521, 1561 with observance to ICS 420-1, Field Operations Guide, ICS-SF-SAR-020-, Swiftwater/Flood Search and Rescue Recommended Training, Skills and Equipment List (current edition) and several others references aided as supporting documents when creating the Course Plans.

The breakdown of the FSTEP course is as follows:

River/Flood Rescue Technician	
Didactic/Lecture	10:00 Hours: Minutes
Activities and Testing	30:00 Hours: Minutes
Course Hour Totals	40:00 Hours: Minutes

Analysis/Summary of Issue:

Following is an analysis of this new FSTEP course.

1. Neither the old legacy SFT Fire Officer or Chief Officer courses, nor the NFPA Fire Officer I-IV standards addressed the specific hazards and risks faced by an initial

incident commander at the scene of any technical search and rescue incident nor any River/Flood or water rescue operations. The only curriculum developed in regards to command and control of special operations is the SFT course, Incident Management of Special Operations, which was created to provide awareness level training for incident commanders in recognizing and managing the initial actions of the technical search and rescue incident safely. This course is highly recommended for any new to special operators that may have the responsibility of command and control of a River/Flood incident. Any career or volunteer fire service officer will benefit greatly from the design and content of that course as it relates to search and rescue in the River/Flood environment.

2. Planning and Logistics are a huge piece to this course. The number of instructors to students with activities and the environment to support the River/Flood search and rescue operations with all the safety elements involved. The site location is the key to success in this course. It is imperative to be able to demonstrate, facilitate and test all participants in the skills necessary to meet the standards set forth in the course plans.
3. In addition, this course suggests like any water rescue course that all students have completed OSFM Open Water Rescuer – Basic or equivalent prior to taking this course. The other options are the AHJ (Authority Having Jurisdiction) has a standard swim test that meets or exceeds the International Association of Dive Rescue Specialists (IADRS) Annual Watermanship Test. This prerequisite should not be an option in any water course this one included.
4. The instructors for this course need an extensive background in water rescue as it relates to the River/Flood environment. Strong experience in search and rescue techniques in this environment using and operating with all the equipment and PPE necessary to be in this environment is critical. Safety is paramount and having qualified instructor's limits exposure to incidents in any water environment.
5. The core content utilizes the authority NFPA 1006, 1670 standards, as well as 1500, 1521, 1561 and the above documents mentioned as supporting documents for the development of this course.

River Flood Rescue

Student Task Book [Month Year]

Cover Photo



California Department of Forestry and Fire Protection
Office of the State Fire Marshal
State Fire Training

River Flood Rescue

Student Task Book [Month Year]

Candidate: [Click here to enter text.](#)

SFT ID Number: [Click here to enter text.](#)

Fire Agency: [Click here to enter text.](#)

Issued By: [Click here to enter text.](#)

Issue Date: [Click here to enter text.](#)

This student Task Book includes the training standards based on NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications (2017) and NFPA 1670 Standard for Operations and Training for Technical Search and Rescue Incidents (2017).

Published by:

State Fire Training, 2251 Harvard Street, Suite 400, Sacramento CA 95815
(916) 568-2911

Cover photo courtesy of [name, organization]

Table of Contents

Purpose and Process	Error! Bookmark not defined.
Course Task Book Requirements.....	Error! Bookmark not defined.
Experience.....	Error! Bookmark not defined.
Position	Error! Bookmark not defined.
Course Performance Requirements.....	Error! Bookmark not defined.
Candidate Verification.....	12
Review and Approval	13
Signature Verification.....	14

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Purpose and Process

The State Fire Training student task book is a performance-based document. It lists the Classroom, Experience or Position, and Job Performance requirements for course completion.

Purpose

Task Book focuses on a single State Fire Training course and identifies the minimum requirements necessary to perform the duties of the course. Completion of this student Task Book verifies that the candidate has the required experience, holds the required rank or position, and has demonstrated the job performance requirements necessary to obtain that course completion certificate.

