

Operating Guideline # 601

Water Supply Urban Operations

October 9, 2019



PURPOSE:

The purpose of this Operating Guideline (OG) is to establish guidelines to maximize fire flows at urban fire incidents.

GUIDELINE:

General

1. The officer in charge of the first responding pumper to a structure fire shall make an assessment of the need to establish a water supply based on information that is available from dispatch (i.e. – working structure fire reported, persons confirmed trapped, type of structure involved), situational issues (i.e. – time of day, anticipated response of additional personnel and units) as well as observations made while en route (i.e. - smoke column visible). The decision to initiate a fast attack with the on-board water supply vs the need to establish a sustained water supply by “catching” a hydrant can only be made based on a thorough assessment of situational elements as they are known at the time.

Supply Lines

2. Where the decision has been made to establish and secure a water supply, the first-in pumper should lay a single 100mm (4 inch) supply line from a hydrant to the incident site if the hydrant is within 275 metres (900 feet) of the incident.

3. If the supply line from the hydrant to the first-in pumper is less than 150 meters (500 feet), the hydrant should be connected and used to supply water directly to the pumper.

4. Where the initial supply line lay is greater than 150 meters (500 feet), the second-in pumper will stage at that hydrant and “supply” (if necessary) by pumping to the first unit, connecting to the hydrant using a 100mm supply line.

Note: Should the hydrant not be equipped with a 100mm port, connections will be made using a 65mm to 100mm adapter on one of the hydrant’s 65mm ports.

5. If the first-in pumper has not “caught” a hydrant and it is determined that a water supply is required, the second-in unit will lay a supply line to the first. If the hose lay required is in excess of 150 meters (500 feet), the second-in pumper should be prepared to “supply” pump as per sentence 4.

Relay Operations

6. When an incident is more than 275 metres (900 feet) away from the closest hydrant but less than 548 metres (1800 feet), the first-in pump will lay a 100mm supply line from the hydrant towards the fire. The second-in pump will lay additional supply line as needed to make up the distance. The second-in pump should be prepared to take a position in the first half of the hose lay to “relay pump” to the first-in pump through the supply line.

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Hydrant Connections

7. Before hooking up the supply hose line, the hydrant shall be flushed in order to clear the lateral pipe.

8. Any unit supplying water from a hydrant equipped with a “steamer port” (100mm port) will utilise 100mm supply hose. Where available, a 65mm gated connection should be applied to one of the 65mm hydrant ports.

9. If the hydrant is not equipped with a “steamer port”, the 100mm supply line shall be connected to the hydrant using a 65mm to 100mm adapter on one of the hydrant’s 65mm ports.

10. When opening the hydrant to charge the supply line(s), check the bonnet for the “open” direction arrow and open the hydrant completely (typically 16-20 turns of the main hydrant nut), however note that supply lines are not to be charged until directed to do so by the pump operator or Incident Commander.

Reporting Hydrant Usage

11. Many of the public hydrants in use in the Town of Gravenhurst have had their drain holes plugged due to concerns about high water tables in some areas. This means that many hydrants will not “self-drain” after use, and therefore following the use of a public fire hydrant, the Incident Commander shall contact dispatch and request that the District of Muskoka Water and Sewer staff be advised so that the hydrant(s) can be pumped out if deemed it necessary. This procedure is extremely important during freezing temperatures. (NOTE: Where a private hydrant is used, the owner of the hydrant must be advised).

High Volume Hose

12. When 100mm (4 inch) hose is utilised to provide water supply for emergency operations and training, great care must be taken to ensure the safety of firefighters and the public who may come in contact with it. Consider the following:

- a) When laying 100mm hose from the apparatus, the EVO should attempt to lay the hose to the side of the road in an attempt to keep it out of the way of potential traffic.
- b) Should the line need to be repositioned after being laid, it shall be done prior to the line being charged with water. If necessary a firefighter may be used to move the line over to the side of the road as much as possible.
- c) Once the apparatus has been positioned, the supply line shall be “dressed” to remove any kinks or twists in the line prior to it being charged with water.
- d) Should a kink or twist develop after the line is charged, the line must be shut down and drained prior to any firefighter attempting to correct the situation. A firefighter attempting to correct a kink or twist on a charged supply line is at risk of a back injury or a serious pinch injury.
- e) Consider line “stretch” as the hose is charged with water.

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f) No vehicles of any kind should be permitted to drive over charged supply hose lines. Where this occurs, the hose shall be tagged and taken out of service until tested.

g) As the hose is being laid from the apparatus bed, there is a chance that the line can become hung up. Usually hang ups occur at the start of the lay or when turning sharp corners. Firefighters should assist the lay at corners to prevent the line from hanging up as it comes off the bed.

h) The maximum operating pressure of 100mm hose is 1295 kPa (185 psi); 100mm hose is a supply line only and should not be exposed to higher pressures during normal operations. Pump operators must consider this when performing relay operations or pumping down inclines.

i) Air in the “just-charged” hose must be bled off using the bleed valve on the piston-intake relief valve prior to the valve being opened.

13. Keep hands clear of any hose folds or kinks before, during and after charging the hose to avoid “pinching” type injuries.

14. Always wear fire department issued or approved gloves when handling hose lines.

15. Once charged, hose lines of all sizes can be dangerous and difficult to handle. Ensure sufficient staffing is available to move/advance or otherwise maneuver hose lines. Use proper lifting techniques (lift with the legs keeping your back straight) to avoid injuries.

16. Tighten any leaking couplings – this is especially important in winter to avoid water pooling and ice build-up to prevent slips, trips and falls.

17. Never attempt to disconnect hose when the hose line is “charged” with water under pressure.

18. Use caution when stepping over hose lines to avoid tripping; avoid walking on charged hose lines.

RESPONSIBILITY:

It is the responsibility of all Emergency Operations Division staff to comply with the provisions of this Operating Guideline.

DEFINITIONS:

“**Charging**” means to pressurize with water.