

APPENDIX A

**SELECT GENERAL STATUTES FROM ARTICLE 10 “NORTH CAROLINA DRINKING WATER ACT”
PERTAINING TO THE REGULATION OF PUBLIC WATER SYSTEMS**

G.S. 130A-315. Drinking water rules; exceptions; limitation on implied warranties.

(a) The Commission shall adopt and the Secretary shall enforce drinking water rules to regulate public water systems. The rules may distinguish between community water systems and noncommunity water systems.

(b) The rules shall:

- (1) Specify contaminants which may have an adverse effect on the public health;
- (2) Specify for each contaminant either:
 - a. A maximum contaminant level which is acceptable in water for human consumption, if it is feasible to establish the level of the contaminant in water in public water systems; or
 - b. One or more treatment techniques which lead to a reduction in the level of contaminants sufficient to protect the public health, if it is not feasible to establish the level of the contaminants in water in a public water system; and
- (3) Establish criteria and procedures to assure a supply of drinking water which dependably complies with maximum contaminant levels and treatment techniques as determined in paragraph (2) of this subsection. These rules may provide for:
 - a. The minimum quality of raw water which may be taken into a public water system;
 - b. A program of laboratory certification;
 - c. Monitoring and analysis;
 - d. Record-keeping and reporting;
 - e. Notice of noncompliance, failure to perform monitoring, variances and exemptions;
 - f. Inspection of public water systems; inspection of records required to be kept; and the taking of samples;
 - g. Criteria for design and construction of new or modified public water systems;
 - h. Review and approval of design and construction of new or modified public water systems;
 - i. Siting of new public water system facilities;
 - j. Variances and exemptions from the drinking water rules; and
 - k. Additional criteria and procedures as may be required to carry out the purpose of this Article.

(b1) The rules may also establish criteria and procedures to insure an adequate supply of drinking water. The rules may:

- (1) Provide for record keeping and reporting.
- (2) Provide for inspection of public water systems and required records.
- (3) Establish criteria for the design and construction of new public water systems and for the modification of existing public water systems.
- (4) Establish procedures for review and approval of the design and construction of new public water systems and for the modification of existing public water systems.
- (4a) Limit the number of service connections to a public water system based on the quantity of water available to the public water system, provided that the number of service connections shall not be limited for a public water system operating in accordance with a local water supply plan that meets the requirements of G.S. 143-355(l).
- (5) Establish criteria and procedures for siting new public water systems.
- (6) Provide for variances and exemptions from the rules.
- (7) Provide for notice of noncompliance in accordance with G.S. 130A-324.

(b2) Two or more water systems that are adjacent, that are owned or operated by the same supplier of water, that individually serve less than 15 service connections or less than 25 persons but that in combination serve 15 or more service connections or 25 or more persons, and that individually are not public water systems shall meet the standards applicable to public water systems for the following contaminants: coliform bacteria, nitrates, nitrites, lead, copper, and other inorganic chemicals for which testing and monitoring is required for public water systems on 1 July 1994. The standards applicable to these contaminants shall be enforced by the Commission as though the water systems to which this subsection applies were public water systems.

(b3) The Department shall not certify or renew a certification of a laboratory under rules adopted pursuant to subdivision (3)b. of subsection (b) of this section unless the laboratory offers to perform composite testing of samples taken from a single public water supply system for those contaminants that the laboratory is seeking certification or renewal of certification to the extent allowed by regulations adopted by the United States Environmental Protection Agency.

(c) The drinking water rules may be amended as necessary in accordance with required federal regulations.

(d) When a person that receives water from a public water system is authorized by the Utilities Commission, pursuant to G.S. 62-110(g), to charge for the costs of providing water or sewer service, that person shall not be subject to regulation under this Article solely as a result of submetering and billing for water service. The supplying water system shall perform the same level of monitoring, analysis, and record keeping that the supplying system would perform if the providing water system had not been authorized to charge for the costs of providing water or sewer service pursuant to G.S. 62-110(g).

(e) When a public water system supplies water through a master meter to a water system not regulated by this Article, the supplying water system is not responsible for operation, maintenance, or repair of the providing water system. The supplying water system shall not be responsible for contamination that is confined to the providing water system if the supplying water system meets applicable requirements for water quality, treatment, and system operation for that contaminant. The supplying water system may monitor the water within the providing water system for contamination pursuant to rules adopted under this Article. The supplying water system and the Department shall have access to the providing water system to investigate water quality problems and to determine whether any contamination is confined to the providing water system and whether the quality of the water supplied by the supplying water system is contributing contamination to the providing water system.

(f) If water in the providing water system exceeds the maximum contaminant levels established pursuant to this Article and the Department determines that the supplying water system is not responsible, the supplying water system must notify the providing water system owner in writing within one day of determining that the contamination is confined solely to the providing water system for bacteria, nitrate, and nitrite, and within 30 days for all other contaminants.

(g) A supplier of water regulated under this Article shall not be deemed to provide any warranty under Article 2 of Chapter 25 of the General Statutes, including an implied warranty of merchantability or an implied warranty of fitness for a particular purpose. (1979, c. 788, s. 1; 1983, c. 891, s. 2; 1985, c. 417, ss. 1, 2; 1991 (Reg. Sess., 1992), c. 826, s. 1; 1993 (Reg. Sess., 1994), c. 776, s. 15; 1995, c. 25, s. 1; 2000-172, s. 1.1; 2001-502, s. 6; 2004-143, s. 8; 2008-140, s. 1.)

G.S. 130A-316. Department to examine waters.

The Department shall examine all waters and their sources and surroundings which are used as, or proposed to be used as, sources of public water supply to determine whether the waters and their sources are suitable for use as public water supply sources. (1979, c. 788, s. 1; 1983, c. 891, s. 2.)

G.S. 130A-318. Disinfection of public water systems.

(a) The Department is authorized to require disinfection of:

- (1) Public water systems introduced on or after January 1, 1972; and
- (2) All public water systems, regardless of the date introduced, whenever:
 - a. The maximum microbiological contaminant level is exceeded; or
 - b. Conditions exist which make continued use of the water potentially hazardous to public health.

(b) Public water systems shall employ disinfection methods and procedures approved by the Department. (1979, c. 788, s. 1; 1983, c. 891, s. 2.)

G.S. 130A-322. Imminent hazard; power of the Secretary.

(a) The Secretary shall judge whether an imminent hazard exists concerning a present or potential condition in a public water system.

(b) In order to eliminate an imminent hazard, the Secretary may, without notice or hearing, issue an order requiring the person or persons involved to immediately take action necessary to protect the public health. A copy of the order shall be delivered by certified mail or personal service. The order shall become effective immediately and shall remain in effect until modified or rescinded by the Secretary or by a court of competent jurisdiction. (1979, c. 788, s. 1; 1983, c. 891, s. 2.)

G.S. 130A-324. Notice of noncompliance; failure to perform monitoring; variances and exemptions.

Whenever a public water system:

- (1) Is not in compliance with the drinking water rules;
- (2) Fails to perform an applicable testing procedure or monitoring required by the drinking water rules;
- (3) Is subject to a variance granted for inability to meet a maximum contaminant level requirement;
- (4) Is subject to an exemption; or
- (5) Fails to comply with the requirements prescribed by a variance or exemption,

the supplier shall as soon as possible, but not later than 48 hours after discovery, notify the Department and give public notification as prescribed by the drinking water rules. (1979, c. 788, s. 1; 1983, c. 891, s. 2.)

G.S. 130A-325. Prohibited acts.

