
S.O.P. #: 400-06
SUBJECT: HYDRANT MAINTENANCE
DIVISION: EMERGENCY OPERATIONS

Objective: To familiarize personnel with repair requests and station maintenance responsibilities for fire hydrants, both public and private, including wall hydrants along state highways. Personnel will also familiarize themselves with snow removal policies. It is imperative that all hydrants be kept in operating condition and in a manner whereby the hydrant will be accessible and operational for use. The importance of proper inspection and maintenance cannot be overemphasized.

Section 1: Fire Hydrant Repair Request (PUBLIC)

A. Fire hydrant repairs are performed by the Baltimore City Water Department.

1. Requests for fire hydrant repairs shall be processed as follows:

- a. If upon inspection by suppression personnel, it becomes necessary to place a hydrant out-of-service for repair, it shall be recorded in the Firehouse Software (NFIRS) Hydrant Module as soon as possible.

NOTE: HYDRANTS SHOULD ONLY BE PLACED OUT OF SERVICE IF THEY ARE NOT OPERATIONAL OR ARE UNSAFE. IF WATER CAN BE SAFELY OBTAINED FROM THE 4 ½ INCH STEAMER FITTING, THEY SHALL BE KEPT IN SERVICE.

- b. A hydrant ring labeled “BCoFD” shall be placed on the 4.5" steamer of any hydrant that is placed out-of-service.
- c. A “Hydrants Pending Verification” distribution list is sent out to each station via email every Monday. Company commanders shall ensure any hydrants on this list (career and volunteer) that are maintained by their station are inspected that day and the Firehouse Software (NFIRS) Hydrant Module is updated with the current state of the hydrant.

Section 2: Annual Fire Hydrant Inspection and Maintenance

A. Annual hydrant maintenance will be assigned by the last day of February to each shift by the Company Commander on “C” shift. The lists of hydrants shall be organized in a manner that creates an orderly and efficient breakdown between all shifts. Any conflict or concern regarding the designation of hydrants shall be directed to the Company Commander of “C” shift for resolution. Any changes to hydrant assignments will be emailed to the GIS analyst responsible for the hydrant database.

All career fire stations will perform regular maintenance on all fire hydrants in Baltimore County, including state highway wall hydrants and private hydrants for which there is a signed maintenance agreement (Form 191) on file at the Central Fire Marshal's Office. The Company Commander will be responsible to see that fire hydrants in their first-due area and in any Volunteer area where they are the first-due career company, are inspected, maintained and painted.

While operating near hydrants members may be in close proximity to the roadway, and the hazards associated with roadway operations. This poses a significant safety hazard. Members shall utilize roadway safety techniques including, but not limited to, safety vests, spotters and lane blocking if needed.

1. Hydrant Maintenance and inspections are to be completed annually.
 - a. To ensure proper repairs are performed prior to the winter months, annual hydrant maintenance should be completed by October 1st. Data should be entered into Firehouse Software (NFIRS) Hydrant Module within seven (7) days of completed hydrant maintenance.
 - b. Any hydrant missing in Firehouse Software (NFIRS) Hydrant Module shall be reported to the GIS Analyst via email. Correlation of hydrants to the map book(s) should be completed, on a regular basis, with attention given to new hydrants that are placed in service. It is critical that the listed hydrants in Firehouse Software (NFIRS) Hydrant Module match the location of hydrants.
 - c. Company commanders will ensure that hydrants remain clearly visible and not obstructed by the growth of grass, weeds, or other obstructions, i.e. (decorations, fencing, and debris). A minimum clearance of 36" should be provided
 - d. It is the responsibility of all suppression personnel to learn the location of hydrants within their districts.

Section 3. Hydrant Inspection and Service Procedure- Consistent with American Water Works Association (AWWA) Guidelines

All hydrants shall be painted as needed. All public fire hydrants are to be painted with the standard acrylic "orange" color issued by the Logistics Division.

Note: Any hydrant that is in need of paint shall be painted. When painting the hydrant, do not paint the chains. Over time, painted chains may become stiff and will make cap removal difficult.

