Agency

Department of Public Utility Control

Subject

Certificates of Convenience and Necessity for Small Water Companies

Inclusive Sections

§§ 16-262m-1—16-262m-9

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Certificates of Convenience and Necessity for Small Water Companies

Sec. 16-262m-1. Definitions

(a) "Community Water System" or "System," as used herein, shall mean a system which supplies to the public piped water for human consumption, if such system has at least fifteen and no more than two hundred fifty service connections or regularly serves an average of twenty-five to one thousand persons daily at least sixty days out of the year, when such water is supplied as part of a lease or contract. A community water system includes but is not limited to, (1) any collection, treatment, storage, and distribution facilities under control of an operator of such system and used primarily in connection with such system, and (2) any collection or pre-treatment storage facilities not under such control which are used primarily in connection with such system. Community water systems may include, but are not limited to service to: residential sub-divisions, cluster-housing projects, homeowners associations, municipalities, tax districts, duplexes, townhouses, apartment buildings or complexes, residential and office condominium developments, elderly housing projects, convalescent homes, trailer or mobile home parks, industrial parks, shopping centers or malls, large manufacturing buildings and other commercial enterprises.

(b) "Feasible Interconnections," as used herein, shall mean that the extension of an existing utility's water mains is considered feasible to serve a proposed project with at least fifteen service connections or twenty-five persons if the developer's investment for such extension, including service connections and appurtenances, is less than $5,000 (construction costs only) per dwelling or office unit and if there is sufficient supply and storage facilities to accommodate the anticipated demand available from the existing utility. If there is insufficient supply and storage available from the existing utility, the cost of developing such facilities may be included in the water main extension proposal, as additional items.

(c) "Duplication of Water Facilities" as used herein, shall mean that plant and equipment of a community water system which the Department of Public Utility Control determines is substantially repetitive to the plant and equipment of another water purveyor or community water system within one linear mile of the proposed project, as measured along public or private roadways. Geological factors such as elevation differences, slope of the land and depth to bedrock will be considered in determining duplication of facilities.

(d) "Expansion," as used herein, shall mean the following: (1) a five percent increase in the number of service connections to be served by a community water system, above the number allowed under an existing certificate or permit issued by the Department of Public Utility Control and the Department of Health Services, or (2) a five percent increase in the number of service connections to be served by a community water system above the number served as of the effective date of these regulations.

(e) "Phase I-A, Phase I-B and Phase II," as used herein, shall mean the three parts of the application and review procedure for the construction or expansion of any community water system.

Phase I-A grants the developer approval of his well sites and permission to obtain the

well drilling permits from the appropriate town to proceed with groundwater exploration and development of such wells. The issuance of this approval means that the Department of Public Utility Control and the Department of Health Services have determined that a main extension to an existing system is not feasible (for new water systems only) and that there will be no duplication of service of other existing water utilities in the area when the project is finished. Phase I-B evaluates the well yield and water quality data so that proper pump sizing, storage and appurtenant equipment and any required treatment processes can be incorporated into the design of the water system. This approval permits the developer to obtain building permits from the town to clear the site, lay out the roads, construct the drainage facilities and dig or pour the foundations of the buildings themselves. Phase II Approval, the final Certificate, permits the developer to go forward with the remainder of the project, i.e. installing the water distribution system and waterworks (storage tanks, transfer pumps, meters, etc.) and the septic or sewer systems (assuming appropriate approvals have already been obtained from the Department of Health Services or local Directors of Health or Department of Environmental Protection) for the septic or sewer systems and the diversion of water.

(f) "Service Connection," as used herein, means the service pipe from the main to the curb stop, at or adjacent to the street line or the customer's property line.

(g) "Customer," as used herein, means any person, firm, corporation, company, association, governmental unit, lessee who by the terms of a written lease is responsible for the water bill, or owner of property furnished water service by a water company.

(h) "Existing System," as used herein, shall mean a regulated public service or municipal utility or regional water authority having an operating water system within one linear mile of the proposed project as measured along public and private roadways.

(i) "Satellite system" as used herein, shall mean a non-connected community water system of an existing system.

(j) "Regulated Public Service Utility," as used herein, shall mean a water company, as defined in Section 16-1 of the General Statutes of Connecticut, that is under the jurisdiction of the Department of Public Utility Control.

(Effective September 25, 1987)

Sec. 16-262m-2. Chronological application procedures

The following procedures for applying for and issuing certificates of public convenience and necessity shall be followed by any applicant for a certificate of public convenience and necessity in accordance with General Statutes of Connecticut Section 16-262m, and by the Department of Public Utility Control, the Department of Health Services, and any other participant in the proceeding on such an application:

(a) The Department of Public Utility Control may conduct a pre-application conference with any potential applicant.

(b) (1) The applicant shall submit three (3) originals of the application for approval under Phase I-A, Phase I-B, or Phase II to the Department of Public Utility Control's

Engineering Division in the format prescribed by the Department of Public Utility Control.

(2) An application fee of $100.00 shall be enclosed with the initial application when it is submitted to the Department. Checks shall be made payable to the Treasurer of the State of Connecticut. Payment of only one (1) fee shall be required per application, even if the application is submitted in separate phases. An applicant whose application is rejected or denied will be required to pay a separate fee for any application subsequently resubmitted. An applicant may elect to submit Phase I-A, Phase I-B and Phase II data of the application simultaneously, but each Phase will be reviewed separately.

(c) The Department of Public Utility Control will forward one copy of the application for approval under Phase I-A, Phase I-B and Phase II to the Department of Health Services, notifying it that processing and reviewing should begin. The Department of Health Services should conduct well site inspections upon receiving notice from the Department of Public Utility Control that the Application is considered complete and an interconnection has been found not to be feasible.