The following acts are prohibited:

- (1) Failure by a supplier of water to comply with this Article, an order issued under this Article, or the drinking water rules;
- (2) Failure by a supplier of water to comply with the requirements of G.S. 130A-324 or the dissemination by a supplier of any false or misleading information with respect to remedial actions being undertaken to achieve compliance with the drinking water rules;
- (3) Refusal by a supplier of water to allow the Department or local health department to inspect a public water system as provided for in G.S. 130A-17;
- (4) The willful defiling by any person of any water supply of a public water system or the willful damaging of any pipe or other part of a public water system;
- (5) The discharge by any person of sewage or other waste above the intake of a public water system, unless the sewage or waste has been passed through a system of purification approved by the Department ; and
- (6) The failure by a person to maintain a system approved by the Department for collecting and disposing of all accumulations of human excrement located on the watershed of a public water system. (1979, c. 788, s. 1; 1983, c. 891, s. 2; 1985, c. 462, s. 2; 1989, c. 727, s. 146.)

G.S. 130A-328. Public water system operating permit and permit fee.

(a) No person shall operate a community or non transient non-community water system who has not been issued an operating permit by the Department. A community or non transient non-community water system operating permit shall be valid from January 1 through December 31 of each year unless suspended or revoked by the Department for cause. The Commission shall adopt rules concerning permit issuance and renewal and permit suspension and revocation. The annual fees in subsection (b) shall be prorated on a monthly basis for permits obtained after January 1 of each year.

(b) The following fees are imposed for the issuance or renewal of a permit to operate a community or non transient non-community water system; the fees are based on the number of persons served by the system:

Non Community Water Systems:	Fee
Base Fee:	
Non transient non-community	\$150
Community Water Systems:	
Number of Persons Served	
50 or fewer	\$255
More than 50 but no more than 100	\$270
More than 100 but no more than 200	\$330
More than 200 but no more than 300	\$350
More than 300 but no more than 400	\$385
More than 400 but no more than 500	\$420
More than 500 but no more than 750	\$780
More than 750 but no more than 1000	\$810
More than 1000 but no more than 2000	\$840
More than 2000 but no more than 3000	\$870
More than 3000 but no more than 4000	\$1350
More than 4000 but no more than 5000	\$1460
More than 5000 but no more than 7500	\$1925
More than 7500 but no more than 10,000	\$2065
More than 10,000 but no more than 25,000	\$2600
More than 25,000 but no more than 50,000	\$2925
More than 50,000 but no more than 75,000	\$4250
More than 75,000 but no more than 100,000	\$4675
More than 100,000 but no more than 250,000	\$5100
More than 250,000 but no more than 500,000	\$5525
More than 500,000	\$5950

(c) The following fees are imposed for the review of plans, specifications, and other information submitted to the Department for approval of construction or alteration of a public water system. The fees are based on the type of constructions or alteration proposed:

Distribution system:	Fee
Construction of water lines, less than 5000 linear feet	\$150
Construction of water lines, 5000 linear feet or more	\$200
Other construction or alteration to a distribution system	\$75
-	
Ground water system:	
Construction of a new ground water system or adding a new well	\$200
Alteration to an existing ground water system	\$100
-	
Surface Water system:	
Construction of a new surface water treatment facility	\$250
Alteration to an existing surface water treatment facility	\$150
Water System Management Plan review	\$75
Miscellaneous changes or maintenance not covered above	\$50

(d) The Department may charge an administrative fee of up to one hundred fifty dollars (\$150.00) for failure to pay the permit fee by January 31 of each year.

(e) All fees collected under this section shall be applied to the costs of administering and enforcing this Article. (1991, c. 576, s. 1; 1991 (Reg. Sess., 1992), c. 811, s. 6; c. 1039, s. 11; 2006-66, s. 11.7(a).)

APPENDIX B

FIGURE 1(a): ALKALINITY VS pH

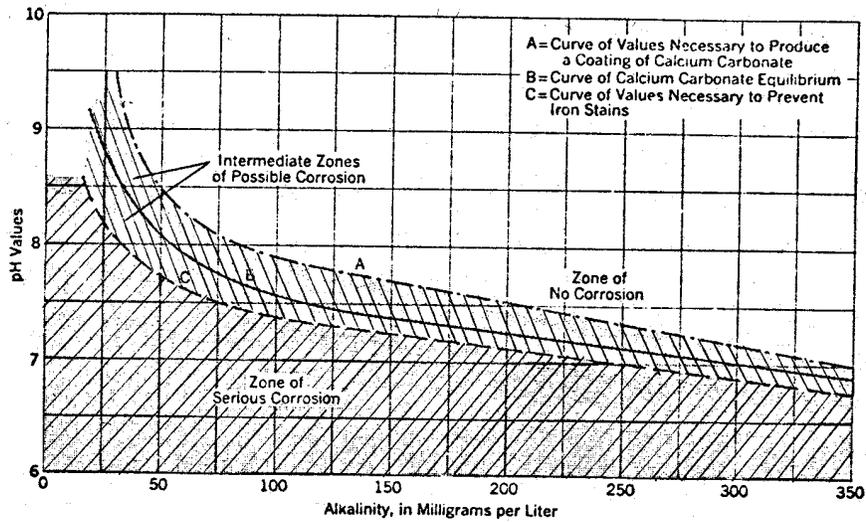
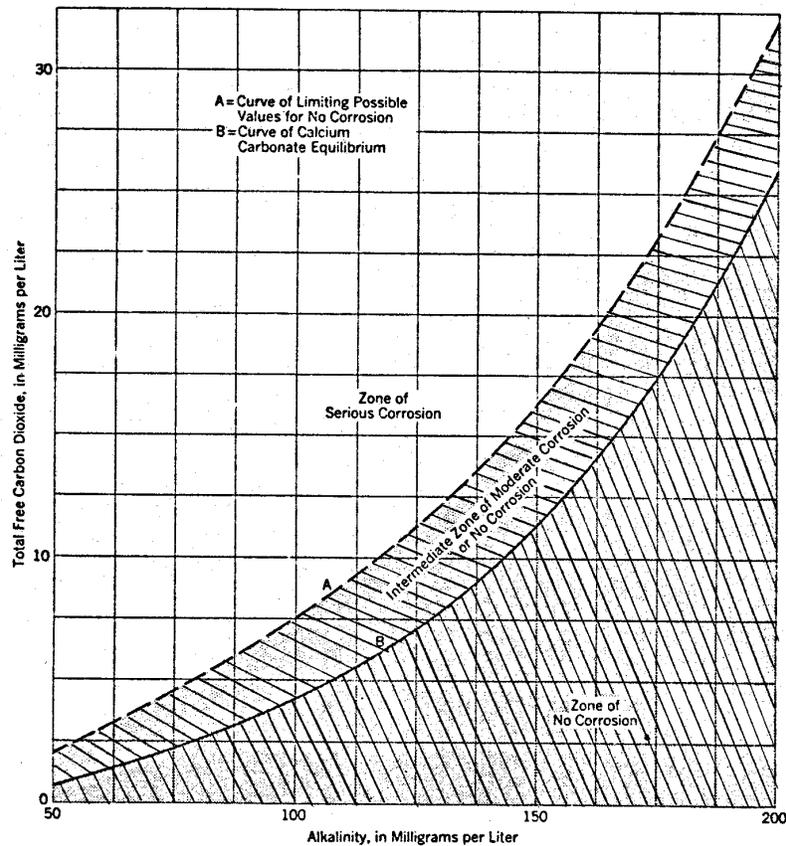


FIGURE 1(B): ALKALINITY VS TOTAL FREE CARBON DIOXIDE



Source of Figures 1(a) and 1(b):

Water Supply and Waste Disposal. Hardenberg, W.A., and Rodie, E.S., International Textbook Co., Scranton, PA 1961.

FIGURE 2: NORTH CAROLINA GUIDELINES CROSS CONNECTION CONTROL IN WATER DISTRIBUTION SYSTEMS

These guidelines are supplemental to Section .0406(b). These guidelines are intended as a minimum requirement. Public water suppliers may adopt more stringent requirements. Each supplier of water shall conform to the minimum requirements established in these guidelines.

I. Degree of Hazard:

- A. Severe: Actual or potential threat of contamination that presents an imminent danger to the public health with consequence of serious illness or death.
- B. Moderate: One that presents foreseeable and significant potential for pollution, nuisance, aesthetically objectionable or other undesirable alterations of the drinking water supply.