Responsibilities

Registered Instructor Responsibilities

A Registered instructor will only issue the Task Book after verifying the candidate has:

- Low-Angle Rope Rescue Operations (LARRO, 2010)
- Incident Command Systems 200 (Basic ICS)
- State Fire Training Auto Extrication (1996), SFT Vehicle Extrication (2015), or AHJ equivalent
- It is recommended that participants have completed the requirements of the authority having jurisdiction's (AHJ's) swim test.

Candidate Responsibilities

The candidate is the individual pursuing course completion. All candidates shall:

- Complete the Experience, Position, and Job Performance Requirements.
- Sign and date the Candidate verification statement with an original wet-ink signature.
- Retain a copy of the completed student Task Book.

Evaluator Responsibilities

An evaluator is any Registered Instructor at the course conducted in accordance to the Course Plan.

A task book may have more than one evaluator. All evaluators shall:

- Complete a block on the Signature Verification page with an original wet-ink signature.
- Review and understand the candidate's task book requirements and responsibilities.
- Verify the candidate's successful completion of one or more job performance requirements through observation or review.
- Sign all appropriate lines in the task book with an original wet-ink signature to record demonstrated performance of tasks.

Completion Process

When you receive your Task Book:

1. Thoroughly review the Experience, Position, and Job Performance Requirements segments to make sure that you understand them.
2. Complete the Experience segment.
3. Complete the Position segment.
4. Complete each requirement in the Job Performance Requirements segment and ensure that an evaluator signs and dates each one to verify completion.

Task Book Requirements

Experience

The candidate meets one of the following requirements for experience.

A minimum of two years' full-time paid experience in a California fire agency.

or

A minimum of four years part-time paid or volunteer experience in a California fire agency.

Assignment	Agency	Start Date	End Date

Please attach additional pages if more space is needed to document experience.

Position

The candidate meets the following qualifications for position. Performing in an acting capacity does not qualify.

Held the position of fire fighter or performed rescue duties within a California fire agency

Position	Agency	Appointment Date
[Insert position]		

Job Performance Requirements

All job performance requirements must be performed in accordance with the standards of the authority having jurisdiction (AHJ) or the National Fire Protection Association (NFPA), whichever is more restrictive.

Managing a Water Rescue Incident

Describe the components of managing a water rescue incident, given a variety of water rescue scenarios, the standards, and the policies and procedures of the AHJ. (OSFM)

_____ Date Completed

_____ Evaluator Verification

_____ Describe the scope and practice and standards.

_____ Describe rescue priorities:

- Low to high risk
- Rescue vs. recovery

_____ Describe legal considerations and practices.

_____ Describe the relevant components of the Incident Command System.

_____ Describe FIRESCOPE ICS-US&R 120-1 and 120-2 Operational System Description.

_____ Describe the actions taken to terminate and demobilize an incident.

Describing Dynamic Hydrology

Describe dynamic hydrology as it relates to rivers, channels, and floods, given a variety of water environments. (OSFM)

_____ Date Completed

_____ Evaluator Verification

_____ Describe the forces of dynamic water.

_____ Describe how to determine current speed.

_____ Describe how to determine cubic feet of water per second in a given river/channel.

_____ Describe river orientation.

_____ Identify river/channel features created by moving water.

_____ Classify rivers.

_____ Define the following terms:

- Upstream
- Downstream
- River right
- River left
- Volume (cubic feet per second)
 - Smiling/closed
 - Frowning/open
- Laminar flow
- Helical flow
- Eddies
- Eddy line
- Strainers
 - Sieves
- Pillows
- Upstream and downstream
- Low-head dam
- Hole
- Hydraulic
- Standing waves (haystacks)
- Aerated water
- Current vector

Evaluating Hazards and Identifying Safe Current Vectors and Safety Zones

Evaluate hazards in moving water, identify safe current vectors for navigation, and locate safety zones, given a variety of water environments. (OSFM)