(d) The Department of Public Utility Control shall review each phase of the application preliminarily for completeness and either accept or reject the application, or specify the additional information required. The Department of Public Utility Control shall notify, in writing, any applicant and the Department of Health Services of the Department of Public Utility Control's decision to accept or reject the application or to require additional information. Upon completion of review of each phase of an application, the Department of Health Services shall forward its approval or denial in writing to the Department of Public Utility Control.

(e) (1) The Department of Public Utility Control and the Department of Health Services shall simultaneously review each phase of the application on its merits, and either recommend approving or denying the application's request.

(2) The Department of Public Utility Control and the Department of Health Services may consult with each other and with the applicant to modify the application prior to such approval or denial, providing all modifications are confirmed and submitted in writing by the applicant.

(f) Upon the joint approval of any phase of the application by the Department of Public Utility Control and the Department of Health Services, the Department of Public Utility Control shall issue a letter of approval for that phase of the project.

(g) Upon the joint agreement between the Department of Public Utility Control and the Department of Health Services, the two agencies shall issue the Certificate pursuant to General Statutes of Connecticut Section 16-262m. If either Department finds reason for denial of a Certificate, no Certificate shall be issued.

(h) Any applicant issued a certificate under Phase II shall submit one (1) copy of as-built plans, certified by a professional engineer registered in the State of Connecticut, each, to the Department of Public Utility Control, to the Department of Health Services, to the specified owner of the water system, and to the town in which the project is located. These as-built plans shall be submitted to the respective parties no later than ninety (90) days from

the completion of the construction.

(i) The Department of Public Utility Control and the Department of Health Services shall complete its review of each phase of the application in accordance with the schedule set forth below:

(1) Phase I-A reviews shall be completed within sixty (60) days of the Applicant filing the information specified in Section 16-262m-5 herein, with the Department of Public Utility Control;

(2) Phase I-B reviews shall be completed within thirty (30) days of the Applicant filing the information specified in Section 16-262m-6 herein, with the Department of Public Utility Control;

(3) Phase II reviews shall be completed within sixty (60) days of the Applicant filing the information specified in Sections 16-262m-7, 16-262m-8 and 16-262m-9 (if applicable) herein, with the Department of Public Utility Control;

(4) If the Applicant elects to submit Phase I-A, Phase I-B and Phase II data of the application simultaneously, each phase will be reviewed separately as indicated in paragraphs 1, 2 and 3 above.

(Effective September 25, 1987)

Sec. 16-262m-3. Application and approval of three-phase construction

(a) The application for a new system or for an expansion of an existing system which involves a new water source shall be submitted and reviewed in three phases, as Phase I-A, Phase I-B and Phase II. The same chronology and procedures established in Section 16-262m-2 shall be followed sequentially first for Phase I-A and subsequently for Phase I-B and Phase II. It is recognized that some applications for expansion may not require a Phase I-A or Phase I-B review. In such cases only a Phase II application shall be required.

(b) (1) The application for Phase I-A, shall identify items including, but not limited to, the following:

(A) The feasibility of interconnection to an existing system;

(B) the location and proposed construction of any source of supply; (C) the possible duplication of service and water facilities caused by the installation of the proposed system; (D) the name of an existing regulated or municipal water utility or regional water authority which will own, operate and maintain the final constructed water supply facilities if they are to remain as a non-connected satellite system;

(2) The Department of Public Utility Control and the Department of Health Services shall determine the issues in subparagraphs (b) (1) (A), (b) (1) (B), (b) (1) (C), and (b) (1) (D) in this subsection;

(3) If the Department of Public Utility Control and Department of Health Services jointly determine that the applicant meets the criteria reviewed under subdivisions (1) and (2) of this subsection, the Department of Public Utility Control shall grant approval of the Phase I-A application, in writing to allow the applicant to construct the source of supply proposed in the application. The applicant shall proceed to construct the source of supply in

conformance with the application and any conditions set by the Department of Public Utility Control and Department of Health Services in the approval. Applicants proposing withdrawals in excess of 50,000 gallons of water from one or more wells joined in a system where combined maximum withdrawal exceeds 50,000 gallons of water during any twenty-four hour period must confer with the Department of Environmental Protection to determine appropriate water diversion permit requirements under Section 22a-365 of the General Statutes of Connecticut;

(4) Approval under Phase I-A shall not in and of itself guarantee the later issuance of a certificate of public convenience and necessity.

(c) (1) The application for Phase I-B shall identify items including, but not limited to, the following:

(A) well yield data for each well, based on a suitable yield test performed by a qualified well yield tester in accordance with the criteria set forth in section 16-262m-8 herein and Section 19-13-B51 (K) of the Regulations of Connecticut State Agencies; and

(B) water quality data for each well as specified by the Department of Health Services.

(2) The Department of Public Utility Control and the Department of Health Services shall jointly evaluate the data in subparagraphs (c) (1) (A) and (c) (1) (B) in this subsection.

(3) If the Department of Public Utility Control and Department of Health Services determine that the applicant meets the criteria reviewed under subparagraphs (c) (1) (A) and (c) (1) (B) of this subsection, the Department of Public Utility Control shall grant approval of the Phase I-B application, in writing to allow the applicant to obtain building permits to perform the functions specified in section 16-262m-1 (e). The applicant shall proceed with construction in conformance with the application and any conditions set by the Department of Public Utility Control and the Department of Health Services in the approval. Approval under Phase I-B shall not in and of itself guarantee the later issuance of a certificate of public convenience and necessity for the applicant.

(d) (1) After receiving approval to proceed with the various aspects of the project under subsection (c) above, an applicant shall submit an application under Phase II. This application shall demonstrate items including, but not limited to, the following:

(A) conformance of proposed construction with the Department of Public Utility Control's and Department of Health Services' engineering standards;

(B) conformance of proposed construction with all federal and state standards on water supply;

(C) the financial, managerial, and technical resources of the applicant and ability to maintain adequate service.

