

North West Hennepin County Firefighter Physical Ability Test

This document is the approved Firefighter Physical Ability Test currently being utilized by the fire departments of Maple Grove and Osseo.

Originally created in 1994 with guidance from occupational medicine professionals, this test is designed to assess an individual's ability to adequately perform the entry level occupational physical demands and related job tasks for firefighters.

References

OSHA Standards 1910.134e and 1910.156b
NFPA Standards 1582 and 1583

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Firefighter Physical Ability Test

All firefighter candidates for employment in the fire departments of Maple Grove and Osseo must pass a physical ability test. This test is designed to assure that every candidate has the physical strength, stamina, and agility required to effectively and safely carrying out the duties of a firefighter.

The test consists of seven test stations. All candidates must pass each of the events to successfully complete the examination. **Candidates must successfully complete all events taking no more than a 10 second break between stations.** A candidate will be given a second try on the entire examination, should they fail an event on their first attempt. However, re-tries will be permitted only after all test events have been completed.

All events will be explained and demonstrated for all candidates by the testing staff prior to actual testing of any candidate. The events will be administered and scored in the manner outlined in this document. During the test, candidates may only rest within designated resting areas. The clock will continue to run while candidates are in the designated rest area.

Each fire department presenting a candidate for testing shall provide the candidate with the following:

- Turnout gear to include coat, helmet, and gloves. Tennis shoes shall be permitted. Helmets shall provide eye protection. All equipment shall meet minimum requirements for NFPA. Turnout gear includes SCBA.
- At least one SCBA (self contained breathing apparatus) per every three candidates tested. (Mask shall not be worn during test.)
- No ancillary equipment may be used during the test.

Pre-Test Physical Fitness Information

Prior to engaging in high exertion physical ability testing, firefighter candidates and current firefighters should be evaluated briefly for their fitness to participate.

Explain the details of the exercises they will be performing. Inquire as to whether any individuals may have formal or informal restrictions on activity, or if they are aware of any reason why they should not participate in a particular exercise. This shall be done on an individual basis rather than in a group setting for confidentiality reasons. The testing shall be described in detail to all candidates.

Testing will be discontinued should the candidate develop any of the following:

1. Signs of poor circulation such as pallor, cyanosis, or cold and clammy skin;
2. Chest pain, or other symptoms suggesting possible angina;
3. Wheezing or difficulty breathing;
4. Lightheadedness or dizziness;
5. Nausea;
6. Pain.

The Examiner has the ability, and responsibility, to stop the evaluation at any time they see or anticipate a safety issue. In that case, the results of the physical ability testing would be recorded as a "fail."

Note: Discretion is advised in terms of discussing specific health information with testing participants. Suggest referral to a personal physician if there are concerns rather than conducting a detailed discussion of specific health information at a test site. Do not gather more information than is necessary to make a decision regarding safe test participation at that time.

Prior to Physical Ability Practice or Exam Session

- Coordinator will give a detailed explanation of exam to all candidates.
- Candidates will sign the release form.
- Coordinator will do a walk-through of exam process with all candidates' including: each station in order of completion, instructions and expectations.
- Candidates will be given an opportunity to practice individual stations. (On physical ability practice session only)
- At the conclusion of the walk-through all candidates will return to meeting room.

Prior to taking the Complete Physical Ability Test

Individually and in private, coordinator will assess vital signs and inquire as to whether any individuals may have formal or informal restrictions on activity, or if they are aware of any reason why they should not participate in a particular exercise. If candidate answers yes they may not proceed, if the candidate answers no they may proceed.

Vital Sign Criteria

- Inclusion: Heart rate, 110 or below and blood pressure 160/100 or below. If heart rate is above 110 or/and blood pressure is above 160/100 candidate will be permitted a five minute time out and then vital signs will be rechecked.
- Exclusion: If the heart rate and/or blood pressure remain at these levels, cancel the evaluation and refer the individual to their personal physician or the fire department physician.

After Physical Ability Test

After completion of the exam candidate will be escorted or directed to the equipment staging area. Equipment will be removed and candidate will be given a bottle of water.

Candidate will be escorted or directed to return to the meeting room where the candidate will have their vital signs reassessed. No more than ten minutes should elapse between the completion of the exam and their vital signs being reassessed. Reassessment of vital signs will be completed regardless of the outcome of the exam, pass, fail, or injury.

