

	Queen Anne's County Fire & EMS Commission Operations Manual	No. 04.06
		Effective Date: December 1, 2001
	Rehab Policy	Revised Date: June 2, 2016

I. SCOPE

- A. This policy applies to all Queen Anne's County Fire and EMS service personnel.
- B. This procedure shall apply to all emergency operations and training exercises where strenuous physical activity or exposures to heat or cold exist.

II. PURPOSE

- A. To ensure that the physical and mental condition of members operating at the scene of an emergency or a training exercise does not deteriorate to a point that affects the safety of each member or that jeopardizes the safety and integrity of the operation.

III. RESPONSIBILITY

- A. All personnel affiliated with a Queen Anne's County Fire and EMS Department will be responsible for ensuring strict adherence to this policy.

IV. POLICY

A. Responsibilities

1. Incident Commander

- a. The Incident Commander shall consider the circumstances of each incident and make adequate provisions early in the incident for the rest and rehabilitation for all members operating at the scene. These provisions shall include: medical evaluation, treatment and monitoring; food and fluid replenishment; mental rest; and relief from extreme climatic conditions and the other environmental parameters of the incident. The rehabilitation shall include the provision of Emergency Medical Services (EMS) at the Basic Life Support (BLS) level or higher.

2. Supervisors

- a. All supervisors shall maintain an awareness of the condition of each member operating within their span of control and ensure that adequate steps are taken to provide for each member's safety and health. The command structure shall be utilized to request relief and the reassignment of fatigued crews.

3. Personnel

- a. During periods of hot weather, members shall be encouraged to drink water and activity beverages throughout the work day. During any emergency incident or training evolution, all members shall advise their supervisor when they believe that their level of fatigue or exposure to heat or cold is approaching a level that could affect themselves, their crew, or the operation in which they are involved. Members shall also remain aware of the health and safety of other members of their crew.

B. Establishment of a Rehab Group

1. Responsibility

- a. The Incident Commander will establish a Rehab Group when conditions indicate that rest and rehabilitation is needed for personnel operating at an incident scene or training evolution. A member will be placed in charge of the Group and shall be known as the Rehabilitation Officer. The Rehabilitation Officer will typically report to the Logistics Section Chief in the framework of the incident management system.

2. Location

- a. The location for the Rehabilitation Area will normally be designated by the Incident Commander. If a location has not been designated, the Rehabilitation Officer shall select an appropriate location based on the site characteristics and designations below.

3. Site Characteristics

- a. It should be a location that will provide physical rest by allowing the body to recuperate from the demands and hazards of the emergency operation or training evolution.
- b. It should be far enough away from the scene that members may safely remove their turnout gear and SCBA and be afforded mental rest from the stress and pressure of the emergency operation or training evolution. (Outside and upwind of the operational hazard area or "Warm/Hot Zone.")

- c. It should provide suitable protection from the prevailing environmental conditions. During hot weather, it should be a cool shaded area. During cold weather, it should be a warm dry area.
- d. It should enable members to be free of exhaust fumes from apparatus, vehicles, or equipment (including those involved in the Rehab Operation).
- e. It should be large enough to accommodate multiple crews, based on the size of the incident.
- f. It should be easily accessible by EMS units.
- g. It should allow prompt reentry back into the emergency operation upon complete recuperation.
- h. It should not be immediately accessible to the media.

4. Site Designations

- a. A nearby garage, building lobby or other structure.
- b. Several floors below a fire in a high-rise building.
- c. A school bus, municipal bus or bookmobile.
- d. Fire apparatus, ambulance or other emergency vehicles at the scene or called to the scene.
- e. An open area in which a Rehabilitation Area can be created using tarps, fans, etc.

5. Resources

- a. The Rehabilitation Officer shall secure all necessary resources required to adequately staff and supply the Rehabilitation Area. The supplies should include the items listed below:
 - 1) Fluids - water, activity beverage, oral electrolyte solutions and ice.
 - 2) Food - soup, broth, or stew in hot/cold cups.
 - 3) Medical - blood pressure cuffs, stethoscopes, oxygen administration devices, cardiac monitors, intravenous solutions and thermometers.