(2) The Department of Public Utility Control and Department of Health Services shall jointly evaluate the issues in subparagraphs (d) (1) (A), (d) (1) (B) and (d) (1) (C) of this subsection.

(3) If the Department of Public Utility Control and Department of Health Services determine that the application meets the criteria in subparagraphs (d) (1) (A), (d) (1) (B) and (d) (1) (C) of this subsection the Department of Public Utility Control and Department

of Health Services shall jointly issue a certificate of public convenience and necessity to the applicant.

(4) The applicant shall notify the Department of Public Utility Control, the Department of Health Services and the specified owner of the water system when the construction of the pumphouse, distribution system and service lines commence so that a field inspection can be scheduled to witness the installation of such items and when construction is completed so that a field inspection can be scheduled to inspect the as-built facilities.

(Effective September 25, 1987)

Sec. 16-262m-4. Options when main extensions are not feasible

(a) In the event that the Department of Public Utility Control and Department of Health Services determine that a main extension is not feasible, i.e. that it is too costly to construct a main extension; and that no existing regulated public service or municipal utility or regional water authority is willing to expand or own, operate and maintain the final constructed water supply facilities as a non-connected satellite system, the applicant may pursue the following options:The above options must be pursued in the order presented, i.e. option three cannot be pursued until options one and two have been exhausted.

(1) If an existing regulated public service or municipal utility or regional water authority is willing to provide satellite ownership and management services, but is unable to meet all the criteria described in Sections 16-262m-8 and 16-262m-9 herein, the Department of Public Utility Control and the Department of Health Services may waive specific criteria in writing, if it is deemed to be in the best interest of the public affected.

(2) The applicant may withdraw the application and request the town in which the project is to be constructed to determine if the town's zoning requirements will permit individual wells. If this proposal is acceptable to the town, the developer may change the configuration of the project in order to accommodate individual wells. This option is available to the applicant at any time and may be pursued without obtaining a Certificate of Public Convenience and Necessity.

(3) The applicant may continue forward with the application by sustaining the burden of proof that the entity that will own the water system has the financial, managerial and technical resources to operate the proposed water supply system in a reliable and efficient manner and will provide continuous, adequate service to the proposed consumers to be served by the system. The criteria for meeting this burden of proof is set forth in Section 16-262m-9 of these Regulations.

(b) Any party who is aggrieved such that a specific personal and legal interest of said party has been specially and adversely affected by the decision to approve, reject or modify the application for the issuance of a Certificate may request a hearing which will be held jointly before the Department of Public Utility Control and the Department of Health Services. Such appeal will be based on the Administrative record compiled by the Department of Public Utility Control and the Department of Health Services including such additional relevant evidence and testimony as the parties may submit.

(c) If a community water system, as defined in Section 16-262m-1 (a) herein, is constructed without the required Certificate of Public Convenience and Necessity, the Department of Public Utility Control and the Department of Health Services shall notify the appropriate Town officials, of the Town in which the system is located, that such Town is responsible for the future operations of that community water system, in accordance with Section 8-25a of the General Statutes of Connecticut.

(Effective September 25, 1987)

Sec. 16-262m-5. Components of the application under phase I-A

Any application for Phase I-A shall include, but not be limited to, the following:

(a) exact legal name, address, and telephone number of applicant and name and title of contact person; in the event the applicant is a corporation, the applicant should also provide the names and addresses of the corporate officers;

(b) name, address, telephone number of proposed registered professional civil engineer who will have design and supervision responsibility for the construction of the system;

(c) a check for $100.00 payable to the Treasurer of the State of Connecticut;

(d) engineering data certified by a professional engineer registered in the State of Connecticut as follows:

(1) At a minimum, a site plan and specifications for any water sources which shall provide for adequate well location, adequate well construction procedures, and proper sanitary easements for the wells. There shall be at least two wells shown on the plan and a reserve site for additional wells, as needed.

(2) Plans showing the relationship of the proposed water system to the sanitary sewage and storm drainage facilities, and indicating the distances from the proposed wells; wetlands and watercourses, observation wells; contour lines, customer premises, and sanitary sewage, storm drainage and septic facilities;

(3) A minimum 8″ square location plan map showing the location and extent of service areas of any existing community water system or other water purveyor within one linear mile of any portion of the proposed system and identifying all adjacent entities or property owners; (use a Scale 1″ = 2000′). The map should also indicate any known probable future building areas (as filed with the Town Planning & Zoning Commission) which might reasonably be served by main extensions of the subject system;

(4) An evaluation of the quantity of water necessary to provide an adequate supply at required pressures to existing and projected customers, including probable future building areas, during periods of average and peak demands for at least 15 years after construction;

(5) Sanitary survey evaluation of pollution sources (present and past), such as, but not limited to: sanitary sewage, cemeteries, landfills, salt storage and commercial and industrial facilities, which might affect the groundwater quality;

(6) A description of the groundwater quality and subsurface soils as classified by the United States Geological Survey, for the project area;

(7) A plan for controlling pollution sources which might affect the wells;

(8) A description of the procedures, methods, schedule and location, for conducting required sampling, testing and reporting on yield testing and water quality;

(9) A topographical map showing the relationship and location of the proposed project to the surrounding area;

(10) A brief description of the water system project and operational layout;

(e) A letter from the town where the project is located indicating whether or not fire protection facilities are required to be included in the design of the water system. If fire protection is to be required, the letter from the town should indicate the number of hydrants required to serve the project as well as the minimum distance allowed between hydrants;