Vital Sign Re-Assessment

Vital Signs, including blood pressure and heart rate will be recorded with the time. Vital signs will be taken in 10 minute intervals until the candidate is released by the coordinator. To be released and permitted to leave the candidate's heart rate must be 110 or below and their blood pressure must be below 160/100.

If at any time a candidate's heart rate exceeds their maximum calculated heart rate as $(220 - \text{age})$ and/or their systolic blood pressure is in excess of 250 mm Hg, and/or a diastolic pressure in excess of 120 mm Hg. Administer high-flow oxygen and contact EMS for evaluation. It is normal during exercise for the systolic and diastolic blood pressure to rise. These measurements would represent an exaggerated or abnormal hypertensive response to exercise.

EMS shall be contacted if after three 10 minute rest cycles and 4 sets of vital signs the candidate's vital signs have not dropped below a heart rate of 110 or below and their blood pressure must be below 160/100.

A drop in systolic blood pressure following physical exertion is abnormal; re-evaluate signs and symptoms and consider EMS for evaluation.

To the extent reasonably possibly, all vital sign measurements shall be treated confidentially. Only personnel who "need to know" should be involved in taking and recording these measurements. The written record should be handled as confidential information by the fire department and municipality.

EVENT: Ladder Raise

**EQUIPMENT REQUIRED: Full Turnout Gear,
3-Section, 28-35 Foot Extension**

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility and ability to safely manipulate ground ladders. This event, part of the timed sequence of several firefighting activities, is a pass/fail event designed to test the candidate's ability to safely raise an extension ground ladder.

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct ladder placement prior to the exam and shall monitor safety conditions during the examination. The following functions shall be performed before, during, and after the exam:

- * Inspect ladder for any signs of physical damage including rope halyard, beams of ladder, rungs, and dogs. (The term *dogs* refers to the device attached to the ladder that locks the ladder in an extended position, the term *locking mechanism* refers to the device that attaches the ladder to the side of the building during the test.)
- * Some North West Hennepin County Fire Departments may permanently install a ladder at a testing site. Other Departments may utilize an in-service ladder for testing purposes.
- * Inspect locking mechanism that secures ladder to side of structure.
- * Using proper procedure, raise ladder to side of structure and secure with locking mechanism to the side of the structure that will be used for the examination. Raise and lower the ladder several times until assured that the ladder, dogs, and locking mechanism are ready for safe operation by firefighter candidates.
- * The decision as to the candidate's ability to safely continue the event shall rest solely with the event scorer, not the candidate. If for any reason, the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test and return the ladder safely to the lowered position.

EVENT: Ladder Raise

**EQUIPMENT REQUIRED: Full Turnout Gear,
3-Section, 28-35 Foot Extension**

(continued)

- * Candidates shall be shown proper ladder extending technique. The procedure used shall be from the most recent edition of Essentials of Firefighting, a publication of the International Fire Service Training Association. Candidates should be informed that if they are unable to continue with the event, they should immediately inform the scorer and someone will assist them.

Candidate shall raise a three-section extension ladder, which will be fixed to the side of a structure using a mechanical locking mechanism to ensure safety, to its maximum height. The mechanism will hold the ladder securely to the side of the structure so that it will not topple over. The ladder will be maintained in a vertical position. The candidate will be required to extend the ladder by pulling the rope halyard in a hand over hand fashion. The ladder shall not slip more than two feet, nor shall be allowed to fall all the way back to the retracted position. To pass this event, the ladder shall be fully extended and retracted. This shall be shown to the candidate prior to the test, so that there is no confusion. The event will be failed if the ladder slips all the way back to the retracted position. The candidate may rest the ladder on the dogs while re-positioning hands on the halyard during the test. The candidate may not wrap the rope halyard around his/her hand due to the potential for injury.

At least one (1) examiner shall be present and shall be solely responsible for determining if a ladder has slipped more than two feet as described above.

The maximum pull weight for raising the ladder shall be 110 pounds. The pull weight shall be measured as the rope is pulled to extend the ladder using equipment provided by North Memorial Medical Center's North Works Program.

EVENT: Fire Hydrant

EQUIPMENT REQUIRED:

**Full Turnout Gear
Fire Hydrant
Torque Wrench for Steamer
40" x 40" Marked Area
Hydrant Wrench**

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility and ability to safely operate fire hydrants. This event, part of a timed sequence of several firefighting activities, is a pass/fail event designed to test the candidate's ability to safely remove a steamer connection cap and operate the hydrant control valve.