_____ Date Completed

_____ Evaluator Verification

_____ Identify and describe hazards associated with river and flood rescue.

_____ Identify safe navigation current vectors.

_____ Identify areas and features that are safe zones in dynamic water environments.

Managing and Performing a Victim Search

Describe the management of and perform a victim search given a dynamic water emergency. (OSFM)

Date Completed

Evaluator Verification

_____ Describe search fundamentals:

- LAST
- PLS
- POD

_____ Describe witness management.

_____ Identify different tools used for searches.

_____ Describe reconnaissance, hasty (rapid), primary, and secondary search.

_____ Perform reconnaissance, hasty (rapid), primary, and secondary searches.

Identifying and Managing a Victim

Identify and manage a victim, given a dynamic water emergency. (OSFM)

Date Completed

Evaluator Verification

_____ Describe victim behavior.

_____ Describe management of family and bystanders.

_____ Describe medical considerations.

_____ Demonstrate water rescue c-spine techniques.

_____ Demonstrate a contact swim with a combative victim.

_____ Demonstrate a towed swim with a victim.

Describing and Using Multiple Communication Forms

Describe and use multiple forms of communication used for dynamic water operations, given an incident, whistles, and hand signals. (OSFM)

Date Completed

Evaluator Verification

_____ Describe the difficulties of communications in water rescue environment.

_____ Describe forms of communication and their use.

_____ Demonstrate forms of communication.

Describing Floods, Hazards, and Evacuation Procedures

Describe types and causes of floods and describe hazards and evacuation procedures associated with flood rescue operations, given a variety of incidents, the ICS FOG, and the DOT-ERG. (OSFM)

Date Completed

Evaluator Verification

_____ Describe types of floods.

_____ Describe the evolution of a flood.

_____ Describe utility hazards in flood environments.

_____ Describe hazardous material exposure, protection, and decontamination.

_____ Describe flood search, rescue, and evacuation procedures.

_____ Describe management of pets and livestock.

Describing Rescue of Vehicle Occupants

Describe the procedures and hazards associated with rescuing occupants, given a scenario involving a vehicle in dynamic water. (OSFM)

Date Completed

Evaluator Verification

_____ Describe sizing up the factors and hazards relating to a vehicle in moving water:

- | | |
|---|---|
| <ul style="list-style-type: none"> • Velocity • Depth • Width • Bottom composition • Speed of car when it enters the water | <ul style="list-style-type: none"> • Angle of car when it enters the water • Number and condition of occupants • Describe vehicle stability in dynamic water |
|---|---|

_____ Describe rescue considerations:

- In-water techniques
- Shore-based techniques

_____ Describe victim management.

Demonstrating Boat Rigging, Handling, Navigation, and Emergency Procedures

Describe and demonstrate rigging and basic handling of, navigation with, and emergency procedures for nonmotorized rescue boats, given a nonmotorized rescue boat and equipment. (OSFM)

Date Completed

Evaluator Verification

_____ Describe different types of nonmotorized rescue boats, including but not limited to:

- Rafts
- IRBs
- Jon boats

_____ Describe the components of a boat.

_____ Describe boat positions.

_____ Describe navigation options.

_____ Describe emergency procedures:

- Crew and victim retrieval
- Parbuckling
- Boat wraps

_____ Demonstrate how to paddle and maneuver a boat.

_____ Demonstrate how to right a flipped boat.

_____ Demonstrate how to unwrap a pinned boat.

Using Personal Protective Equipment

Identify, don, doff, and maintain PPE for water rescue operations, given personal protective equipment (PPE) and United States Coast Guard (USCG) standards for personal flotation devices (PFD). (OSFM)

