

**Town of North Yarmouth
Select Board/Planning Board Workshop Agenda
Tuesday, October 24, 2023
Joint Workshop
Proposed Land Use Ordinance
6:00 PM
Wescustogo Hall & North Yarmouth Community Center**

Select Board Members

Amy Haile, Chairperson
Andrea Berry, V. Chairperson
Karl Cyr, Selectperson
Paul Hodgetts, Selectperson
Katherine Maloney, Selectperson

Planning Board Members

Paul Whitmarsh, Chair/Alternate
Jeffrey Brown, Secretary
Trey, Milam
Jonathan Miller
Sanford Peabody
Alex Urquhart, Alternate

1. New Business

A. Advance Wastewater Systems-Proposed LUO

2. Adjournment

Section 11.11.H Advanced Wastewater Disposal Systems (Where Required)

A. Purpose and Applicability: The purpose of this section is to ensure required Advanced Wastewater Disposal Systems function as designed. Applicable to all uses in LUO table 7.2 requiring the use of served by Advanced Wastewater Disposal systems, as defined.

B. Standards and Requirements:

1. Nitrogen removal

a. Advanced wastewater treatment systems shall employ a denitrification process and a nitrogen removal capacity that meets the standards of NSF 245.

2. Form HHE-300

a. Owners of a new dwelling unit or other use constructed, expanded, enlarged, rebuilt, or replaced on constructed on or after the effective date of this amendment that is served by an advanced wastewater disposal system shall prepare, execute, and record in the Cumberland County Registry of Deeds a Pre-treatment Maintenance Agreement form and the approved Form HHE-300, prepared by Maine Department of Health and Human Services, Maine Center for Disease Control and Prevention).

b. The owner shall provide a copy of the recorded HHE-300 with recording information to the CEO prior to receiving a certificate of occupancy for the dwelling unit.

c. Replacement or expansion of an advanced wastewater treatment system, or replacing a traditional subsurface wastewater disposal system with a new Advanced Wastewater Disposal System shall require the owners of the dwelling unit to complete and record a new Form HHE-300, and to submit a copy of the recorded Form and a copy of new and replacement or extension maintenance agreements as provided above to the CEO within 14 days from the date of installation of the replacement advanced wastewater treatment system.

3. Maintenance Agreement

a. Systems will be required to operate within manufacturer specifications for the duration of the lifetime of the system.

b. Owners of a dwelling unit or other use constructed, expanded, enlarged, rebuilt, or replaced on or after the effective date of this amendment that is served by an advanced wastewater treatment system also shall provide a copy of an executed maintenance agreement for maintenance and repair of the advanced wastewater treatment system per manufacturer to the CEO prior to receiving a certificate of occupancy, in accordance with the requirements of that system's manufacturer to the CEO prior to receiving a certificate of occupancy for the dwelling unit and they shall enter into replacement or extension maintenance agreements for the duration of the lifetime of that advanced wastewater treatment system, copies of which shall be provided d to the CEO.

c. Maintenance agreements shall specify the manufacturer's maintenance and repair requirements for the advanced wastewater treatment system, and shall require annual sampling and testing of the system's effluent, the results of which shall be provided to the CEO and to the Yarmouth Water District within 12

Commented [BS1]: Suggest changing this wording because Table 7.2 does not include uses, only dimensional standards. This reference my intend to apply to the footnotes of Table 7.2 or footnote 4 of Table 7.1, but that footnote doesn't seem to be associated with any particular use or uses – there is no #4 above.

Commented [BS2]: Advanced Wastewater Disposal Systems should be defined in the ordinance.

Commented [BS3]: This should be part of the definition. Also perhaps include reference to systems certified by Maine

months of this ordinance being enacted and by the end of each calendar year following.

d. Effluent testing shall include, but not be limited to: Total Suspended Solids (TSS), Five Day Biological Oxygen Demand (BOD5), and total nitrogen concentration.

~~e. The heirs, successors, and assigns of an owner of a dwelling unit subject to this subsection 11.11. also shall be bound by this maintenance agreement requirement.~~

~~f. Failure or neglect of an owner subject to this subsection 11.11 or of its heirs, successors, and assigns to comply with the requirements of this subsection 11.11 shall be a violation of this ordinance.~~

~~g. The CEO and YWD shall coordinate to establish and maintain a database of systems in order to enforce this provision.~~

Commented [BS4]: Addressed in Section A, Purpose and Applicability, above

Commented [BS5]: It does not need to be stated that failure to comply is a violation. Normal 80K violations are to take violators to court for fines and legal fees.

Commented [BS6]: This is an administrative item, not a performance standard, and doesn't need to be in the ordinance. Such a database will be required to track annual reporting and enforcement.