II. Backflow Prevention Assembly Requirements:

Degree of hazard	RPZ*	DCVA**	Air Gap
Severe	X	-----	X
Moderate	-----	X	-----

* Reduced pressure zone

** Double check valve assembly

*** This is not intended to be an exhaustive list

(This printed version is corrected from the July 2010 version which erroneously listed all irrigation as high hazard.)

III. Facilities that Require Installation of a Backflow Preventer***:

A. Moderate hazard - DCVA:

1. Fire sprinkler systems without booster pump facilities or chemical additives.
2. Connection to tanks, lines and vessels that handle non-toxic substances.
3. Lawn sprinkler systems without chemical injection or booster pumps.
4. Most commercial establishments.
5. Automatic service stations, bakeries and beauty shops with no health hazard and bottling plants with no back pressure.
6. etc.

B. Severe hazard - RPZ or air gap:

1. Lawn sprinkler systems with chemical injection or booster pumps
2. Wastewater treatment plants
3. Connection to an unapproved water system or unapproved auxiliary water supply
4. Connection to tanks, pumps, lines, steam boilers or vessels that handle sewage, lethal substances, toxic or radioactive substances
5. Fire sprinkler systems with booster pump facilities or chemical additives
6. Buildings with five or more stories above ground level
7. Hospitals and other medical facilities
8. Morgues, mortuaries and autopsy facilities
9. Metal plating facilities
10. Bottling plants (subject to back pressure)
11. Canneries
12. Battery manufacturers
13. Exterminators and lawn care companies

14. Chemical processing plants
15. Dairies
16. Film laboratories
17. Car wash facilities
18. Dye works
19. Laundries
20. Swimming pools
21. Water front facilities
22. etc.

IV. Approved Backflow Prevention Assemblies:

Meets American Society of Sanitary Engineering (ASSE) standard and carries ASSE seal or is on the University of Southern California approval list.

V. Backflow Prevention Assembly Installation:

Backflow prevention assemblies must be located in a place where it is readily accessible for regular testing, maintenance and inspection. Bypass lines parallel to a backflow prevention assembly shall have an approved backflow prevention assembly installed that is equal to that on the main line.

A. RPZ:

1. Above ground installation preferred.
2. Below ground vault shall have positive drainage with adequate gravity drainage to atmosphere.
3. 12 inches minimum clearance from vault walls and floor.
4. Installation in accordance with manufacturer's recommendations.

B. DCVA:

1. Vertical or horizontal installation acceptable.
2. Adequate drainage shall be provided if installed below ground.

FIGURE 3(A): DEMAND WEIGHT OF FIXTURES IN FIXTURE UNIT

Fixture type	Weight in fixture units
Bathtub	4
Bedpan washer	10
Bedit	4
Dental unit or cuspidor	1
Dental laboratory	2
Drinking fountain	2
Kitchen sink	4
Laboratory	2
Laundry tray (1 or 2 compartments)	4
Shower, each head	4
Sink: service	4
Urinal, pedestal	10
Urinal (wall lip)	5
Urinal stall	5
Urinal with flush tank	3
Urinal trough (for every 2 foot section)	2
Wash sink, circular or multiple (each set of faucets)	2
Water closet: F.V.	10
Water closet: tank	5

FIGURE 3(B): EXAMPLE – FIXTURE UNITS AND ESTIMATED DEMANDS

Kind of Fixtures	Building Supply		
	No. of Fixtures	Fixture Units	Demand (gallons per minute)
Water closets	130	1,300	
Urinals	30	150	
Shower heads	12	48	
Laboratories	130	260	
Service sinks	27	81	
TOTAL		1,839	310

FIGURE 3(C): ESTIMATE CURVES FOR DEMAND LOAD

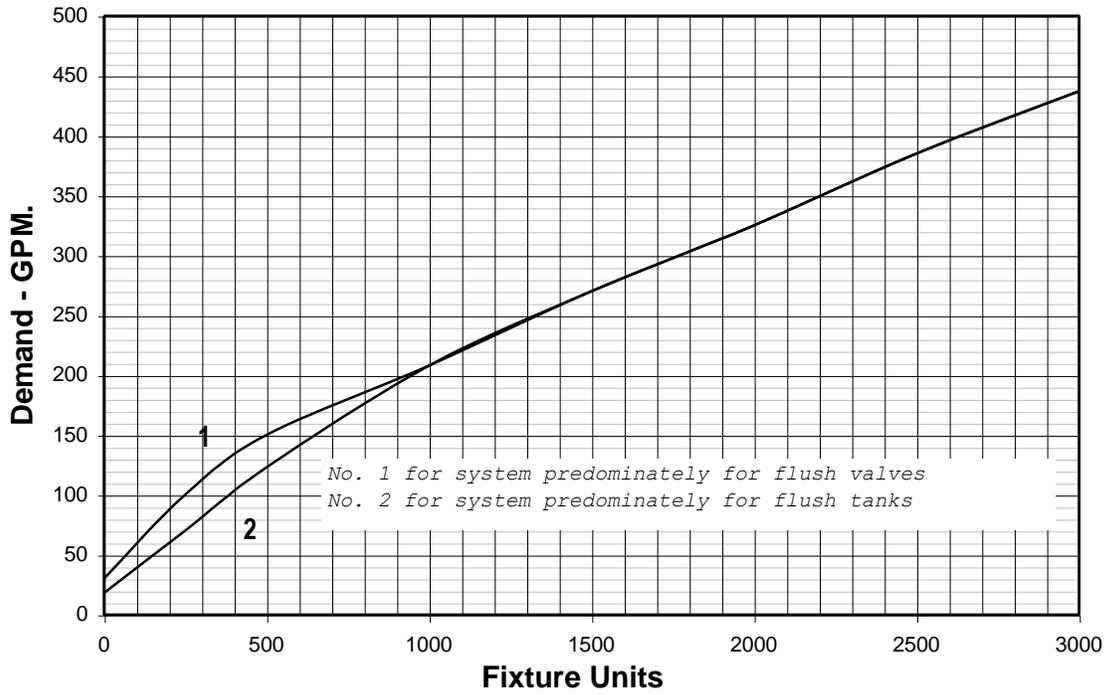


FIGURE 3(D): ENLARGED SCALE DEMAND LOAD

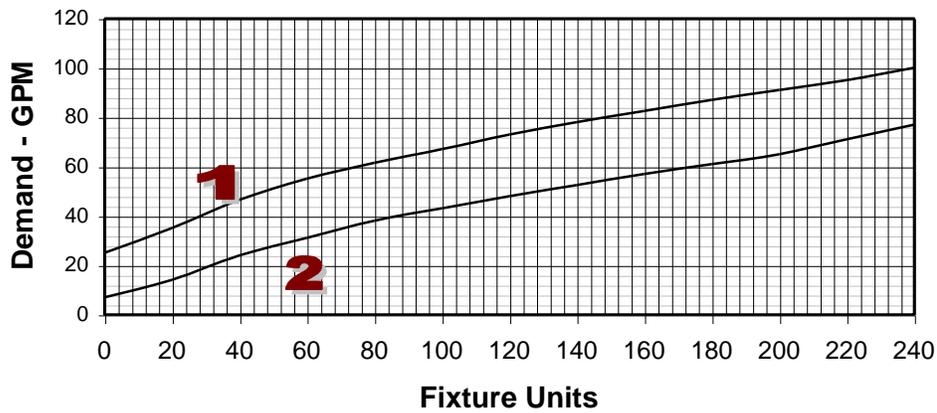
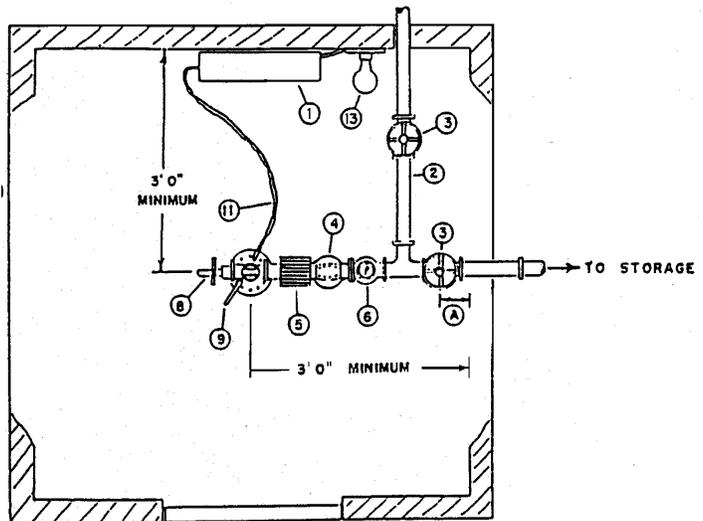


