Chapter 2-10
SUPPLEMENTAL WATER SUPPLY

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2-10-00F  Footnote to Chapter 2-10

[HISTORY: Adopted 5-17-1993 Annual Town Meeting, Art. 31. Amendments noted where applicable.]

GENERAL REFERENCES
Sewers and water - See Ch. 1-16.
Sprinkler and fire suppression systems - See Ch. 2-09.

2-10-010  Definitions

[Amended STM 09-09-1996 Art. 5]

For the purpose of this chapter, the following terms, phrases, words and their derivations shall have the meanings herein given. The word "shall" is always mandatory and not discretionary.

ACCEPTANCE TESTING - A test conducted by the Northborough Fire Department utilizing the system for a predetermined period of time. The purpose of this test is to ensure proper operation and recharge.

CISTERN - See NFPA 1231, B-4-2 through B-4-7.

DRY HYDRANT SYSTEM - See NFPA 1231.


NFPA 13R - The current edition of Sprinkler Systems in Residential Occupancies up to and Including Four Stories in Height.

NFPA 231 - The current edition of General Storage.


NFPA 1231 - The current edition of Water Supplies for Suburban and Rural Fire Fighting.

(Prior code § 161-1)

2-10-020  General Regulations

[Amended STM 09-09-1996, Art. 5]

A. Whenever an individual or firm constructs three (3) or more residential buildings or one (1) industrial or commercial building(s) more than one thousand (1,000) feet beyond a municipal fire hydrant with a capability of delivering in excess of five hundred (500) gallons per minute, the requirements of this chapter shall apply. Determination of the 1000’ distance shall be the distance from the hydrant to the nearest point of the farthest building from the hydrant, along a route that fire apparatus would be expected to travel, and acceptable to the Fire Chief.

B. A dry hydrant system or a cistern shall be installed for the exclusive utilization of essential fire and maintenance personnel.

C. The capacity of these dry hydrant systems or cisterns shall be in conformance with the current requirements of NFPA 1231.
   (1) Capacity will be based upon the required fire flow for the structures being constructed.
   (2) For residential areas, a minimum capacity will be twelve thousand (12,000) gallons.
   (3) For industrial or commercial structures, the minimum capacity will be twenty-five thousand (25,000) gallons.
   (4) Farm and agricultural uses will be exempt from these requirements for accessory use. Residences shall not be exempt.

D. Prior to issuance of the building permit for the third residence, these systems shall be complete and fully operational.

E. All cisterns are to be designed in accordance with the current edition of NFPA 1231 and are to include:
   (1) A four and one-half inch (4-1/2”) National Standard Thread (NST) male connection with female cover within fifteen (15) feet of maintained vehicle access.
   (2) A minimum six inch (6”) diameter drilled well with a minimum twenty-five foot (25’) casing and drive shoe, equipped with a minimum one-half (1/2) horsepower well pump to provide a 5-10 GPM constant flow.
   (3) A minimum 32 inch inspection manhole.
(4) An eight inch vent constructed of ASTM Schedule 40 PVC.
(6) A lighted control panel with green power-indicating light-emitting diode (LED) and low-level flashing red indicator and orange pump running indicator. These indicator lights shall be appropriately labeled. The developer must construct a mounting panel and have metered power connected to the cistern after obtaining all necessary electrical permits.
(7) The tank itself shall be constructed of reinforced concrete and be lined with an approved plastic liner or rubber membrane. All components shall be consistent with the specifications of NFPA 1231.
(8) A sign which has a minimum of one-inch white reflective letters on a red reflective background. Signage shall state:

"Fire Department Cistern"  "Fire Department Dry Hydrant"

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(9) All suction and fill piping shall be ASTM Schedule 40 Steel. Vent piping shall be ASTM Schedule 40 PVC with glued joints painted with an epoxy paint to prevent ultra-violet degradation. Suction piping shall be painted red. All other exposed piping shall be painted black.
(10) Suction piping inside the tank shall be of a size to deliver the required fire flow and shall have a listed mesh screen installed vertically at the bottom of the cistern at a height of six inches off the bottom of the cistern attached to a 4’ by 4’ by 1/4” anti-vortex plate.
(11) All fire department pump and suction connections shall be protected from damage by either stantions, posts or landscaping.
(12) All electrical controls, boxes and manholes shall be locked with "keyed alike" padlocks. Master lock number shall be obtained from the fire department.

F. Land that the cistern or actual dry hydrant connection sits on shall be deeded to the town in fee or easement in consideration of one dollar ($1.). This will facilitate municipal maintenance of the system.

G. Dry hydrants shall have the following:
(1) A four and one-half inch (4-1/2”) male National Standard Thread nipple with female cover located within fifteen (15) feet of maintained vehicle access.
(2) Signage as described under § 4-16-020E.
(3) Design of dry hydrants shall include usage of worksheet B-5.3.3 NFPA 1231.

H. Prior to construction, plans will be reviewed and stamped by a Certified Fire Protection Engineer. When the plans are submitted to the Fire Chief, they must be accompanied by a five-year bond equaling the replacement cost of the entire system as determined by the Fire Chief.
I. After completion of construction, final as-built drawings must be submitted and an acceptance test conducted by the Fire Department.

J. The developer must also file and receive approval from the Conservation Commission prior to construction.
(Prior code § 161-2)

2-10-030 Maintenance

A. The developer/builder shall provide a five-year performance bond which will be utilized in case of major failure of the system. The amount of the bond will be determined by the Fire Chief.

B. Prior to construction, the developer/builder will provide the Fire Department’s water supply account with funds necessary to cover all costs of maintenance for five (5) years after completion and acceptance. This amount will be determined by the Fire Chief. Should the full amount not be utilized, the remaining balance will be returned to the developer by the town at the end of the five-year period.
(Prior code § 161-3)

2-10-040 Equipment

A. If the Fire Department does not have appropriate equipment to connect to the dry hydrant or cistern or to reach the target structures, then the necessary equipment will be provided by the developer.
(Prior code § 161-4)

2-10-050 Residential Sprinkler Alternative

Residential sprinkler systems in accordance with NFPA 13, 13D, 13R, 231, 231c may be installed in place of the water supply requirements of § 4-16-020, provided that they have an adequate water supply and they meet all requirements of Chapter 4-12, Sprinkler and Fire-Suppression Systems, of the Code of the Town of Northborough.
(Prior code § 161-5)

2-10-060 Municipal Water System Extension Alternative

A. The requirements of this chapter shall be waived if, with the approval of the Northborough Water and Sewer Commission, the developer extends the municipal water system to the point that it is one thousand (1,000) feet or less from the hydrant to the nearest point of the farthest building from the hydrant, along a route that fire apparatus would be expected to travel, and acceptable to the Fire Chief.

B. The following fire flows must be achieved from the extended municipal water system:
(1) Residential: sustained minimum flow of five hundred (500) gallons per minute for twenty (20) minutes.

(2) Industrial: sustained minimum flow of one thousand (1,000) gallons per minute for twenty (20) minutes.

[Amended STM 9-9-1996 ART. 5]

(Prior code § 161-6)