(f) letters from all regulated public service or municipal water utilities or regional water authorities within one linear mile of the applicant's project expressing willingness or unwillingness to serve as water supplier to the applicant's project. If a water utility expressed willingness to serve, the letter submitted shall include the proposed manner of service and cost, via main extension or satellite ownership. The letter shall discuss the alternative of the water utility owning and operating the system as a non-connected satellite system. The letter shall also include the linear footage, size of pipe, material, and cost of a main extension including service connections, if such extension were required to be constructed. It should also indicate whether additional supply, storage and booster facilities, and their related costs, are necessary for providing proper service;

(g) if the applicant's project is located in an area where there is an adopted coordinated plan, in accordance with Sections 25-33c to 25-33j, inclusive, of the General Statutes of Connecticut, the water utility expressing willingness to serve the applicant's project must do so, in conformance with the established plan with full regard to exclusive service areas and satellite ownership and management stipulations. If a water utility coordinating committee has been convened for the appropriate management area, but does not yet have an approved coordinated plan, the applicant should furnish a letter from the committee indicating that the project is conceptually agreeable to it.

(Effective September 25, 1987)

Sec. 16-262m-6. Components of the application under phase I-B

Any application for the issuance of a certificate of public convenience and necessity under Phase I-B shall include, but not be limited to, the following:

(a) A copy of the well drillers completion report for each well;

(b) A copy of the yield test results for each well indicating pumping rates, certified well yields and drawdown information;

(c) A copy of the water quality test results from samples obtained during the yield test;

(d) A signed agreement between the developer of the water system and the existing regulated public service or municipal water utility or regional water authority indicating that the final constructed water supply facilities will be dedicated to that utility. With a regulated public service company such agreement will specify any refunds that the developer may be entitled to for each service connection made to the community water

system. The utility will be expected to receive from the developer an itemized breakdown of the actual costs of the water system facilities so that proper accountability and rate-making treatments (if applicable) can be afforded to the utility by the Department of Public Utility Control.

(e) The requirements of Section 16-262m-9 shall be addressed in Phase I-B.

(Effective September 25, 1987)

Sec. 16-262m-7. Components of the application under phase II

Engineering data certified by a professional engineer registered in the State of Connecticut as follows:

(a) Plans and specifications for the project must include but not be limited to: transfer pumps, well pumps and pump curves, hydropneumatic tanks, treatment facilities, distribution system layout, atmospheric storage facilities, metering (each source and customer), location of sample taps, on-site standby power, presence of emergency alarms, location of pressure gauges, location of gate valves and blow-offs, water level gauges on storage tank, fire protection (if necessary), and disinfection procedures;

(b) A hydraulic gradient of the proposed system;

(c) A detail of a typical service line, service connection, thrust block installation, hydrant installation, cross-section of trench containing pipe, and a meter installation;

(d) A plan and profile drawing of the water main and all other underground utilities (sewer, gas, electric, telephone or cable television);

(e) Name, address, telephone number and title of proposed operator with day-to-day responsibility for system.

(Effective September 25, 1987)

Sec. 16-262m-8. Design criteria

All community water systems proposed for construction or expansion in accordance with Section 16-262m of the General Statutes of Connecticut shall be designed substantially in accordance with the technical standards enumerated herein.

(a) For the purposes of this Section and Sections 16-262m-5, 16-262m-6 and 16-262m-7 inclusive, the following definitions shall apply:

(1) "Anticipated Average Daily Demand" shall mean the estimated normal water usage of the system as determined for the most representative 24 hour period of record not affected by unusual demand conditions such as drought or a significant temporary increase in demand;

(2) "Peak Hour Demand" shall mean largest hourly volume of water consumed and shall be considered ⅓ of the average daily demand;

(3) "Design Population" shall mean the estimated number of people per service connection, calculated as follows, unless specific circumstances dictate otherwise:

Type of service	*Design Population Per*

	Service Connection
Single family dwelling	4
(Over 3 bedrooms add 1 person per additional bedroom)	
Multi-dwelling (i.e. apartments, elderly housing duplexes, townhouses and, residential condominiums	
One bedroom unit	2
Two bedroom unit	3
Three bedroom unit	4
(over 3 bedrooms add 1 person per additional bedroom)	
Mobile Homes or Trailers	2.5
Convalescent Homes	Use Number of Beds
All other components described in 16-262m-1(a)	Use Estimated Population

(4) "Safe Daily Yield of a Water Supply System" shall mean the amount of water which can be delivered to the system from all the system sources at the safe yield rate simultaneously in an 18 hour period expressed in gallons per day;

(5) "Safe Yield of a Well" shall be calculated as follows: (A) Unconsolidated aquifer ground water sources. The safe yield shall be based on an analysis of the impact of minimum water table elevations projected in a dry period on the yield of the well(s) and an analysis of critical impacts such as decreased stream flow or induction of pollutants. (B) Confined and bedrock aquifer ground water sources. Safe yield shall be equal to 90% of the hourly yield of the well multiplied by 18 hours of pumping per day except that the safe yield may be less when utilization of this yield will have unacceptable impacts or when historical reports or other information indicates that the safe yield is less. Hourly well yield shall be based on a pump test during which the cone of depression caused by the pumping of the well shall be stabilized for at least 24 hours;

(6) "Source" shall mean any Department of Health Services approved well, spring, reservoir or other location where water is siphoned, pumped, channeled or drawn for use in a potable water supply;

(7) "Source of Pollution" shall mean any place from which stems or condition which may cause pollution of a ground or surface water supply. It may include but not be restricted to a watercourse including any stream, pond, lake or river; privy; subsurface sewage disposal system; cemeteries; sanitary landfill; sewage lagoon; industrial waste disposal location; sanitary or storm sewers; or a buried oil or gasoline storage tank;

(8) "Well Pump Capacity" shall mean the maximum quantity of water the well pump can supply under normal operating conditions. The pump capacity shall not exceed the safe yield of the well;

(9) "Yield of a Well" shall mean the amount of groundwater which can be withdrawn

from a well as determined by the yield test. The yield of a well is expressed as gallons per minute (gpm);

(10) "Service Pipe," as used herein shall mean the pipe that runs between the curb stop, at or adjacent to the street line or the customer's property line, and the customer's place of consumption.