FIGURE 4: TYPICAL WELL HEAD DETAILS

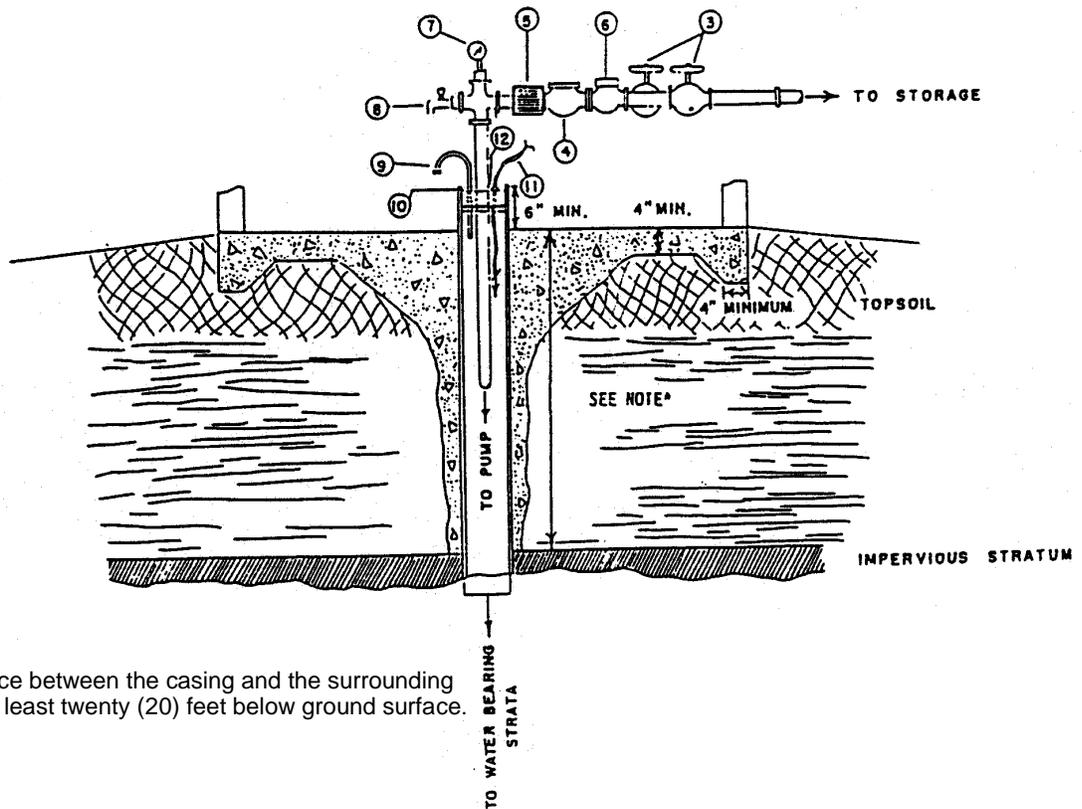
LEGEND

1. Control box
2. Blow off line
3. Gate valve
4. Check valve
5. dresser coupling (or union)
6. Meter
7. Pressure gauge (w/needle valve)
8. Sample faucet (non-threaded)
9. Screened vent
10. Sanitary well seal
11. Electrical conduit
12. Electrical cable seal
13. Electrical lighting



NOTES

- A. Leave clearance between wall and valve for turn
- B. Slope ground surface away from slab
- C. Grout around casing to impervious stratum (50' min. depth)
- D. Slope floor to drain
- E. Provide hatch in roof above well casing.



NOTE*

Grout the annular space between the casing and the surrounding soil to a distance of at least twenty (20) feet below ground surface.

FIGURE 5: PRESSURE & VOLUME DIFFERENTIALS FOR HYDROPNEUMATIC TANKS

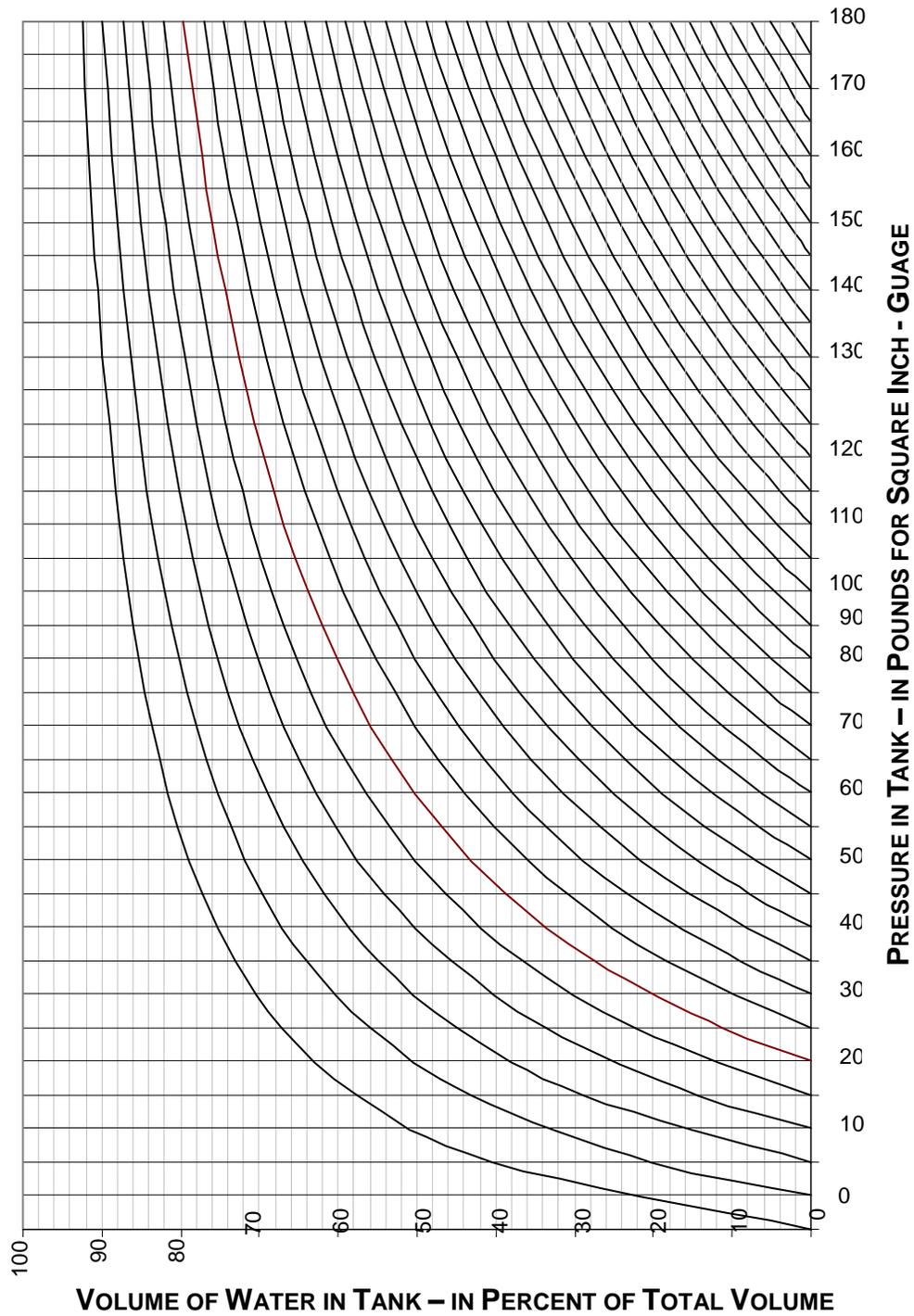


FIGURE 6: VOLUME OF HYDROPNEUMATIC TANKS

The following examples are offered in further explanation of the requirements for proper sizing of hydropneumatic tanks. As previously indicated, it is required to supply the indicated peak demand for a period of twenty minutes, and it is assumed that a combination of hydropneumatic storage and pumping will be utilized. The Effective Volume of the tank is considered to be the volume of water discharged between the high and low pressure setting.