Date Completed

Evaluator Verification

_____ Describe the types and use of PPE.

_____ Describe USCG standards for PFD.

_____ Describe the different types of PFD.

_____ Describe donning and doffing of PPE.

_____ Demonstrate donning and doffing of PPE.

_____ Describe proper care and maintenance of PPE.

Operating Basic Rescue Equipment

Identify and operate basic equipment used for water rescue operations, given rescue equipment, a victim, and a dynamic water environment. (OSFM)

Date Completed_____
Evaluator Verification

____ Describe the equipment used in water rescue.

____ Describe the use and limitations of each type of equipment.

____ Demonstrate the use of each piece of equipment.

____ Deploy throw bag according to NFPA 1006 Standard for Technical Rescue Personnel Professional Qualifications (2017).

____ Describe safety considerations when using each piece of equipment.

____ Describe maintenance and storage of each piece of equipment.

Performing Dynamic Water Rescue Skills

Perform rescue skills, given a dynamic water environment, PPE, a victim, and rescue equipment. (OSFM)

Date Completed_____
Evaluator Verification

____ Demonstrate how to swim in dynamic water.

____ Describe the techniques used for water rescue incidents.

____ Select the proper technique for each rescue situation.

____ Describe and demonstrate rescue swimmer techniques:

- Basic swim
- Ferry angle
- Strainer
- Eddy hopping
- Surfing

____ Describe and demonstrate shallow water crossings.

_____ Describe and demonstrate use of quick release buckle systems (blowout drill).

_____ Describe and demonstrate tethered swimmer operation.

_____ Describe and demonstrate board rescues.

_____ Describe and demonstrate foot and body entrapment rescue techniques.

Demonstrating Technical Rope Rescue Skills

Describe and perform technical rope rescue skills, given a dynamic water environment, PPE, a victim, and rescue equipment. (OSFM)

Date Completed

Evaluator Verification

_____ Describe the technical rope rescue systems used for dynamic water rescue incidents:

- Line-crossing equipment and techniques

_____ Select the proper system for each rescue situation.

_____ Describe and demonstrate tethered boat techniques.

- Two-point
- Other techniques

_____ Describe and demonstrate the use of tension diagonal for victim retrieval.

_____ Describe and demonstrate the use of a rescue boat on highline systems.

Candidate Verification

Candidate

Candidate: _____
Candidate's Printed Name

I, the undersigned, am the person applying for course completion. I hereby certify under penalty of perjury under the laws of the State of California, that completion of all experience, position, and job performance requirements made herein are true in every respect. I understand that misstatements, omissions of material facts, or falsification of information or documents may be cause for rejection or revocation.

Candidate's Signature

Date

Review and Approval

Course Completion Certificate Issued

I verify that the candidate has met all requirements for this course completion certificate.

State Fire Training Registered Instructor Printed Name

SFT Number

State Fire Training Registered Instructor Signature

Date

FINAL

Signature Verification

The following individuals have the authority to verify portions of this task book using the signature or initials recorded below.

Name: _____ (print)

Job Title: _____ (print)

Organization: _____ (print)

Signature: _____ (sign)

Name: _____ (print)

Job Title: _____ (print)

Organization: _____ (print)

Signature: _____ (sign)

Name: _____ (print)

Job Title: _____ (print)

Organization: _____ (print)

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Signature Verification

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Initials: _____ (initial)



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River/Flood Rescue Technician Implementation of New Curriculum