(b) **Facility location.** These include such items as, but not limited to, treatment plants, pumping stations, storage tanks, etc., but do not include water intakes and connecting pipelines.

New facilities are to be located: (1) Above the level of the one hundred year flood and not within the floodway boundary as established on flood boundary and floodway mapping prepared pursuant to the federal flood insurance program; (2) Where chlorine gas will not be stored or used within three hundred feet of any residence; and (3) Where the facility is not likely to be subject to fires or other natural or manmade disasters.

(c) The following equations are to be used when determining the design population and water demand of the community water system. Where unusual circumstances exist, the Department of Public Utility Control and Department of Health Services will determine the appropriateness of these equations.

(1) Design Population Served = number of service connections × number of people per service;

(2) Average Daily Demand = population served × 75 gallons per person per day;

(3) Peak Hour Demand = average daily demand × ⅓.

(d) **Water Supply requirements:**

(1) Each community water system shall be designed to furnish and maintain sufficient facilities to provide a continuous and adequate supply of water; and there shall be at least a 15% margin of safety maintained between the system's safe daily yield and anticipated average daily demand. Unless other acceptable provisions are made to assure continuous service, the community water system should be able to meet the anticipated average daily demand with its largest well and/or pump out of service;

(2) For a system utilizing only groundwater supplies, a minimum of 2 well sources shall be provided;

(3) All wells shall be subjected to a minimum 72-hour yield test, by a qualified well yield tester, such that at a constant pumped discharge rate, the drawdown level has stabilized for at least a 24-hour period. The pump must run continuously during the yield test for the entire 72 hour period irregardless of the anticipated well yield. The following items must be recorded and measured during the test:

(A) Static water level before pumping;

(B) Date, time, pump rate and drawdown (at least hourly);

(C) Time and water levels after pump has been shut down until well has recovered;

(D) Each well shall have a drawdown curve plotted from the results of the yield test, with the tester's established safe daily yield at its stabilized drawdown certified and printed thereon. Suitable provisions shall be made in cases of wells that are located in close

proximity to each other and subject to "interference." In such cases a simultaneous pumping of each well shall be required;

(E) Whenever possible, the pump test shall be performed during the summer months and should be conducted during a time period absent of precipitation or as reasonably close to non-precipitation as possible;

(F) Suitable provisions including data from observation wells shall be made in cases of wells located in close proximity to wetlands, drainage ways, or watercourses in order to quantify the effect of induced recharge on flows in such wetlands, drainage ways or watercourses;

(4) All wells, especially deep drilled rock wells, are subject to diminution of their yields after a period of time. Therefore, they should be periodically monitored for possible loss of yield, and scheduled for an appropriate maintenance program when conditions dictate. When new wells are added at a future date, especially in the vicinity of existing wells, suitable measures shall be taken to ascertain potential loss of yield from the adjacent wells simultaneously with the yield testing of the new wells;

(5) Reserve well site property is required and must be shown on the final map;

(6) There shall be a safe yield capacity sufficient to supply 75 gallons per person per day and at least 15% additional supply to maintain an adequate margin of safety and be able to accommodate adjacent growth in the future.

(e) **Source Protection:**

(1) The following *minimum* separating distances are required by Public Health Code Sections 19-13-B51 and 19-13-B103 (Technical Standards).

Item		Minimum Distances*		
		Under 10 gpm	10–50 gpm	Over 50 gpm
(A)	Septic system, buried oil tanks or other sources of pollution	75'	150'	200'
(B)	Cast iron sewer pipe or equivalent	25'	75'	100'
(C)	Surface water body or drain	25'	50'	50'

***** Greater separating distances are required for gravel wells with pumping capacities greater than 50 gpm where ledge is found at less than 10 feet and/or the soil percolation rate is faster than 1 inch per minute at surrounding septic systems.

(D) Sanitary conditions within the radial separating distance required shall be under the control of the water supply owner by direct ownership, easement, or other arrangement approved by the Department of Health Services and detailed on the as-built map.

(f) **Well Construction and Water Quality:**

(1) Wells shall be constructed in accordance with Public Health Code Regulation 19-

13-B51 and the Regulations of Connecticut State Agencies Sections 25-128-1 through 25-128-64, inclusive (Regulations of the Well Drilling Industry);

(2) The bacterial, physical, inorganic chemical, organic chemical and radiological quality of the source must satisfy the requirements of Public Health Code Regulation 19-13-B102 and the Connecticut Department of Health Services action levels for organic compounds. Suitable treatment may be required by the Department of Health Services;

(3) Each well shall be equipped with a water level probe for periodic drawdown measurement; and there shall be provided suitable low water level well pump shutoff and lightning protection devices in accordance with Section 19-13-B102 (n) of the Regulations of Connecticut State Agencies.

(g) **Atmospheric Storage Tank:**

(1) The atmospheric storage tank shall be equipped with a properly bolted entry hatch to allow access for cleaning and painting of the tank and a filler pipe to provide for water to be trucked in. The filler pipe must be capped and locked. The tank shall also be equipped with a sight glass gauge, a screened vent pipe and a high and low water level signal system. There shall be a drain valve at the bottom of the accessible face of the tank. Drain lines must discharge to the ground. No direct connection to a sanitary sewer will be permitted;

(2) Atmospheric storage tank capacity shall be at least 200 gallons per residential customer or equal to the average daily demand of the system, whichever is the greater number. If commercial or industrial customers are included, additional storage shall be provided based on reasonable average day estimated water usage thereof;

(3) Hydropneumatic tank and transfer pumps:

(A) A hydropneumatic tank and transfer pump arrangement, used in tandem with the atmospheric tank, shall be sized to accommodate the peak hour demand. A minimum of two (2) transfer pumps shall be installed to operate alternately, each capable of providing water to the system at the peak hour demand rate; (B) The transfer pumps shall be installed between the atmospheric tank and the hydropneumatic tank; (C) The required gross volume of the hydropneumatic storage tank shall be calculated using the following equations:

$$\text{Usable Volume} = 5 \text{ minutes} \times \text{largest transfer pump capacity (gpm)}$$

$$\text{Gross Volume} = \frac{100\% \text{ Usable Volume}}{\% \text{ usable volume}}$$

(D) Transfer pumps shall be protected by low water level shutoff controls in the storage tank.