- 4) Other - awnings, fans, tarps, smoke ejectors, heaters, dry clothing, extra equipment, floodlights, blankets and towels, traffic cones and fire line tape to identify the entrance and exit of the Rehabilitation Area.

C. Guidelines

1. Rehab Group Establishment

- a. Rehabilitation should be considered by staff officers during the initial planning stages of an emergency response. However, the climatic or environmental conditions of the emergency scene should not be the sole justification for establishing a Rehabilitation Area. Any activity/incident that is large in size, long in duration, and/or labor intensive will rapidly deplete the energy and strength of personnel and therefore merits consideration for rehabilitation. Climatic or environmental conditions that indicate the need to establish a Rehabilitation Area are heat stress index above 90F (see table 1-1) or wind chill below 10F (see table 1-2).

2. Hydration

- a. A critical factor in the prevention of heat injury is the maintenance of water and electrolytes. Water must be replaced during exercise periods and at emergency incidents. During heat stress, the member should consume at least one quart of water per hour. The rehydration solution should be a 50/50 mixture of water and a commercially prepared activity beverage and administered at about 40F. Rehydration is important even during cold weather operations where, despite the outside temperature, heat stress may occur during firefighting or other strenuous activity when protective equipment is worn. Alcohol and caffeine beverages should be avoided before and during heat stress because both interfere with the body's water conservation mechanisms. Carbonated beverages should also be avoided.

3. Nourishment

- a. The department shall provide food at the scene of an extended incident when units are engaged for three or more hours. A cup of soup, broth, or stew is highly recommended because it is digested much faster than sandwiches and fast food products. In addition, food such as apples, oranges, bananas provide supplemental forms of energy replacement. Fatty and/or salty foods should be avoided.

4. Rest

- a. The "two air bottle rule," or 45 minutes of work time, is recommended as an acceptable level prior to mandatory rehabilitation. Members shall rehydrate (at least eight ounces) while SCBA cylinders are being changed. Firefighters

having worked for two full 30-minute rated bottles, or 45 minutes, shall be immediately placed in the Rehabilitation Area for rest and evaluation. In all cases, the objective evaluation of a member's fatigue shall be the criteria for rehabilitation time. Rest shall not be less than ten minutes and may exceed an hour as determined by the Rehabilitation Officer. Fresh crews, or crews released from the Rehab Group, shall be available in the Staging Area to ensure that fatigued members are not required to return to duty before they are rested, evaluated, and released by the Rehabilitation Officer.

5. Recovery

- a. Members in the Rehabilitation Area should maintain a high level of hydration. Members should not be moved from a hot environment directly into an air conditioned area because the body's cooling system can shut down in response to the external cooling. An air conditioned environment is acceptable after a cool-down period at ambient temperature with sufficient air movement. Certain drugs impair the body's ability to sweat and extreme caution must be exercised if the member has taken antihistamines, such as Actifed or Benadryl, or has taken diuretics or stimulants.

6. Medical Evaluation

- a. Emergency Medical Services (EMS) - EMS should be provided and staffed by the most highly trained and qualified EMS personnel on the scene (at a minimum of BLS level). They shall evaluate vital signs, examine members, and make proper disposition (return to duty, continued rehabilitation, or medical treatment and transport to medical facility). Continued rehabilitation should consist of additional monitoring of vital signs, providing rest, and providing fluids for rehydration. Medical treatment for members, whose signs and/or symptoms indicate potential problems, should be provided in accordance with local medical control procedures. EMS personnel shall be assertive in an effort to find potential medical problems early.
- b. Heart Rate and Temperature - The heart rate should be measured for 30 seconds as early as possible in the rest period. If a member's heart rate exceeds 110 beats per minute, then a temperature should be taken. If the member's temperature exceeds 100.6F, he/she should not be permitted to wear protective equipment. If it is below 100.6F and the heart rate remains above 110 beats per minute, rehabilitation time should be increased. If the heart rate is less than 110 beats per minute, the chance of heat stress is negligible.
- c. Blood pressure – The blood pressure should be monitored as early as possible in the rest period. If a member's blood pressure is greater than 160 systolic or 100 diastolic, he/she should immediately be referred to the Medical Unit for further evaluation.