$$\text{Required Effective Volume} = (\text{Peak Demand} - \text{Pumping Capacity}) \times 20 \text{ minutes}$$

For example, a mobile home system to serve 50 spaces and having a pumping capacity of 30 gpm would require an effective volume of:

$$\text{Req'd. Effective Volume} = (\text{Peak Demand} - \text{Pumping Capacity}) \times 20 \text{ minutes} = (60-30) \times 20 = 600 \text{ gallons}$$

(For peak demands, see Rule .0802)

The actual tank size required to furnish the 600 gallons effective volume depends upon the pressure settings, air-water volume controls, etc. A system without controls would require the largest tank, whereas a system with air charging device and automatic air-water volume controls would require a much smaller tank.

The curves indicating air-water volume relationships shown in Figure 5 may be utilized to determine required tank sizes.

Continuing the above example, assume further that it is necessary to operate the tank on a 60-40 psi pressure cycle, and assume that the tank has no air-water volume controls and was not precharged. These conditions are indicated by the top curve in Figure 5 since this curve passes through the 0% water – 100% air point.

At 60 psi, water volume:	80%
At 40 psi, water volume:	73%

Therefore, the percent water volume discharges during the 60-40 psi cycle is 80-73%=7% of the total tank volume. The total volume of a tank necessary to produce the required effective volume of 600 gallons:

$$\text{Total Volume} = \frac{600}{0.07} = 8570 \text{ gallons}$$

The tank size can also be determined by direct calculation rather than by using Figure 5. By using the principle of Boyle's Law and assuming the effects of temperature to be negligible, the tank is sized accordingly.

Continuing the above example and converting the pressure to Absolute (gauge + 14.7 psi), the volume is calculated as follows:

If there is no water (100% air) in the tank originally and it is filled with water until a pressure of 60 psi gauge is reached, the volume of air at that point is:

$$P_1V_1 = P_2V_2$$

$$\text{Vol.}_2 \frac{P_1V_1}{P_2} = \frac{(0 + 14.7 \text{ psi}) \times (100)}{(60 + 14.7 \text{ psi})} = 19.7\% \text{ (air)}$$

On a 60-40 psi cycle, the tank would discharge to a pressure of 40 psi, and the air volume would be:

$$\text{Vol.}_3 \frac{P_2V_2}{P_3} = \frac{(60 + 14.7 \text{ psi}) \times (19.7\%)}{(40 + 14.7 \text{ psi})} = 26.9\% \text{ (air)}$$

The percent volume of water discharged during the 60-40 cycle is:

Percent volume: $26.9 - 19.7 = 7.2\%$

The total tank volume necessary to produce the required effective volume of 600 gallons is:

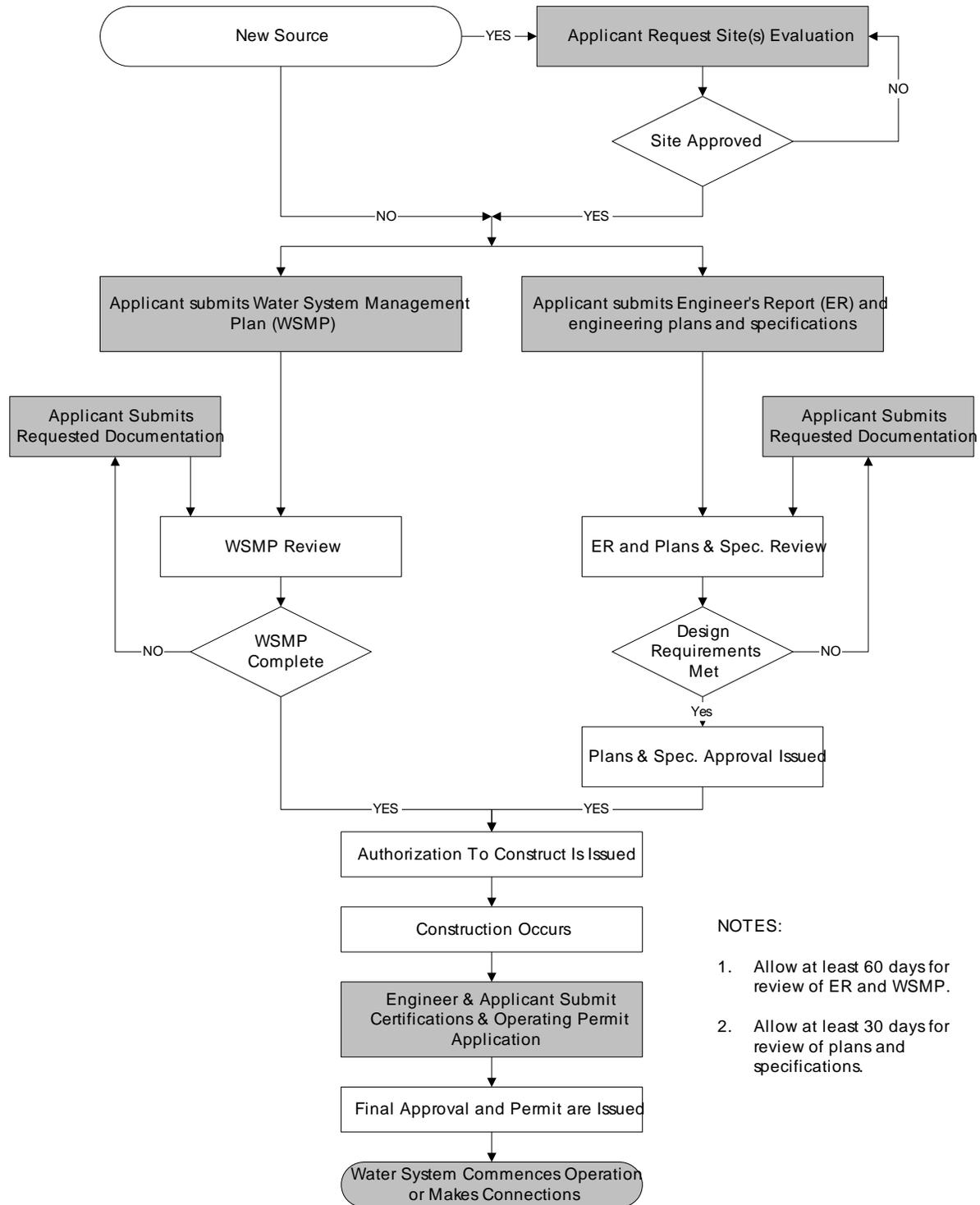
$$\text{Total Volume} = \frac{600 \text{ gal.}}{0.072} = 8330 \text{ gallons}$$

By utilizing an air charging system with automatic air-water volume controls, it is possible to discharge up to 25% of the tank volume during a 60-40 psi pressure cycle. The total tank volume necessary to furnish the required effective volume in this case would be:

$$\text{Total Tank Volume} = \frac{\text{Required Effective Volume (gallons)}}{0.25}$$

APPENDIX C

APPROVAL PROCESS FLOW CHART





State of North Carolina Department of Environment and Natural Resources

APPLICANT CERTIFICATION FORM

In accordance with 15A NCAC 18C .0303 (c), a signed applicant certification must be submitted to the Department, stating that the Operation and Maintenance (O&M) Plan and the Emergency Management Plan requirements have been satisfied and that the system will have a certified operator as required by Section .1300. No construction, alteration, or expansion of a community or non-transient, non-community public water system shall be placed into final service or made available for human consumption until the applicant has submitted the certification and has received Final Approval from the Department.