(4) All waterworks equipment shall be designed and installed so as to assure safe and easy access to the equipment for normal service and for repairs or replacement work.

(h) **On-site Standby Power:**

(1) Wherever possible, there shall be included on-site a permanently installed gasoline, propane-fueled, diesel, natural gas or oil fired generator capable of supporting at least the

largest well pump, one transfer pump, any high service booster stations and all treatment systems simultaneously in the event of an electrical outage. Portable generators may be considered acceptable as an alternate to an on-site generator;

(2) Fuel storage shall be above ground, and provided with a containment area capable of holding the full volume of the fuel tank.

(i) **Transmission and Distribution System:**

(1) The transmission pipelines, (i.e. that pipe from the source of supply to the pumphouse or treatment facility or from the source of supply to the distribution system) from sources of supply shall be designed to deliver, in combination with related storage facilities and to the limits of the capacity of those sources of supply, the maximum requirements of that portion of the system which is dependent upon such transmission pipelines;

(2) The distribution system shall be of adequate size and design to maintain minimum normal operating pressures. Minimum distribution pipe diameter shall be 6 inches except in cul-de-sacs where the mains are not subject to being extended or as otherwise approved by the Department of Public Utility Control. If fire protection is to be provided, minimum distribution pipe diameter shall be 8 inches. All mains shall be installed in the rights-of-way of paved roadways to allow all weather access and to facilitate repairs;

(3) Normal operating pressures, including peak demand conditions in the distribution main shall be between 35 psi and 125 psi at the service connection;

(4) Where static pressures would exceed 125 psi, pressure reducing devices shall be provided on distribution mains;

(5) Insofar as practicable, the distribution system shall be designed so as to avoid dead ends in the mains. Suitable right-of-way easement control shall be provided to the proposed owner and operator and his assigns to permit future such extensions. Where a dead end line is to be used, an adequately sized blow-off shall be installed at the end of the line;

(6) Sufficient isolation valves shall be provided on water mains so that inconvenience to customers and sanitary hazards will be minimized during repairs and flushing. At intersections, valves shall be installed on all connecting mains;

(7) Customer Booster Pumps: No community water system shall be designed to furnish water service to any customer who must utilize a booster pump to pump water from the utility's water main into the customer's plumbing facilities in order to maintain a minimum 35 psi pressure service, except in extreme circumstances and when authorized by the Department of Public Utility Control. The system's gradient shall be designed to preclude this need under reasonable foreseeable conditions for the ultimate service area. Consideration shall be given both to deteriorating pipe conditions leading to increases in pressure losses in the mains and also to any potential hazard which might be created if contamination should be introduced into the system through a cross-connection when a negative pressure is induced in the water main by a customer's booster pump;

(8) Air Relief Valves: At high points in water mains where air can accumulate, provisions shall be made to remove the air by means of hydrants or air relief valves. Suitable protection measures shall be included in the design to cover situations where flooding of the manhole

or chamber may occur;

(9) Air Relief Valve Piping: The open end of an air relief pipe from automatic valves shall be extended to at least one foot above grade and provided with a screened, downward-facing elbow. The pipe from a manually operated valve should be extended to the top of the pit;

(10) Chamber Drainage: Chambers, pits or manholes containing valves, blow-offs, meters, or other such appurtenances to a distribution system, shall not be connected directly to any sewer. Such chambers or pits shall be drained to the surface of the ground where they are not subject to flooding by surface water, or to absorption pits underground;

(11) When installing pipe, care must be taken to keep the pipe clean. Trenches shall be kept as free of water as is possible;

(12) When laying of pipe is interrupted overnight or for any longer period of time, the open end of the pipe shall be plugged tightly and the open trench covered with wood or steel covers;

(13) Installation and pressure testing shall incorporate the provisions of the American Water Works Association Standards and/corresponding installation procedures;

(14) A continuous and uniform bedding shall be provided in the trench for all buried pipe. Backfill material, free of detrimental substances, shall be used. That backfill material shall be tamped in layers around the pipe and to a sufficient height above the pipe to adequately support and protect the pipe. During pipe laying, stones, boulders and any other significantly detrimental materials found in the trench shall be removed for a depth of at least six inches below the bottom of the pipe;

(15) All pipe shall be provided with a minimum earth cover of 4.5 feet. When rock blasting is necessary, ample excess depth shall be provided to allow for a suitable depth of bedding material between the pipe bottom and the rock base. Where frost can be expected to occur deeper than 4.5 feet, additional pipe cover shall be provided to suit. The mains should have adequate cover over the top of the pipe, using suitable backfill material, for protection against surface loads. For river or stream crossings where the water main may be exposed to the air, the water main shall be protected against freezing by an alternate means;

(16) Whenever possible, water and sewer lines (sanitary and storm) shall be located in separate trenches at least 10 feet apart. Where laid in the same trench, the water pipe shall be laid on a shelf at least 18 inches above the sewer pipe and at least 12 inches, but preferably 18 inches, horizontally from the side of the sewer pipe. The horizontal separating distance between a sanitary sewer manhole and a water line shall be 10 feet;