1. Check the hydrant's appearance. Remove obstructions around it. Paint the hydrant as needed. Check to see if the hydrant needs to be raised or lowered because of a change in the ground-surface

- grade. If adjustments are needed, record the repair request in Firehouse Software (NFIRS) Hydrant Module.
2. On traffic-model hydrants, check the breakaway device for damage.
 3. Remove one outlet-nozzle cap and listen to check for main valve leakage.
 4. Check for the presence of water or ice in the hydrant barrel.
 5. Open the hydrant to allow for a minimum flow of water to run out of 4.5" discharge and immediately close down. This is to guarantee that there are no obstructions in the hydrant as well as checking for proper drainage. Under no circumstances will major flushing or flowing of hydrants be appropriate. Be mindful of pedestrian traffic or any other disturbance that may be created while water is flowing.
 6. Close the hydrant. Check the operation of the drain valve by placing the palm of one hand over the 2 ½" outlet nozzle. Drainage should be sufficiently rapid to create noticeable suction.
 7. Listen again for main valve leakage.
 8. Close the hydrant completely. Back off the operating nut (about 1/8 turn of the hydrant wrench) enough to take pressure off of the thrust bearing or packing.
 9. Remove all outlet-nozzle caps, clean the threads, check the condition of the gaskets, and lubricate the threads. (Graphite powder in oil works well, as do several of the never-seize compounds.) Check the ease of operation of each cap.
 10. Check outlet-nozzle-cap chains or cables for free action on each cap. If the chains or cables bind, open the loop around the cap until they move freely. This will keep the chains or cables from kinking when the cap is removed during an emergency.
 11. Replace the caps. Tighten them, and then back off slightly so they will not be excessively tight. Leave them tight enough to prevent their removal by hand.
 12. If the hydrant is inoperable, place a white ring on it and record it in Firehouse Software (NFIRS) Hydrant Module for repair. This may save valuable time during an emergency incident.

Section 4: Private Hydrants

- A. All private hydrants shall have a signed Private Fire Hydrant Maintenance Agreement Form 191 completed. As ownership of properties change a new Hydrant Maintenance Agreement shall be completed as soon as practical. Note: The District Fire Marshal is responsible for completing the Form 191 for CCBC, BCPS, Baltimore City, State of Maryland, and Federal occupancies/properties during the Use & Occupancy Inspection and for all occupancies/properties they annually inspect.

B. The Fire Marshal's Office will send all agreements where the occupant (CCBC, BCPS, Baltimore City, State of Maryland and Federal occupancies and for all occupancies/properties they annually inspect) requests the Fire Department to provide the annual service, to the responsible career station electronically. All agreements completed by field operations, initialed and updated, will be sent to and filed by the Fire Marshal's Office. The Company Commander should contact their District Fire Marshal for assistance in completing the Form 191.

1. Private Hydrant Maintenance: The Baltimore County Fire Prevention Code, requires fire hydrants on private property to be inspected and maintained annually.
 - a. Maintenance shall be performed on private hydrants following the same procedure as stated in Section 2, Annual Fire Hydrant Inspection and Maintenance.
 - b. If a private hydrant is in need of repair, it shall be recorded in Firehouse Software (NFIRS) Hydrant Module. A form 145 will be issued to the property owner and handled per current guidelines.
 - c. All private fire hydrants shall be clear from obstruction, such as fencing, ornaments, and shrubs. A minimum clearance of 36" should be provided. In accordance with the Baltimore County Fire Prevention Code, all private fire hydrants shall be painted OSHA Red to show the distinction from public hydrants. This is in accordance with the Baltimore County Fire Prevention Code.
2. If the Property Owner/Business Owner chooses not to have a Private Hydrant Maintenance Agreement, a Form 191 shall be completed. The Property Owner will perform all maintenance and shall paint their private hydrant OSHA Red and follow all the Procedures on the Form 191.
 - a. If the Property/Business Owner(s) refuses to sign the Private Hydrant Maintenance Agreement, it shall be documented on the Form 191 and recorded as no agreement on file.

NOTE: The Property/Business Owner is responsible for calling ADO when the hydrant has been repaired and ADO shall notify the responsible career station to verify that repairs have been made. Company commanders are to list the hydrant as "In Service" in Firehouse Software (NFIRS) Hydrant Module after it has been verified.

