

DEPARTMENT OF FORESTRY AND FIRE PROTECTION OFFICE OF THE STATE FIRE MARSHAL

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Attachment 11

Date: August 22, 2019

To: State Board of Fire Services

From: Joe Bunn, Fire Service Training Specialist III, State Fire Training

SUBJECT/AGENDA ACTION ITEM:

River/Flood Rescue Technician FSTEP Curriculum

Recommended Actions:

Approval of River/Flood Rescue Technician FSTEP Curriculum

Background Information:

This curriculum is being presented for the first time to STEAC and SBFS. During this presentation we are looking for feedback on this curriculum. This course may be new to some STEAC and SBFS 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 courses.

- 1. Following is an analysis of this new FSTEP course.
- 2. 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.
- 3. 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.
- 4. 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.
- 5. 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.
- 6. 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

<u>Standard for Technical Rescue Personnel Professional Qualifications</u> (2017) and

NFPA 1670 <u>Standard for Operations and Training for Technical Search and Rescue Incidents</u> (2017).

Published by:

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

Cover photo courtesy of [name, organization]

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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 c	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	
	Assignment	Agency	Start Date	Liid Date	
Pleas	e attach additional nages i	if more space is needed to docume	nt evnerience		
i icas	e attach additional pages i	in more space is needed to docume	п схрепенсе.		
		Position			
The candidate meets the following qualifications for position. Performing in an acting capacity does not qualify.					

Position Agency Appointment Date
[Insert position]

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

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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.

Describe the components of managing a water rescue incident, given a variety of water

Managing a Water Rescue Incident

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.

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Describe how to determine current speed.

Describe how to determine cubic feet of water per second in a given river/channel.				
Describe river orientation.	Describe river orientation.			
Identify river/channel features created by moving water.				
Classify rivers.				
Define the following terms:				
 Upstream 	Pillows			
 Downstream 	 Upstream and downstream 			
River right				
River left	 Low-head dam 			
 Volume (cubic feet per second) 	HoleSmiling/closed			
Laminar flow	o Frowning/open			
Helical flow	 Hydraulic 			
• Eddies	Standing waves (havetagle)			
Eddy line	(haystacks)			
Strainers	 Aerated water 			
o Sieves	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.

[Month Year]

Identify sa	fe navigation current vecto	ors.
Identify ar	eas and features that are s	afe zones in dynamic water environments.
Managing ar	nd Performing a Vict	im Search
Describe the mar emergency. (OSF	•	victim search given a dynamic water
	Date Completed	Evaluator Verification
Describe s	earch fundamentals:	
• LAST		
• PLS		
• POD		
Describe w	vitness management.	
Identify di	fferent tools used for searc	hes.
Describe re	econnaissance, hasty (rapid	d), primary, and secondary search.
Perform re	econnaissance, hasty (rapid), primary, and secondary searches.
	nd Managing a Victiage a victim, given a dynan	im nic water emergency. (OSFM)
	 Date Completed	Evaluator Verification
Describe v	ictim behavior.	
	nanagement of family and	bystanders.
	nedical considerations.	•
	ate water rescue c-spine te	chniques.
	ate a contact swim with a c	

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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 commu	nications in water rescue environment.	
Describe forms of communication and their use.			
Demonstrate forms of communication.			
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 typ	es of floods.		
Describe the evolution of a flood.			
Describe utility hazards in flood environments.			
Describe haz	ardous material expos	sure, protection, and decontamination.	
Describe floo	od search, rescue, and	evacuation procedures.	
Describe ma			
	nagement 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)

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Date Completed	Evaluator Verification
Describe sizing up the factors and haza	ards relating to a vehicle in moving water:
• Velocity	 Angle of car when it enters the water
DepthWidth	 Number and condition of occupants
Bottom composition	 Describe vehicle stability in dynamic water
 Speed of car when it enters the water 	iii dynamie water
Describe rescue considerations:	
 In-water techniques 	
 Shore-based techniques 	
Describe victim management.	
Demonstrating Boat Rigging, Han Procedures Describe and demonstrate rigging and basic h procedures for nonmotorized rescue boats, g equipment. (OSFM)	nandling of, navigation with, and emergency
Date Completed	Evaluator Verification
Describe different types of nonmotorize	ed rescue boats, including but not limited to:
• Rafts	
• IRBs	
Jon boats	
Describe the components of a boat.	

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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 bo	at.			
Demonstrate how to unwrap a pinned	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 P	PE.			
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)

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	Di	ate 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.				
Profe:	_ Deploy throw bassional Qualificat	-	1006 Standard for Technical Rescue Personne		
	_ Describe safety	considerations when	using each piece of equipment.		
	_ Describe mainte	nance and storage of	f each piece of equipment.		
Perf	orming Dyna	mic Water Resc	cue Skills		
	rm rescue skills, g ment. (OSFM)	iven a dynamic wate	r environment, PPE, a victim, and rescue		
	Di	ate Completed	Evaluator Verification		
	_ Demonstrate ho	w to swim in dynami	c water.		
	_ Describe the ted	chniques used for wat	ter rescue incidents.		
	Select the prope	er technique for each	rescue situation.		
	_ Describe and de	monstrate rescue sw	immer techniques:		
	Basic swim				
	Ferry angle				
	• Strainer				
	• Eddy hoppi	ng			
	 Surfing 				
	Describe and de	monstrate shallow w	rater crossings.		

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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.		

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River Flood Rescue Authorities

Candidate Verification

Candidate	
Candidate:	
Candidate's Printed Name	2
I, the undersigned, am the person applying for course complet penalty of perjury under the laws of the State of California, that position, and job performance requirements made herein are sunderstand that misstatements, omissions of material facts, or documents may be cause for rejection or revocation.	true in every respect. I
Candidate's Signature	Date

Review and Approval

Course Completion Certificate Issued

verify that the candidate has met all requirements for this course com	pletion certificate.
State Fire Training Registered Instructor Printed Name	SFT Number
State Fire Training Registered Instructor Signature	Date

FINAL

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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)
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Job Title:	(print
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River/Flood Rescue Technician Implementation of New Curriculum

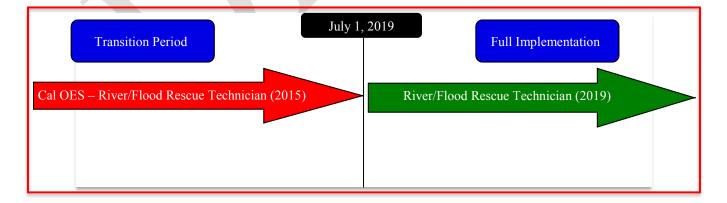
This document is intended to provide information for all State Fire Training (SFT) stakeholders on the new River/Flood Rescue Technician (2018) curriculum. The development of this curriculum was a collaborative effort with the Office of the State Fire Marshal, State Fire Training; the Office of Emergency 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



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INSTRUCTOR REQUIREMENTS Effective 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 <u>or</u> 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.

<u>NOTE</u>: 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.

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