(17) Where water and sewer lines cross, a minimum vertical distance of 18 inches shall be maintained between the water and sewer line with the sewer at the lower elevation. At crossings, pipe joints shall be spaced as far from the crossing as possible;

(18) For force sewer lines there shall be no deviation from the 10 foot horizontal separation and the 18 inch vertical separation distances;

(19) When it is not possible to satisfy the requirements in paragraph (17) of this

subsection above one or more of the following precautions may be approved by the Department of Health Services as acceptable alternatives:

(A) Sleeving of the sewer;

(B) Concrete encasement of the sewer;

(C) The use of a thicker-walled sewer pipe (pressure testing will be required);

(D) Concrete encasement of the water pipe;

(E) The use of thicker-walled water pipe;

(F) The design engineer may also propose other precautionary measures which will be subject to review and approval;

(20) The layout plan should provide for suitable ownership or easement control of the water supply operator to permit further extension of the piping, particularly where dead ends may occur and/or where expansion of the water system can be readily foreseen.

(j) **Materials:**

(1) Metallic and non-metallic materials may be used to construct component parts of a water system including, but not limited to, conduits, pipes, couplings, caulking materials, protective linings and coatings, services, valves, hydrants, pumps, tanks and reservoirs; provided:

(A) The materials shall have a reasonable useful service life;

(B) The material shall be capable of withstanding the internal and external forces to which it may be subjected while in service;

(C) The material shall not cause the water to become impure, unwholesome, nonpotable or unhealthful;

(D) Materials and equipment shall be designed and selected with factors of safety included and installed as to mitigate corrosion, electrolysis and deterioration. When the possibility of a near future interconnection with another utility exists, some components such as pressure tanks and compressors may be designed for limited service life;

(E) Use of non-metallic pipe shall require a suitable tracer wire for pipe location;

(F) No material shall be allowed which does not meet standards established by the American Water Works Association or other comparable standards;

(2) Specifications for materials, equipment, and testing shall be in accordance with all applicable American Water Works Association standards, the specified water utility which will eventually own the system, and the requirements of the Department of Health Services and the Department of Public Utility Control. Such Specifications shall include the following:

(A) Proper protection shall be given to metal surfaces by paints or other protective coatings;

(B) All paints, liners or coatings proposed for use in a water supply system that will come in contact with the potable water must be approved by the Department of Health Services. Following final curing, disinfection and dissipation of the chlorine residual, water samples must be collected and tested in accordance with Section 19-13-B102 of the Regulations of Connecticut State Agencies, for hydrocarbon, organohalide, inorganic

chemical, physical, and total coliform analysis from a sampling point approved by the Department of Health Services. The results of these analyses must be reviewed and approved by the Department of Health Services both at the time of initial drilling of the wells and after the design and construction stages but before using the facility;

(C) Cathodic protection, when required, must be designed and installed by competent technically qualified personnel;

(3) Upon completion of the construction of the community water supply system, the well(s), storage tank(s), and appurtenances must be disinfected, in accordance with procedures established by the Department of Health Services;

(4) Prior to acceptance and use, the design engineer shall supervise appropriate pressure testing of all piping and tanks for leakage to assure specified standards are met.

(k) **Fire protection:**

Whenever fire protection is required, the water system shall be designed and constructed in accordance with recommendations of the Fire Underwriter's Insurance Services Office, the Department of Public Utility Control and the specified water utility that will eventually own the water system. No fire hydrants shall be permitted unless the community water system has at least 150,000 gallons of water in atmospheric storage.

(*l*) **Service Pipes:**

(1) The size, design, material, and installations of the service pipe shall conform to the reasonable requirements of the utility that will eventually own the water system; provided, however, that the minimum size of the pipe shall be not less than ¾-inch and that the use of non-metallic pipe shall include a suitable tracer wire for pipe location;

(2) All service pipes shall be installed below the frost line to prevent freezing;

(3) Service pipes shall not be connected to hydrant branch lines, and they shall not cross intervening properties even with the protection of easements. If fire protection to the customer's property is required, there shall be a separate service connection and separate service pipe paralleling the domestic service pipe to the customer's place of consumption;

(4) The service pipe shall be connected to a single-service corporation at the main, installed with a suitable gooseneck and be sufficiently flexible to prevent fracture from expansion or contraction. It shall be run perpendicular from the water main to the customer premises and be free from any tee, branch connection, irregularity or defect;

(5) The service pipe shall be installed with a suitable shutoff valve and curb box at the property line. There shall also be a suitable shutoff valve at the interior of the premises. In the case of service pipes dedicated for fire protection, there shall be a detector check meter installed on the pipe;

(6) No physical connection between the distribution system of a public water supply and any non-public water supply is permitted except as provided for in Section 19-13-B37 of the Regulations of Connecticut State Agencies;

(7) A separate service connection shall be required for any dwelling unit or office unit that is adaptive to individual ownership. Thus, an application for a Certificate of Public Convenience and Necessity for the following types of projects must include provisions for

installing a separate service connection for each dwelling or commercial unit: residential subdivisions, including homeowners associations and municipal tax districts; cluster housing projects; duplexes; townhouses; residential and office condominiums; industrial parks; shopping centers or malls; trailer or mobile home parks; elderly housing projects and garden apartment complexes. Projects that may or may not require individual service connections, and subject to the Department of Public Utility Control's judgment, include high rise apartment complexes, multi-storied homes, commercial buildings and high rise condominiums;

(8) Each service connection shall be separately metered. The service line in each dwelling or office unit shall contain two ball valves and an American Water Works Association-certified meter adaptive to a remote reading device setting. The water utility which will eventually own the water system shall be responsible for providing the water meters to each customer premise at its own expense.