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct examinations of all equipment utilized in this event prior to the exam, and shall monitor safety conditions during the examination. The following functions shall be performed before, during, and after the examination:

- * Inspect the hydrant wrench and hydrant and its components for damage.
- * Designate 40" x 40" area adjacent to hydrant and ensure that this area is stable and will support firefighter candidate during examination.
- * Turn "off" water main valve that supplied fire hydrant that will be utilized in examination, if an "in-service" hydrant is being utilized for the examination. Then operate hydrant valve using hydrant wrench that will be utilized in the examination to ensure proper operation; as well as open steamer connection.
- * The decision as to the candidate's ability to safely continue the event shall rest solely with the event scorer, not the candidate. If for any reason, the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test.
- * Candidates shall be shown proper technique for opening the steamer connection and opening the hydrant valve. .
- * A fire hydrant testing prop may be utilized by some Northwest area fire departments. If such a prop is utilized, it shall be a standard fire hydrant mounted on a sturdy base. The hydrant valve will have an adjustable means of simulating turning force required to open the valve.

EVENT: Fire Hydrant

EQUIPMENT REQUIRED: **Full Turnout Gear**
 Fire Hydrant
 Torque Wrench for Steamer
 40" x 40" Marked Area
 Hydrant Wrench

(continued)

Candidate shall stand on the 40" x 40" designed area and shall remove the hydrant steamer connection using the hydrant wrench. The steamer connection shall have a torque of 70 foot pounds, as measured by a torque wrench prior to the start of each examination. The candidate shall then open the hydrant valve using the hydrant wrench turning until the valve is fully open. (The hydrant valve may have a torque range of 10 to 15 foot-pounds.) During this examination, the candidate shall maintain footing within the designated 40" x 40" area.

To pass this event, the candidate shall remove the steamer connection and turn the hydrant wrench eighteen (18) turns, or until the hydrant is open while standing within the designated area. The event will be failed if the candidate steps out of the designated area, or fails to remove the steamer connection or turn the hydrant the required number of turns, or open the valve (on an "in-service" hydrant).

EVENT: Hose Drag/Carry

EQUIPMENT REQUIRED:

**Full Turnout Gear
100' of 1 1/2-inch or 1 3/4-inch
hose in bundle, with nozzle and gated
wye, 150' of 2 1/2-inch or 3-inch
hose.**

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility, and ability to safely advance fire hose streams. This event, a part of the timed sequence of several firefighting activities, is a pass/fail event designed to test the candidates ability to safely advance an uncharged fire hose stream.

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct examinations of all equipment utilized in this event prior to the examination, and shall monitor safety conditions during the examination. The following functions shall be performed before, during and after each examination:

- * Inspect fire hose, nozzle and gated wye for damage. Assemble bundle of 100' of 1 1/2-inch or 1 3/4-inch hose. Assemble supply line of 150' of 2 1/2-inch or 3-inch hose. (Size of hose for bundle and supply line will be determined by the size of hose utilized by the department that the candidate is testing for.) Attach gated wye between supply line and bundle. Attach nozzle to bundle.
- * Inspect area where hose is to be dragged for any uneven pavement that may interfere with candidates footing, or may cause damage to equipment.
- * The decision as to the candidate's ability to safely continue the event shall rest solely with the event scorer, not the candidate. If for any reason, the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test.
- * Candidates shall be shown proper technique for carrying the nose bundle and advancing the hose line.

Candidate shall have bundle of 100' of hose with nozzle and gated wye attached placed onto his/her shoulder. The candidate shall choose which shoulder to carry the bundle. The bundle shall be attached via the gated wye to 150' of supply line. The candidate shall carry the bundle and drag the supply line for a distance of 100 feet. The candidate shall drop the bundle at the completion of the event.

EVENT: Hose Drag/Carry

EQUIPMENT REQUIRED:

Full Turnout Gear

100' of 1 1/2-inch or 1 3/4-inch

hose in bundle, with nozzle and gated

wye, 150' of 2 1/2-inch or 3-inch hose.

(continued)

To pass the event, the candidate shall carry the bundle (including the nozzle and gated wye) and drag the supply line for the required distance. The event will be failed if the candidate drops the bundle, and/or is unable to drag the supply line for the required 100 feet. A *Milwaukee Strap* may be utilized to bundle the hose, nozzle and gated wye.

