

PUBLIC PROTECTION SURVEY INFORMATION FOR AREAS WITHOUT WATER MAINS

The following criteria concerning water delivery by fire department apparatus shall apply:

1. When a tender relay system is used, the volume of the tender capacity is reduced by 10% for spillage, under filling and incomplete unloading.
2. Travel time of each apparatus is calculated using the formula:
$$T = 0.65 + 1.7D$$

T = Minutes.
D = Miles.

Slower speeds will be used for under-powered apparatus, or apparatus laying hose lines.
3. The delivery rate of a tender relay system will be affected by the rate of filling and dumping of the tenders, and the useable volume of the fire-site folding tanks or other fire-site storage.
4. Credit may be given for apparatus responding from outside the community depending upon communication facilities, handling of alarms, inter-department training, fire ground communications and time of arrival at fires.

The following documentation must be provided for evaluation:

1. A single map (preferably with a scale of 1 inch = 500 feet to a maximum of 1 inch = 2500 feet) containing the following information:
 - A. The boundaries of the community or area served by the fire department.
 - B. All “all-weather” roads and bridges. Indicate any bridge that does NOT have a safe weight capacity sufficient for fire department apparatus. (Weight information is available from the state department of transportation)
 - C. The location of fire stations.
 - D. The location and name of any fire stations providing automatic aid.
 - E. The location and identification of each water supply site. (hydrants and/or suction supplies)

2. Provide a description of each water supply site and complete a FILL SITE WORKSHEET for each location. Attach applicable certifications and/or letters of permission.
 - A. For each suction water supply site, (impounded supplies, rivers and streams) a certification by a registered professional engineer* must be attached. The certification shall indicate the volume of water available at not over a 15 foot lift during a drought with an average 50 year frequency. When the water supply site is a major body of water or a major stream, a certification of the minimum water level may be sufficient. Any augmentation requirements should be included in the certification.

*May also include a registered hydrologist, registered geologist, soil conservationist, or Federal surface water specialist.
 - B. The flow rate for a hydrant supplied from a water main, or a dry hydrant, should be determined using the pumper and hose arrangement scheduled to be used at that hydrant. (supported by tests).

Note: If tenders are supplied directly from a hydrant, credit shall be given for the demonstrated rate of flow.
 - C. The capacity of impounded supplies, cisterns, tanks or other storage facilities is the minimum storage available at not over 15 foot lift. The flow rate should be determined using the pumper and hose arrangement scheduled to be used at that supply site. (supported by tests).
 - D. The flow rate from a river or stream should be determined using the pumper and hose arrangement scheduled to be used at that supply site at not over 15 foot lift. (supported by tests).
 - E. If the water supply site is subject to freezing, provide a statement showing the maximum known thickness of the ice, equipment used, apparatus carrying the equipment and the estimated time necessary to provide a drafting site through the ice.

Note. The rapid access of a pumper to a drafting source can be aided by the installation of a dry hydrant. This is a piping arrangement similar to a hydrant but designed for drafting. In cold climates, the proper installation of a dry hydrant will eliminate the necessity of creating an opening in the ice. See the National Fire Protection Standard on Water Supplies for Suburban and Rural Fire Fighting, NFPA-1231, as a guide.

HAULED WATER TIME EVALUATION

- A. Fire Site Pumper Set-Up Time is the time necessary for the vehicle to travel 200 feet, maneuver into position, advance 100 feet of 2 1/2" hose line, engage pump, take prime from the booster tank, and discharge water
- B. Supply Pumper Set-Up Time is the time necessary for the vehicle to travel 200 feet, maneuver into position, advance fill lines, establish suction, and flow water to confirm prime.
- C. Tender Fill/Dump Time is the time necessary for the vehicle to travel 200 feet, maneuver into position, fill or dump and travel away 200 feet. Fill to 100% of tank capacity and dump 90% of capacity. A separate fill time should be established for each Supply Pumper.
- D. Folding Tank Set-Up Time is the time necessary for the vehicle(s) carrying the folding tank(s) to travel 200 feet, set up the folding tank(s), set up the jet siphon, if used, and connect the hard suction to the fire site pumper.

FILL SITE WORKSHEET

Fill Site No. _____ Location. _____

Water Storage: _____ gallons - AND/OR - Flow _____ gpm
 Rate _____

Type:

- Cistern.
- Lake or Pond.
- River or Stream.
- Dry Hydrant.
- Wet Hydrant.
- Tank.
- Other: _____
 Supply pumper used.

Subject to freezing.

Available year round. (If not, explain.)

Multiple access points.

Number of tenders to be filled simultaneously. _____

Number of supply pumpers that can operate simultaneously. _____

Distance From Fire Stations.

Station No.	Distance	Station No.	Distance

Record miles to the nearest 1/10, i.e. 1.6 miles.

Attach certification and permission letters, if applicable.