- a. The Property/Business Owner needs to place a ring or tag to let the Engine Company know if the hydrant is out of service. When the ADO is notified by Property/Business Owner, ADO shall direct the responsible career station to apply an O/S ring.
- b. The Property/Business Owner must send the annual service paperwork to the Fire Marshal's Office. The Fire Marshal's Office will scan the paperwork into the

system then email a copy to the responsible career station officer for entry into NFIRS.

- c. During the annual “mercantile” inspection, the responsible career station shall verify compliance with AWWA with regard to proper hydrant maintenance procedures. Secure documentation if available and enter into Firehouse Software (NFIRS) Hydrant Module as soon as practical. If documentation is not provided, station personnel shall issue a Fire Inspection Report (Form 145FP) citing the failure to comply with NFPA 25 provisions requiring a maintenance record.
3. Private Hydrant Repair: The following procedures will be followed when a private hydrant is in need of repair.
- a. The Company Commander will have a Form 145FP issued to the property/business owner, requiring the hydrant to be repaired.
 - b. The hydrant shall be marked as “out of service” in Firehouse Software (NFIRS) Hydrant Module by the responsible career station. The Property/Business Owner is responsible for calling the ADO when the hydrant is back in service. The ADO shall notify the responsible career station to verify that repairs have been made. Company Commanders are to list the hydrant as “in service” in NFIRS after it has been verified.
 - c. When the repair verification is finished, the completed Form 145FP shall be forwarded via email to the Central Fire Marshal's Office and saved electronically according to the current procedure.

Section 5: Fire Pumps

All privately owned fire hydrants which are located on the discharge side of a stationary fire pump and for which the Fire Department has a signed maintenance agreement, shall be painted red with white bonnets, i.e., White Marsh Mall. These colors are in accordance with the Baltimore County Fire Prevention Code.

- A. When pumping from either a salt or industrial hydrant, the pump on the engine will be back-flushed immediately upon return to the station.

Section 6: State Highway Wall Hydrants - Maintenance Procedures

- A. Weeds, grass, etc., will be groomed to prevent obstacles of the State Highway wall hydrants on the non-highway side.
- B. Weeds, grass, etc., will be cut back for a distance of five feet (5') in a manner that shall allow the wall hydrant to be clearly visible on the non-highway sides.

- C. There will be no permanent obstructions located within a reasonable radius and a clear unobstructed pathway of fittings on both sides.
- D. Check the non-highway sides for fitting operations and that there are no obstructions on the inside of the fittings.
- E. Ensure apparatus keys operate door locks
- F. WD40 shall be used to lubricate door locks, hinges and cylinders.
- G. Missing caps will be replaced on the hydrant by the Fire Department once the replacement is received from the State Highway Administration.
- H. Any needed repairs to the State Highway Wall Hydrants will be performed by the State Highway Administration (SHA).
 - 1. ADO shall notify SHA for needed wall hydrant repairs.
 - 2. A Fire Inspection Form (Form 145FP) shall be completed by the career station and emailed to the ADO, then forwarded to the SHA by the ADO.
 - 3. Spare caps and/or missing equipment, including signs, will be provided by the SHA.

Section 7: New Hydrant Installations

- A. The shift working when notified of a new hydrant in their district shall be responsible for:
 - 1. Checking the new hydrant for proper installation.
 - 2. Performing hydrant inspection and maintenance procedures as per Section 2 of this S.O.P; Annual Fire Hydrant Inspection and Maintenance
 - 3. Checking to ensure the proper hydrant threads have been installed on the 2-1/2" and 4-1/2" outlets.
 - a. There have been instances where the wrong threads have been installed in new developments.
 - b. Appliances carried on the apparatus should be connected to the outlets to check the threads.
 - 4. New hydrant installations should be properly marked in all map books, and shall be reported to the GIS analyst via email.
 - 5. A hydrant repair request shall be generated in Firehouse Software (NFIRS) Hydrant Module for any problems with new installations.

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Section 8: Snow Removal Policies

- A. All snow removal policies will be at the discretion of the Company Commander, with the following as guidelines:
1. Special attention shall be given to the high hazard/target areas.
 2. Residential hydrant areas shall be considered on an as-needed basis.

NOTE: All hydrants, when cleared of snow, shall be cleared in a manner so the 4-1/2" outlet is completely visible and also allows for the proper application of the appropriate hydrant devices. A minimum of 36" clearance should be provided.