Language developed in consultation with:

- Alex Pugh, Sr Environmental Hydrogeologist, Subsurface Wastewater Unit, Drinking Water Program Maine CDC/ DHHS
- William Noble, Environmental Geology Unit, Maine DEP
- Matthew Page Maine Septic Solution (Maine Fajiclean USA distributor)
- Roberta Murphy, Septic Preservation Services (White Knight & Norweco Systems Distributor)
- Eric Gagnon, Superintendent, Yarmouth Water District
- Ben Scipione, North Yarmouth Codes Enforcement
- Brent Lawson, Subsurface Wastewater Division Maine CDC/DHHS
- James Katsiaficas, Municipal & Environmental Attorney
- Yarmouth Water District Board of Directors

Administration of the ordinance

Educate public

Postcard to system owners: expectation that all systems perform within mfr specs

Memorandum of understanding between YWD and CEO.

Info is shared, CEO enforces ordinance

Test range spelled out in O&M (see below)

Spreadsheet of advanced wastewater systems falling under Table 7.2 footnote

YWD has a spreadsheet these systems can be added to.

Annual postcard reminder that testing is due by 9/1, no info by 12/31: violation notices sent

CEO has ordinance violation template

Add to 7.2 footnote to refer see 11.11.B System Requirements

~~? transfer of ownership can the systems be captured- run by town Atty~~

Commented [BS7]: It should be clear that this is applicable to all properties with such a system, whether you are the property owner that installed it or if you bought a property with such a system. Letters/notices can be sent using the assessors database.

? Financial hardship reach out to YWD because they may have funding

Get draft on a SB meeting agenda to present the ordinance (7/18 or 8/ 15)

Commented [BS8]: Perhaps the town should consider establishing a revolving loan fund that might start to be capitalized now, so that when these systems get to be 15-20 years old and start falling out of spec, there is a way to address it.

Section 3a. System Components and Specifications - Summary

FUJI CLEAN USA RESIDENTIAL SYSTEM SPECIFICATION TABLE	CE Series BOD, TSS, TN*				CEN Series BOD, TSS, Enhanced TN		
	Model	CE5	CE7	CE10	CE14	CEN5	CEN7
Load Hydraulic** (GPD)	500	700	900	1000	500	700	900
Effluent*** (assumes domestic strength influent)							
BOD (mg/L)	10-20	10-20	10-20	10	10	10	10
TSS (mg/L)	10-20	10-20	10-20	10	10	10	10
TN (mg/L)	10-20	10-20	10-20	10	10	10	10
Blower Model / CFM (Standard)	FujiMAC 80Rll 2.8 CFM	FujiMAC 80Rll 2.8 CFM	FujiMAC 100Rll 3.5 CFM	FujiMAC 100Rll 3.5 CFM	FujiMAC 80Rll 2.8 CFM	FujiMAC 100Rll 2.8 CFM	FujiMAC 100Rll 3.5 CFM
Power Use (kWh/day)	1.2	1.2	1.7	1.7	1.2	1.7	1.7
Tank Detail:							
Material	Fibre-reinforced plastic				Fibre-reinforced plastic		
Height (inches)	61.8	65.4	73.2	77.4	65.4	73.2	77.4
Length (inches)	85	95.7	98.8	118.9	95.7	98.8	118.9
Width (inches)	43.7	49.2	56.7	68.9	49.2	56.7	68.9
Weight (lbs.)	397	463	705	926	463	705	926
Inlet Invert (inches, to 1/8")	49	53	61	62	53	61	62
Outlet Invert (inches to 1/8")	47	51	59	59.5	51	59	59.5
Access Ports (number)	3	3	3	3	3	3	3
Access Port Diameter (inches)	3@20"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"
Volume Total (gallons)	540	749	1069	1498	749	1069	1498
Volume Chamber 1, Sedimentation (gal)	198	277	397	558	277	397	558
Vol Chamber 2, Anaerobic (gal)	198	278	396	556	278	396	556
Vol Chamber 3, Aeration (gal)	95	127	181	248	127	181	248
Vol Chamber 3a, Storage (gal)	44	63	90	124	63	90	124
Volume Chamber 3b, Disinfection (gal)	4	4	6	12	4	6	12

* TN data was obtained during CE testing, but not to NSF245 testing protocol. CEN testing was to NSF245 protocol.

** Please consult with distributor or Fuji Clean USA for commercial models designed to treat hydraulic flows above those listed in this table.

*** Please consult with distributor or Fuji Clean USA for system specification and sizing in cases where influent biologic strength is greater than domestic strength.

Section 11.11.H Advanced Wastewater Disposal Treatment Systems (Where Required)

A. Purpose and Applicability: The purpose of this section is to preserve and protect public health, safety, and welfare by ensuring required that a Advanced wWastewater Disposal-treatment sSystems installed in the Town of North Yarmouth function as designed and that owners of advanced wastewater treatment systems provide for their proper maintenance.