Certification must be provided by the following individual or their duly authorized representative:

1. For a corporation, limited liability company, home owner association or non-profit organization: *a president, vice president, secretary, or treasurer.*
2. For a partnership or sole proprietorship: *by a general partner or the proprietor.*
3. For a municipality, State, Federal or other agency: *by either a principal executive officer or ranking elected official.*

By the signature below I certify, under penalty of law:

1. The following actions have been completed for the construction, alteration, or expansion of the water system, as defined in the project documents;
 - I, or personnel under my direct supervision, have completed an O&M Plan and an Emergency Management Plan in accordance with 15A NCAC 18C .0307(d) and (e). Based on my evaluation of the plans, or my inquiry of the person or persons directly responsible for preparing the O&M Plan and Emergency Management Plan, the information contained in the plans is, to the best of my knowledge and belief, true, accurate, and complete.
2. The following actions will be completed before the construction, alteration, or expansion of the water system, as defined in the project documents is placed into final service or made available for human consumption;
 - In accordance with 15A NCAC 18C .0307(d), the O&M Plan will be made accessible to the system operator on duty at all times and available to the Department upon request.
 - In accordance with 15A NCAC 18C .0307(e) the Emergency Management Plan will be made accessible to the system operator on duty at all times and available to the Department upon request.
 - In accordance with 15A NCAC 18C .0303(c), the system will have a certified operator as required by 15A NCAC 18C .1300.

Signature: _____

Name (Print): _____

Title: _____

Date: _____

Project Name: _____

System Name: _____

Serial No: _____

PWS I.D. No: _____

**MAIL TO: Capacity Development Engineer, Public Water Supply Section
1634 Mail Service Center, Raleigh, North Carolina 27699-1634**

[See current agency name, location and mailing address under "Notes" on first page of this document.]



**State of North Carolina
Department of Environment and Natural Resources**

WATER SYSTEM MANAGEMENT PLAN CERTIFICATION

All persons, including units of local government, intending to construct, alter, or expand a community water systems or new non-transient, non-community water systems must develop and submit a Water System Management Plan (WSMP) completed in accordance with North Carolina Rules 15A NCAC 18C .0307(c). The WSMP must include certification that the information in the WSMP is true, accurate, and complete. No construction may be undertaken and no contract for construction, alteration or installation may be entered into until the Department issues an Authorization to Construct letter. This authorization requires the completion and submittal of the Engineer’s Report and Water System Management Plan and approval of the engineering plans and specification by the Department.

The signature below will certify that a WSMP has been completed in accordance with 15A NCAC 18C .0307(c), and that the information in the WSMP is true, accurate, and complete.

Certification must be provided by the following individual or their duly authorized representative:

1. For a corporation, limited liability company, home owner association or non-profit organization: *a president, vice president, secretary, or treasurer.*
2. For a partnership or sole proprietorship: *by a general partner or the proprietor.*
3. For a municipality, State, Federal or other agency: *by either a principal executive officer or ranking elected official.*

I certify, under penalty of law, that I, or personnel under my direction or supervision, have completed a WSMP in accordance with 15A NCAC 18C .0307(c). Based on my evaluation of the plan, or my inquiry of the person or persons directly responsible for preparing the WSMP, the information contained in the WSMP is, to the best of my knowledge and belief, true, accurate, and complete.

Signature: _____ Name (Print): _____

Title: _____ Date: _____

Project Name: _____ System Name: _____

Serial No: _____ PWS I.D. No: _____

APPENDIX D

CHAPTER 01 - DEPARTMENTAL RULES**SUBCHAPTER 01N - DRINKING WATER STATE REVOLVING FUND RULES****SECTION .0100 - GENERAL PROVISIONS****15A NCAC 01N .0101 PURPOSE**

Loans for public water systems from the Drinking Water State Revolving Fund established by the Water Infrastructure Act S.L. 2005-454 (HB 1095) shall be made in accordance with this Subchapter.

*History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.*

15A NCAC 01N .0102 DEFINITIONS

The following definitions shall apply to this Subchapter:

- (1) "Act" means the N.C. Drinking Water Act, G.S. 130A-311 et. seq;
- (2) "Division" means the Division of Environmental Health, Department of Environment and Natural Resources;
- (3) "Fund" means the Drinking Water State Revolving Fund established by G.S. 159G-22;
- (4) "Intended Use Plan" (IUP) means an annual plan to identify the proposed uses of the amount available in the Fund;
- (5) "MCL" means maximum contaminant level which is the permissible level of a contaminant in water which is delivered to any user of a public water system; and
- (6) "Receiving agency" means the Division.

*History Note: Authority G.S. 159G-2; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.*

15A NCAC 01N .0103 APPLICABLE PROCEDURES

Loans from the Fund shall be made in accordance with 40 CFR Part 9 and 35, Subpart L which are hereby incorporated by reference including any subsequent amendments and additions. This material is available for inspection at the Department of Environment and Natural Resources, Division of Environmental Health, 2728 Capital Boulevard, Raleigh, North Carolina. [See current agency name, location and mailing address under "Notes" on first page of this document.] Free copies may be obtained from the U.S. Environmental Protection Agency by telephoning 1-800-426-4791. Copies are also available on-line at <http://www.deh.enr.state.nc.us/pws/srf/rules/072506-operating-agreement.doc> and <http://www.epa.gov/fedrgstr/EPA-WATER/2000/August/Day-07/w19783.htm>.

*History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.*

SECTION .0200 - AVAILABILITY OF LOANS**15A NCAC 01N .0201 AVAILABILITY OF LOANS**

- (a) Loans shall be available only for projects that appear on the state approved intended use plan submitted to the U.S. Environmental Protection Agency and that comply with the requirements of this Subchapter.
- (b) Proposed projects may be added to the IUP to address emergency situations. The qualifying criteria is that a serious public health hazard or a drought emergency is present or imminent for a public water supply system. Such actions will be reported in the Annual Report.
- (c) Fifteen percent of the annual allocation shall be available to public water systems which regularly serve fewer than 10,000 persons to the extent such funds can be obligated in accordance with Rule .0701 of this Subchapter.

(d) During any fiscal year a maximum of five percent of the annual allocation may be used for loans for project planning purposes only.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008; August 1, 2004.

15A NCAC 01N .0202 LOANS RESTRICTIONS

- (a) Loans shall not be used for the acquisition of real property or interests therein, unless the acquisition is integral to a project authorized under this Subchapter and the purchase is from a willing seller.
- (b) Except as provided in Paragraph (c) of this Rule no assistance shall be provided to a public water system that does not have the technical, managerial, and financial capacity to ensure compliance with the requirements of the Act or to a public water system that is in significant non-compliance with any requirement of the Act or with a variance authorized under the Act as evidenced by administrative penalty, administrative order or court action against the water system. A determination of technical, managerial, and financial capacity shall be based upon a review of finances; compliance with applicable public health, environmental and utility laws; and the experience and certification level of the water system operator as evidenced by the submission of a water system management plan as required by Section .0400 of this Subchapter.
- (c) A public water system in significant non-compliance with the Act may receive assistance if the assistance shall ensure compliance with the Act. A public water system that does not have technical, managerial, and financial capacity may receive assistance if the owner or operator shall agree to undertake changes in operation of the water system that will ensure the system will achieve technical, managerial, and financial capacity over the long-term.
- (d) Each applicant shall establish a dedicated source of revenue or demonstrate that there is adequate security for repayment of the loan.
- (e) Funding shall be limited to the most cost-effective solution for the compliance or public health problem identified in a proposed project.
- (f) Funding shall be limited to the eligible portions of a project containing ineligible segments.
- (g) Funding shall not be available for federally owned public water systems.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0203 ADMINISTRATIVE EXPENSES