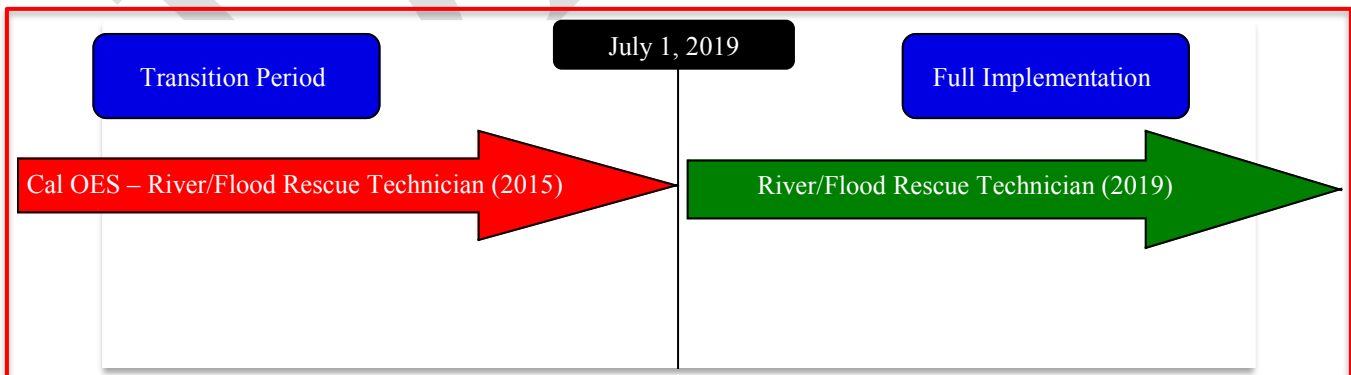
This document is intended to provide information for all State Fire Training (SFT) stakeholders on the new River/Flood Rescue Technician (2018) curriculum. The development of this curriculum was a collaborative effort with the Office of the State Fire Marshal, State Fire Training; the Office of Emergency Services, Fire and Rescue Division; and CAL FIRE, Training Center (Ione) to develop a number of water-based rescue curriculums requested by STEAC stakeholders. The curriculum was developed and formatted into the SFT curriculum development model. Stakeholders are encouraged to study this information carefully and seek clarification from SFT if questions arise.

River/Flood Rescue Technician (2018) The new course plan has been developed based on the authority of the current National Fire Protection Association (NFPA) Standards, which includes NFPA 1006, Standard for Technical Rescue Personnel Professional Qualifications (2017). In addition, ICS-420-1, Field Operations Guide, ICS-SF-SAR-020 Swiftwater/Flood Search and Rescue Recommended Training, Skills and Equipment List (current edition), NFPA 1500, 1521, 1561 aided among others as supporting documents when creating these Course Plans. The Course Plan will be available on the SFT website.

River/Flood Rescue Technician (40:00 hours/min)

FULL IMPLEMENTATION.....Effective July 1, 2019

River/Flood Rescue Technician (2019) Timeline



INSTRUCTOR REQUIREMENTSEffective July 1, 2019

Current SFT Registered Instructors that are instructors for the OES (Office of Emergency Services) Course titled: River/Flood Rescue Technician (2015) are authorized to teach River/Flood Rescue Technician (2018).

New instructors for River/Flood Rescue Technician (2018) shall meet the SFT requirements for Registered Instructor and shall be required to either take the course or apply for a Pace II review of their instructor qualifications, including appropriate education and practical experience relating to course content.

Additionally, a new instructor of the FSTEP course River/Flood Rescue Technician (2018), the following shall apply:

1. Position and Professional Experience:
 - a. Held a permanent position within a Recognized Fire Agency in California for a minimum of three years or;
Worked in a volunteer position or paid call firefighter with a Recognized Fire Agency in California for a minimum of five years.
 - b. Must have specific expertise in Technical Rescue as it relates to the River/Flood environment.

SFT STAFF COORDINATION

These FSTEP courses are new to State Fire Training.

POTENTIAL AGENCY IMPACTS

Fire agencies utilizing the existing CAL OES (Office of Emergency Services) River/Flood Rescue Technician should have little or no impacts making the transition from that course to the new update curriculum format for training or operational implementation.

NOTE: A Special attention should be paid to these new updated FSTEP courses, are NOT included in any of SFT certification tracks at this time.

Accredited Regional Training Programs (ARTP), Accredited Local Academies (ALA), community colleges and all other local delivery venues need to review the curriculum and seek approval from their curriculum committee/program sponsor, as appropriate.