(m) **Pumphouse requirements:**

(1) Well pit and/or pumphouse construction shall be designed to prevent the entrance of rodents and other small animals. All facilities shall be locked and fenced and otherwise protected and secured to prevent entrance of unauthorized persons;

(2) Adequate drainage of all well houses and pits including the use of floor drains shall be provided as required in Public Health Code Regulation 19-13-B51h;

(3) Necessary electrical controls shall be installed to enable both manual and automatic operation of all pumps, motors and accessory equipment. All controls must be clearly labeled as to their function. All electrical wiring, controls and appurtenances shall be installed in conformance with the National Electrical Code;

(4) Flow meters capable of measuring totalized and instantaneous flow shall be installed to accurately measure independently each source of supply and their installation shall provide for ease of meter reading, repair and/or removal. Additional meters may be required where water treatment and/or other conditions dictate;

(5) Water treatment, when required, shall be installed in accordance with procedures established by the Department of Health Services;

(6) Smooth end (e.g. threadless chrome) sampling taps shall be installed on the discharge line of each well and at a representative point(s) off the discharge pipe(s) coming from the storage tank(s). Where treatment is used, taps before and after treatment facilities shall also be installed. Taps shall be at least 12 inches above the finished floor and any possible high water level. Taps must point downward;

(7) Suitable over and under voltage protection shall be provided on the various electrical equipment;

(8) The waterworks facilities shall be provided with suitable lighting, heat and ventilation. If necessary, a dehumidifier shall be used during summer operations;

(9) The pumphouse, wells and other plant facilities should be accessible to the various maintenance vehicles.

(Effective September 25, 1987)

Sec. 16-262m-9. Financial, managerial, and technical qualifications criteria

(a) If the Department of Public Utility Control and Department of Health Services determined that a main extension is not feasible or no utility is willing to extend such main, and that no existing regulated public service or municipal utility or regional water authority is willing to own, operate and maintain the final constructed water supply facilities as a non-connected, satellite system, and if it is not feasible to install private individual wells, the applicant may continue forward with the application by satisfactorily providing the following additional information:

(1) A description of the applicant's business organization along with certified copies of the executed documents or any authority granted pursuant to Section 2-20a of the General Statutes of Connecticut;

(2) Certified copy of most current 12-month balance sheet and income statement of proposed owner of water system including a statement of current assets and liabilities;

(3) A copy of most current income tax return of proposed owner of water system;

(4) Indicated source of financial resources that would be used to fund the daily operations and any needed future capital improvements;

(5) Describe the financial ability of the proposed owner of the water system to provide a continuous, adequate and pure supply of water in routine and emergency situations including a pro forma cash flow statement for one year starting immediately after construction is completed;

(6) Describe the annual budget formulation process;

(7) Indicate the name, address, and qualifications of person/company who will be responsible for the budget preparation and administration;

(8) Describe the controls that will be in place to keep operations within budget and the sanctions or consequences that there will be for budget overruns;

(9) Indicate the name and address of person responsible for filing tax returns and annual audit reports;

(10) Indicate the name and address of person(s)/company(s) who will be responsible for routine operations including maintenance, customers billing and collections, repairs, emergency service and daily management;

(11) Describe the planning process to be implemented and assignment of responsibilities to provide for future needs of the customers including a program for routine system maintenance and the increase of future supplies as may be necessary;

(12) Describe the technical background and experience of the proposed operator including any membership in professional water industry organizations;

(13) Furnish a signed agreement or contract under which the proposed operator will serve, including guarantees of continuous long-term operation;

(14) Indicate the name and address of person/company who will manage the water system if different from operator;

(15) If there will be a business manager, in addition to the operator, describe his or her qualifications;

(16) Describe the governing board, its background in utility business governance and the decision making process of the management entity;

(17) List items which the operator will be responsible for and those which the manager will be responsible for;

(18) A plan for conducting cross-connection investigations including identification of the personnel capable of conducting cross-connection inspections;

(19) A plan (including the procedures, methods, schedule and location) for conducting required sampling, testing and reporting regarding: (A) water quality testing; (B) pressure testing; (C) production metering; (D) customer meter testing; (E) ground water monitoring pursuant to Section 19-13-B102 (n) of the Regulations of Connecticut State Agencies;

(20) A plan for maintenance of the system;

(21) A plan for the maintenance of required records including at least: (A) service area maps; (B) water quality, pressure, metering and other tests; (C) emergency procedures; (D) metering; (E) energy use; (F) chemcial use; (G) water levels; (H) production and consumption; (I) customer complaints; (J) non-revenue water; (K) all financial records;

(22) A plan for operator safety;

(23) A plan for leak detection;

(24) A plan for long range conservation including supply and demand management practices;

(25) A plan for action and proper notification of authorities in the event of an emergency;

(A) As used above, "emergency" means any hurricane, tornado, storm, flood, high water, wind-driven water, tidal wave, tsunami, earthquake, volcanic eruption, landslide, midslide, snowstorm, drought or fire, explosion, electrical outage, toxic spill or attack or series of attacks by an enemy of the United States causing, or which may cause, substantial damage or injury to civilian property or persons in the United States in any manner by sabotage or by the use of bombs, shellfire or atomic, radiological, chemical, bacteriological or biological means or other weapons or processes.

(26) Estimated itemized cost of water facilities to be constructed or expanded.

(b) In addition to the above requirements, the Department of Public Utility Control shall be furnished the proposed owner's plans for the following:

(1) Preparation of adequate rules and regulations for providing water service, including termination of customers for non-payment of bills;

(2) Preparation and administration of a proper metered rate schedule and the rates themselves;

(3) A procedure for handling customer complaints;

(4) A procedure for meter reading and accurate billing of customers;

(5) A listing in the local telephone directory of an emergency and general inquiry telephone number for the customers.

(Effective September 25, 1987)