Agreement to a debt instrument by a loan applicant shall include payment of a two percent administrative fee which is an eligible project cost. These monies shall accrue to be used only for the reasonable costs of administering the Fund.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

SECTION .0300 - ELIGIBILITY REQUIREMENTS

15A NCAC 01N .0301 DETERMINATION OF ELIGIBILITY

- (a) Eligibility of applicants shall be determined in accordance with G.S. 159G-31.
- (b) Applications shall be returned to ineligible applicants.
- (c) An application may not be filed after the award of a construction contract on a project, except when an applicant is subject to an administrative order or deadline issued by the Division or the project qualifies as an emergency situation.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0302 ELIGIBLE PROJECTS

(a) Projects that will facilitate compliance with the North Carolina Drinking Water Act or federal Safe Drinking Water Act or further health protection under the criteria of Rule .0602 of this Subchapter shall be eligible for funding under this Subchapter. Eligible projects include those that:

- (1) Rehabilitate or develop sources to replace contaminated sources of drinking water;
- (2) Install or upgrade treatment to meet state or federal regulations;
- (3) Install or upgrade eligible storage to prevent entry of microbiological contamination;
- (4) Install or replace transmission or distribution pipes to prevent contamination;
- (5) Consolidate or restructure water systems; or
- (6) Purchase capacity in another water system.

(b) Types of projects which are not eligible for funding are:

- (1) Dams or rehabilitation of dams;
- (2) Water rights, except if the water rights are owned by a system that is being purchased through consolidation as part of a capacity development strategy;
- (3) Reservoirs, except for finished water reservoirs and those reservoirs that are part of treatment process and are located on the property where the treatment facility is located;
- (4) Laboratory fees for monitoring;
- (5) Operation and maintenance expenses;
- (6) Projects needed mainly for fire protection; or
- (7) Projects primarily intended to serve future growth.

History Note: Authority G.S. 159G-5; 159G-1;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

15A NCAC 01N .0303 ELIGIBLE PROJECT COSTS

(a) Project construction costs eligible for a loan under this Subchapter are limited to:

- (1) Planning, including system and needs assessment, the preparation of a local water supply plan and the preparation of a water system management plan;
- (2) Environmental assessment reports, including all federal cross-cutters;
- (3) Design;
- (4) Construction;
- (5) Legal, fiscal, and administrative costs;
- (6) Contingency costs; and
- (7) Land acquisition integral to the project and acquired from a willing seller.

(b) Loans may be up to 100 percent of allowable construction project costs.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0304 MAXIMUM LOAN AMOUNT

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Repealed Eff. August 1, 2004.

SECTION .0400 – APPLICATIONS**15A NCAC 01N .0401 FILING DEADLINES**

Complete applications for loans shall be postmarked or delivered to the Division of Environmental Health on or before September 30 of each year in order to be considered for loan funds available during the following fiscal year except those applications for emergency projects as defined in Rule .0201(b) of this Subchapter may be submitted at any time.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0402 APPLICATION PROCEDURES

- (a) Applications for loans shall be submitted on forms provided by the Division and shall be accompanied by all documents such as the Preliminary Engineering Report (PER), assurances, and other information required by the instructions for completing and filing the applications. Information concerning any grant or loan funds from any other source for which the applicant has applied shall be disclosed on the application.
- (b) Every application shall be accompanied by an adopted resolution or other documentation as required by G.S. 159G-37. The resolution or documentation shall be certified or attested to as a true and correct copy as adopted.
- (c) An applicant shall furnish additional information upon the request of the Division as required by these Rules.
- (d) A project shall not receive a priority rating unless the application contains sufficient information on the day of rating for the receiving agency to review and assign priority points.
- (e) An application may be withdrawn from consideration upon request of the applicant but if it is resubmitted it shall be considered as a new application subject to Rule .0401 of this Subchapter.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0403 PROJECT SCHEDULE AND RESOLUTION

History Note: Authority G.S. 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Repealed Eff. February 1, 2008.

SECTION .0500 - REVIEW AND ASSIGNMENT OF PRIORITIES**15A NCAC 01N .0501 PRIORITY REVIEW PERIOD**

The priority review period shall be from October 1 until June 30 of the following year.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

15A NCAC 01N .0502 ASSIGNMENT OF PRIORITIES

- (a) During each review period the Division shall assign a priority rating to each eligible application for inclusion in the state intended use plan; the priority rating shall be determined in accordance with the rating criteria and points established pursuant to G.S. 159G-35.
- (b) The Division may establish a priority rating when two or more applications receive the same number of priority points. The project receiving more points for affordability shall receive the higher priority. If the affordability points awarded the projects are equal, the project with the smaller population shall receive the greater priority.
- (c) Only the eligible portions of a project shall receive a priority rating.
- (d) The Division may assign a different priority rating to each substantially independent part of a proposed project.
- (e) Any applications that are not awarded assistance during a review period shall be held over and considered for a second review in accordance with G.S. 159G-39(c).

History Note: Authority G.S. 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0503 INTENDED USE PLAN

A state intended use plan containing the priority rating of each eligible project will be prepared by the Division. The intended use plan shall include a comprehensive priority list identifying which projects are intended to be funded in the current year and in future years. The projects that are expected to be funded in the current year shall be so noted. The priority rating of eligible projects shall be published and an opportunity for public hearing will be provided before funds are awarded.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

SECTION .0600 - PRIORITY CRITERIA

15A NCAC 01N .0601	GENERAL CRITERIA
15A NCAC 01N .0602	PUBLIC HEALTH AND COMPLIANCE
15A NCAC 01N .0603	CONSOLIDATION
15A NCAC 01N .0604	RELIABILITY
15A NCAC 01N .0605	AFFORDABILITY
15A NCAC 01N .0606	SOURCE PROTECTION AND MANAGEMENT

History Note: Authority G.S. 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. August 1, 2004;
Repealed Eff. February 1, 2008.

THIS ENTIRE SECTION HAS BEEN REPLACED BY THE FOLOWING INFORMATION FOUND IN SECTION S OF THE OPERATING AGREEMENT

- 1) PRIORITY CRITERIA. As authorized by NC S.L. 2005-454 Section 159G-35, see:
<http://www.ncleg.net/Sessions/2005/Bills/House/HTML/H1095v5.html>
<http://www.ncleg.net/enactedlegislation/statutes/pdf/bysection/chapter159g/gs159g-35.pdf>, the following criteria apply to projects funded by the NCDWSRF:
 - a) GENERAL CRITERIA
 - i) In determining the priority to be assigned each eligible application, the Division shall consider whether the project will:
 - (1) Address the most serious risk to human health,
 - (2) Facilitate compliance with the N.C. Drinking Water Act or the federal Safe Drinking Water Act, and
 - (3) Assist systems most in need on a per household basis.
 - ii) The total priority points received shall be the sum of all points awarded for each categorical element.
 - b) PUBLIC HEALTH AND COMPLIANCE

Public health and compliance points may be awarded to a project based on the following criteria. A proposed project shall be necessary to facilitate compliance with the N.C. Drinking Water Act or the federal Safe Drinking Water Act and to alleviate the type of public health concern for which points are awarded. A project shall receive only points in the highest sub-category for which it may qualify:

 - i) Applications will be assigned a category as follows:
 - (1) All applications for a project that eliminates by consolidation/dissolution a public water system demonstrating a lack of technical, financial, and/or management capacity in accordance with the Safe Drinking Water Act, Sections 1402(b)(1) and 1414(h), and NCAC 15A 18C .0300, shall be placed in Category 1. The Division may generate the application for such a project.
 - (2) All applications for a project that eliminates compliance problems due to existing violations of the NC Drinking Water Act or anticipated violations based on data and state or federal rulemaking shall be placed in Category 2.
 - (3) All applications for a project addressing source or treatment needs by improving the available water supply or treatment capacity to supply existing users, improving treated water quality, or providing a permanent or emergency interconnection between systems shall be placed in Category 3.
 - (4) All other eligible public water system projects shall be placed in Category 4.
 - ii) All applications in Category 1 will be funded in priority order before applications in Category 2. Similarly all applications in Category 2 will be funded in priority order before

applications in Category 3, and all applications in Category 3 will be funded in priority order before applications in Category 4.