EVENT: Axe Chop

EQUIPMENT REQUIRED: **Full Turnout Gear**
8 lb Flat Head Fire Axe or Sledge
Hammer, Wooden Timber, Means
to Secure Wooden Timber

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility and ability to utilize hand tools. This event, part of a timed sequence of several firefighting activities, is a pass/fail event designed to test the candidates ability to safely utilize a fire axe or sledge hammer. (The axe and sledgehammer shall be referred to as "tool", hereafter.)

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct examinations of all equipment utilized in this event prior to the examination, and shall monitor safety conditions during the examination. The following functions shall be performed before, during and after the examination:

- * Inspect the tool that will be utilized in the examination for damage.
- * Examine the wooden timber and means of securing timber so that it will not move while be struck with the tool during the examination.
- * Ensure that all personnel involved with this event is wearing proper safety equipment, which shall include as a minimum, helmet and eye protection. Allow no one within 30-feet of the area that is not wearing head and eye protection.
- * The decision as to the candidate's ability to safely continue the event shall rest solely with the event scorer, not the candidate. If for any reason, the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test.
- * Candidates shall be shown proper technique for striking the timber with the tool.

Candidate shall stand adjacent to the 3-foot wooden timber that is secured to prevent movement of the timber as it is struck with the tool. The striking surface shall be no higher than 24-inches and no less than 12-inches above the ground. The candidate shall strike the timber with the tool fifty (50) times. One scorer will maintain Count. In order to receive one count, the head of tool must be raised above the candidate's shoulder, at least one of the candidates hands must be above the shoulder level, and the handle of the tool must have been in a vertical position when the head of the tool was above the shoulder.

EVENT: Axe Chop

EQUIPMENT REQUIRED:

**Full Turnout Gear
8 lb. Flat Head Fire Axe or Sledge
Hammer, Wooden Timber, Means
to Secure Wooden Timber**

(continued)

There will be not measurement of force applied to the timber. To pass this event, the candidate shall strike the timber fifty times while meeting the criteria listed above. This event will be failed if the candidate does not strike the timber fifty times in the above noted criteria, or if the tool is dropped or is released from the candidates hands while striking the timber or in swinging the tool.

EVENT: Ladder Carry

EQUIPMENT REQUIRED: **Full Turnout Gear**
14' to 16' Aluminum Roof Ladder
Mounting Rack

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility and ability to safely carry ground ladders. This event, part of a timed sequence of several firefighting activities, is a pass/fail event designed to test the candidates ability to safely lift an aluminum roof ladder from ground level, carry it for a measured distance, and return it to a mounting bracket.

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct examinations of all equipment utilized in this event prior to the examination, and shall monitor safety conditions during the examination. The following functions shall be performed before, during, and after the examination:

- * Inspect the aluminum roof ladder for damage.
- * Set up ladder mounting device and ensure stability. Operate locking mechanism, if present.
- * Inspect area where event is to be conducted for any uneven pavement that may interfere with candidates footing.
- * The decision as to the candidate's ability to safely continue an event shall rest solely with the scorer, not the candidate. If for any reason, the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test.
- * Candidates shall be shown proper technique for lifting roof ladder from the ground, carrying ladder, and placing ladder on the mounting bracket.

Candidate shall lift a 14-foot to 16-foot aluminum roof ladder that shall be lying at ground level, and carry it for a distance of 20-feet, then place the roof ladder on a mounting bracket that is positioned so that the top rail of the ladder will be at a height of no less than 75-inches from ground level. The height of the mounting bracket will simulate the position of a ladder mounted on the side of a fire truck. An actual fire truck may be utilized for the mounting bracket for this portion of the test. The weight of the ladder shall not exceed 35 pounds.

EVENT: Ladder Carry

EQUIPMENT REQUIRED:

**Full Turnout Gear
14' to 16' Aluminum Roof Ladder
Mounting Rack**

(continued)

To pass this test, the candidate shall complete the event without allowing the ladder to touch the ground at any time during the test. The test will be failed if any part of the ladder makes contact with the ground, or if the candidate is unable to return the ladder to the mounting bracket, or if the candidate drops the ladder.

EVENT: Smoke Crawl

EQUIPMENT REQUIRED: **Full Turnout Gear**
Table(s) With a Clearance
Underneath of 26-Inches and at Least

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility and ability to safely operate in confined areas, and low to the ground in environments of high heat and smoke. This event, part of a timed sequence of several firefighting activities, is a pass/fail event designed to test the candidate's ability to safely function in confined areas.