- d. Toxic Inhalation – Any patient exhibiting signs of toxic inhalation should be referred to the Medical Unit for further evaluation.
- e. Documentation - All medical evaluations shall be recorded on standard forms along with the member's name and complaints and must be signed, dated and timed by the Rehabilitation Officer or his/her designee.

7. Accountability

- a. Members assigned to Rehabilitation Group shall enter and exit the Rehabilitation Area as a crew. The crew designation, number of crewmembers, and the times of entry to and exit from the Rehabilitation Area shall be documented by the Rehabilitation Officer or his/her designee on the Company Check-In/Out Sheet. Crews shall not leave the Rehabilitation Area until authorized to do so by the Rehabilitation Officer.

Table 1-1

Heat Stress Index

Temperature F	Relative Humidity								
	10%	20%	30%	40%	50%	60%	70%	80%	90%
104	98	104	110	120	132				
102	97	101	108	117	125				
100	95	99	105	110	120	132			
98	93	97	101	106	110	125			
96	91	95	98	104	108	120	128		
94	89	93	95	100	105	111	122		
92	87	90	92	96	100	106	115	122	
90	85	88	90	92	96	100	106	114	122
88	82	86	87	89	93	95	100	106	115
86	80	84	85	87	90	92	96	100	109
84	78	81	83	85	86	89	91	95	99
82	77	79	80	81	84	86	89	91	95
80	75	77	78	79	81	83	85	86	89
78	72	75	77	78	79	80	81	83	85
76	70	72	75	76	77	77	77	78	79
74	68	70	73	74	75	75	75	76	77

Note: Add 10F when protective clothing is worn and add 10F when in direct sunlight.

Humiture F	Danger Category	Injury Threat
Below 60	None	Little or no danger under normal circumstances
80-90	Caution	Fatigue possible if exposure is prolonged and there is physical activity
90-105	Extreme Caution	Heat cramps and heat exhaustion possible if exposure is prolonged and there is physical activity
105-130	Danger	Heat cramps or exhaustion likely, heat stroke possible if exposure is prolonged and there is physical activity
Above 130	Extreme Danger	Heat stroke imminent

Table 1-2

Wind Chill Index

		Temperature F												
		45	40	35	30	25	20	15	10	5	0	-5	-10	-15
Wind Speed (MPH)	5	43	37	32	27	22	16	11	6	0	-5	-10	-15	-21
	10	34	28	22	16	10	3	-3	-9	-15	-22	-27	-34	-40
	15	29	23	16	9	2	-5	-11	-18	-25	-31	-38	-45	-51
	20	26	19	12	4	-3	-10	-17	-24	-31	-39	-46	-53	-60
	25	23	16	8	1	-7	-15	-22	-29	-36	-44	-51	-59	-66
	30	21	13	6	-2	-10	-18	-25	-33	-41	-49	-56	-64	-71
	35	20	12	4	-4	-12	-20	-27	-35	-43	-52	-58	-67	-75
	40	19	11	3	-5	-13	-21	-29	-37	-45	-53	-60	-69	-76
	45	18	10	2	-6	-14	-22	-30	-38	-46	-54	-62	-70	-78

A

B

C

Wind Chill Temperature F	Danger	
B	-25 F / -75 F	Increasing danger, flesh may freeze
C	Below -75 F	Great danger, flesh may freeze in 30 seconds

William H. Faust, Chairman
 Queen Anne's County Fire & EMS Commission