c) **RELIABILITY**

A maximum of five points shall be awarded in the reliability categorical element to projects that propose to increase the reliability of the water system; points may be awarded for both Items (i) and (ii) up to the maximum, as follows:

- i) Projects that provide redundancy to critical treatment or delivery functions, such as interconnection, but excluding projects that provide emergency backup electrical power source, three points;
- ii) Projects that provide emergency backup electrical power source, three points.

d) **AFFORDABILITY**

Points for affordability shall be determined by comparing the projected monthly residential user cost at the completion of the project with the median household income (MHI). User cost shall be calculated from water rates based on a maximum of 4,500 gallons. The median household income shall be determined in the service area of the water system. If median household income data is not available for the service area, data from the nearest comparable community area shall be used. The Division may use countywide median household income data if data for the service area or nearest comparable community area are not available. Points shall be awarded on the following scale:

Rates = 0% to .25% MHI	0 points
Rates = 0.26% to .50% MHI	5 points
Rates = .51% to .75% MHI	20 points
Rates = .76% to 1.0% MHI	40 points
Rates = 1.01% or greater MHI	50 points

e) **SOURCE PROTECTION AND MANAGEMENT**

The maximum value to be given for source protection and management categorical elements is 15 points. Points shall only be awarded for existing activities or programs that efficiently protect the public health, as follows:

- i) Participation in source water protection activities; points may be awarded in Sub-Items (1) and (2) of this Item up to the maximum, as follows:
 - (1) Voluntary surface Source Water Protection program approved by the Division, pursuant to the Safe Drinking Water Act, Section 1454, five points, or
 - (2) Voluntary wellhead protection program approved by the Division, pursuant to the Safe Drinking Water Act, Section 1428, five points.
- ii) Efficient water use, as shown by the applicant's establishment and administration of the described programs; points may be awarded in Sub-Items (1), (2), and (3) of this Item up to the maximum, as follows:
 - (1) Water loss reduction program, which includes water audits, comprehensive metering, and hidden leak detection, three points;
 - (2) Cross-connection control program, three points;
 - (3) Demand management strategies, such as a water conservation incentive rate structure, incentives for new or replacement installation of low flow faucets, showerheads and toilets, or a water reclamation or reuse system, three points per strategy.

f) **PROJECT PLANNING**

The maximum value – three points, the value of this categorical element is the sum of the points awarded to Item (i) and the points assigned to Item (ii):

- i) The project is compatible with the State Water Supply Plan and the applicable local water supply facility plan submitted under G.S. 143-355(1), one point.
- ii) The project demonstrates long range planning, through inter-local agreements, leading to systems of regional water supply, two points.

SECTION .0700 - AWARD, COMMITMENT AND DISBURSEMENT OF LOANS**15A NCAC 01N .0701 DETERMINATION OF AWARDS AND BYPASS PROCEDURES**

(a) All funds appropriated for a fiscal year and all other funds accruing from loan principal repayments, interest payments, interest earned on funds, excess funds not awarded in the previous priority review period, and any other source shall be available for loans during the priority review period.

(b) The funds available in a priority review period shall be awarded in the form of a binding commitment in descending order of priority rating upon EPA approval of that IUP considering Rule .0201 of this Subchapter to those eligible projects that are ready to proceed. A project is defined as ready to proceed when the following conditions have been met:

- (1) Project plans and specifications are approved by the Division;
- (2) Any environmental review required is complete;
- (3) One hundred percent funding necessary for the project is committed; and
- (4) Authorization To Construct is issued by the Division.

(c) Except as provided in Paragraph (d) of this Rule, the maximum principal amount of loan commitment from any fiscal year's allocation made to an applicant shall be three million dollars (\$3,000,000) for a construction project or twenty-five thousand dollars (\$25,000) for project planning purposes.

(d) Any funds remaining after the initial allocation of Paragraphs (b) and (c) of this Rule shall be awarded in descending order of priority rating to those eligible projects in any approved IUP subject to the limitation of Paragraph (c) of this Rule for each 'pass' through the remaining available funding.

History Note: Authority G.S. 159G-36;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008; August 1, 2004.

15A NCAC 01N .0702 CERTIFICATION OF ELIGIBILITY

(a) The receiving agency shall create a certificate of eligibility for each applicant for which a loan has been made.

(b) The certificate of eligibility shall indicate that the applicant meets all eligibility criteria and that all other requirements of the Act have been met.

(c) The certificate of eligibility shall also indicate the amount and the fiscal year of the loan commitment.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

15A NCAC 01N .0703 CRITERIA FOR LOAN ADJUSTMENTS

Upon receipt of bids, a loan commitment may be adjusted as follows:

- (1) The loan commitment may be decreased by the receiving agency provided; the project cost as bid is less than the estimated project cost;
- (2) The loan commitment may be increased a maximum of 10 percent by the receiving agency provided: the project cost as bid is greater than the estimated project cost; the project as bid is in accordance with the project for which the loan commitment was made; the receiving agency has reviewed the bids and determined that substantial cost savings would not be available through project revisions without jeopardizing the integrity of the project; and adequate funds are available in the Fund. Increases greater than 10 percent of the loan commitment require approval by the Local Government Commission.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

15A NCAC 01N .0704 DISBURSEMENT OF LOANS

(a) Disbursement of loan monies shall be made at intervals as work progresses and expenses are incurred. No disbursement shall be made until the receiving agency receives documentation of incurred costs. At no time shall disbursement exceed the allowable costs which have been incurred at that time.

(b) No disbursement shall be made until the receiving agency receives documentation of compliance with applicable federal and state laws.

(c) The receiving agency shall authorize the Controller's Office of the Department of Environment and Natural Resources to make loan disbursements.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0705 TERMINATION OF LOANS

Loan commitments may be terminated by the receiving agency when recipients do not meet project schedules, if they fail to award contracts within one year, or if they fail to comply with applicable federal requirements.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

SECTION .0800 - LOAN REPAYMENTS

15A NCAC 01N .0801 INTEREST RATES

The interest rate to be charged on loans under this Subchapter shall be set in each priority review period at the lesser of four percent per annum or one half the prevailing national market rate as derived from the Bond Buyer's 20-Bond Index in accordance with G.S. 159G-40.

History Note: Authority G.S. 159G-22; 159G-35; 159G-44;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.

15A NCAC 01N .0802 REPAYMENT OF PRINCIPAL AND INTEREST

(a) The debt instrument setting the terms and conditions of repayment of loans under this Subchapter shall be established after the receipt of bids. Adjustments to the loan may be made only under Rule .0703 of this Subchapter.

(b) The maximum maturity on any construction loan shall not exceed 20 years.

(c) The maximum maturity on any project planning loan shall not exceed five years.

(d) Interest on the debt instrument shall begin to accrue on the original date that a project's contracts are scheduled to be completed. Extensions of this deadline are not allowed.

(e) All principal payments shall be made annually on or before May 1 or November 1. The first principal payment is due not earlier than six months after the date of completion of the project.

(f) All interest payments shall be made semiannually on or before May 1 and November 1 of each year. The first interest payment is due not earlier than six months after the date of completion of the project.

(g) All principal and interest payments shall be made payable to the Fund.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

SECTION .0900 - INSPECTION AND AUDIT OF PROJECTS

15A NCAC 01N .0901 INSPECTION

Inspection of a project to which a loan has been committed may be made by the receiving agency to determine the percentage of completion of the project for disbursements, and for compliance with all applicable laws and rules.

History Note: Authority G.S. 159G-5; 159G-15;
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999.

15A NCAC 01N .0902 AUDIT

All projects to which a loan has been committed shall be audited in accordance with G.S. 159G-35 and G.S. 159-40.

History Note: Authority G.S. 159G-22(c);
Temporary Adoption Eff. January 31, 1998;
Eff. April 1, 1999;
Amended Eff. February 1, 2008.