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct examinations of all equipment utilized in this event prior to the examination, and shall monitor safety conditions during the examination. The following functions shall be performed before, during, and after completion of the examination:

- * Inspect the table and ensure that the legs are securely attached and locked to prevent collapse during the examination.
- * Inspect area where candidates will be crawling to ensure that there are no obstructions or uneven or sharp areas that could cause injury.
- * The decision as to the candidate's ability to safely continue the event shall rest solely with the scorer, not the candidate. If for any reason, the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test.
- * Candidates shall be shown the proper technique for crawling under the tables.

The total distance for the crawl test shall be 40-feet. The candidate shall crawl on hands and knees for a distance of 10-feet, duck under one table that has a clearance of 26-inches measured from the ground to the underside of the table. The candidate shall then crawl for a distance of 10-feet, turn around, and crawl back 10-feet, duck under the table, then crawl to the starting location. An alternative acceptable method for conducting the test shall be to establish a continuous forty-foot crawl distance and place a table at ten feet from the start, and another thirty feet from the start. In the alternative testing scenario, the firefighter crawls continuously for the forty feet and ducks under two tables along the way, rather than crawl-duck under the table- then turn around and crawl back to the start. Each test scenario is acceptable and the agency conducting the test shall determine the method to be used.

EVENT: Smoke Crawl

EQUIPMENT REQUIRED: **Full Turnout Gear**
 Table(s) with a Clearance
 Underneath of 26-Inches and at Least

(continued)

To pass this event, the candidate must complete the task without moving the tables. The candidate may brush against the table, but the table may not move from its original position. The event will be failed if the candidate does not complete the task, or if the candidate cannot pass under the table without moving it from its original position.

Cardboard sheets may be utilized on uneven or rough floors to provide a smooth crawling surface.

EVENT: Dummy Drag

**EQUIPMENT REQUIRED: Full Turnout Gear
Weighted Training Mannequin**

The duties of a firefighter in emergency situations require a degree of strength, stamina, agility and ability to safely perform rescue of civilian casualties as well as fellow firefighters. This event, part of a timed sequence of several firefighting activities, is a pass/fail event designed to test the candidate's ability to safely remove a fire casualty from a hazardous area.

Safety is of primary concern during this and all firefighter ability testing events. Therefore, properly trained and qualified firefighters shall conduct examinations of all equipment utilized in this event prior to the examination, and shall monitor safety conditions during the examination. The following functions shall be performed before, during, and after the examination:

- * Inspect weighted training mannequin to ensure that its protective clothing is securely attached.
- * Inspect the area where mannequin is to be dragged for any uneven pavement that may interfere with the candidates footing, or may cause damage to the mannequin.
- * The decision as to the candidate's ability to safely continue the event shall rest solely with the event scorer, not the candidate. If for any reason the scorer feels the safety may be compromised, the candidate shall immediately discontinue the test.
- * Candidates shall be shown proper technique for dragging the weighted training mannequin. Candidates shall not lift and carry the mannequin. This shall be accomplished using a partial lift and drag method. Dragging may be accomplished by walking backward and dragging the mannequin. Use of the drag rescue device (simulated DRD) attached to the mannequin is acceptable.

Candidate shall move a training mannequin that weighs no more than 130 pounds, a distance of 100-feet. The event will be passed if the candidate successfully moves the mannequin the required distance. This shall be accomplished using a partial lift and drag method. Dragging may be accomplished by walking backward and dragging the mannequin. The event will be failed if the candidate does not complete the event, or if the candidate completely lifts and carries the mannequin.

North West Hennepin County

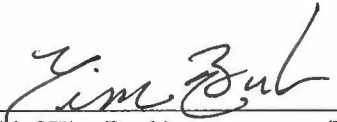
Firefighter

Physical Ability Test

The document entitled "North West Hennepin County Firefighter Physical Ability Test" shall be the approved screening test for new firefighter candidates for the Maple Grove and Osseo Fire Departments. The approved test was originally approved on 2/1/94. It was reviewed in September, 2018 and revised on 3/11/2019. The test consists of a ladder raise, a fire hydrant, and hose carry/drag, an axe chop, a ladder carry, a smoke crawl, and a dummy drag.


The signatures below attest to the approval of the Fire Chiefs of the North West Hennepin County cities utilizing this test.

Maple Grove Fire Department:

 3-22-19

(Chief Tim Bush) (Date)

Osseo Fire Department:

 3/22/19

(Chief Mike Phenow) (Date)