Applicable to uses in LUO table 7.2 requiring the use of Advanced Wastewater Disposal systems. Advanced wastewater treatment systems are required for lots in the Village Center District to take advantage of reduced minimum lot size requirements, as further specified in Table 7.2, Footnote 4; are required for nursing homes and congregate care facilities located in the Groundwater Overlay District, as further specified in Table 7.1, Footnote 4; and provide a mechanism for clustered housing developments and open space developments to take advantage of reduced minimum lot sizes, as further specified in Section 11.3.C.9.a.2.

B. Standards and Requirements for Advanced Wastewater Treatment Systems:

1. Nitrogen Removal

a. Advanced wastewater treatment systems shall employ a denitrification process and shall have~~And~~ a nitrogen removal capacity that meets the standards of NSF 245: Certification for Global Wastewater Market Acceptance.

2. Form HHE-300 Required

a.- The o~~O~~wner(s) of a dwelling unit constructed, expanded, enlarged, rebuilt, or replaced, on or after the effective date of this ~~amendment~~section, which dwelling unit that is served by an advanced wastewater disposal-treatment system, shall prepare, execute, and record in the Cumberland County Registry of Deeds a Pre-treatment Maintenance Agreement form (Form HHE-300, prepared by Maine Department of Health and Human Services, Maine Center for Disease Control and Prevention).

b. The owner(s) shall provide a copy of the recorded Form HHE-300 with recording information to the CEO prior to receiving a certificate of occupancy for the dwelling unit.

c. Replacement of an advanced wastewater treatment system shall require the owner(s) of the dwelling unit to complete and record a new Form HHE-300, and to

submit a copy of the recorded fForm and a copy of new and replacement or extension maintenance agreements as provided above to the CEO within fourteen (14)

days from-of the date of installation, of the replacement advanced wastewater treatment system.

3. Maintenance Agreement Required

~~a. Systems will be required to operate within manufacturer specifications.~~

ab. The owner(s) of a dwelling unit property constructed, expanded, enlarged, rebuilt, or replaced on or after the effective date of this amendment that is served by an advanced wastewater treatment system installed on or after the effective date of this section -also shall must execute a maintenance agreement providing

for maintenance and repair of the advanced wastewater treatment system in accordance with the requirements of that system's manufacturer, with a company certified to provide such maintenance. A provide a copy of an executed maintenance agreement must be provided for maintenance and repair of the advanced wastewater treatment system in accordance with the requirements of that system's manufacturer to the CEO prior to receiving a certificate of occupancy for the dwelling unit within 180 days of the installation of the advanced wastewater treatment system. The property owner shall provide the CEO with a copy of a substitute or replacement maintenance agreement within ten (10) days of the expiration or cancellation of a prior maintenance agreement. New owners of a property shall provide a copy of a replacement maintenance agreement, or shall provide written certification that the previously-existing maintenance agreement has been transferred to them, to the CEO within sixty (60) days of closing. and they shall enter into replacement or extension maintenance agreements for the duration of the lifetime of that advanced wastewater treatment system, copies of which shall be provide to the CEO.

bc. Maintenance agreements required under this section shall specify the manufacturer's maintenance and repair requirements for the advanced wastewater treatment system, and shall provide for require annual sampling and testing of the system's effluent. The, the results of such effluent tests shall of which shall be provided to the CEO and to the Yarmouth Water District (YWD) within one (1) year of the effective date of this section, 12 months of this ordinance being enacted and then again by the end December 31 of each calendar year following. The CEO shall annually provide written notice of this requirement to all affected property owners on or about September 1 of each calendar year.

cd. Effluent testing shall include, but not be limited to: Total Suspended Solids (TSS), Five Day Biological Oxygen Demand (BOD5), and total nitrogen concentration.

_____ de. The heirs, successors, and assigns of an owner of a dwelling unit subject to this

_____ subsection 11.11. also shall be bound by this maintenance agreement requirement.

_____ f. Failure or neglect of an owner to provide a maintenance agreement as required by this _____ section shall be a violation of this Ordinance, which shall be enforced in _____ accordance with Section 3.10 of this Ordinance subject to this subsection 11.11 or of its heirs,

_____ successors, and assigns to comply with the requirements of this subsection 11.11

_____ shall be a violation of this ordinance.

eg. The CEO and YWD shall coordinate to establish and maintain a database of _____ advanced wastewater treatment

_____ systems in order to enforce this provision.

4 Minimum Lot Size:

a. The minimum lot size can be reduced in the VC to 20,000 square feet when the lot is served by an advanced wastewater treatment system, or the existing system is retrofitted with an advanced wastewater system that that meets or exceeds the standards and requirements imposed by Section 11.11.B of this Article. ~~meets or exceeds the state definition providing 50 percent or more reduction in nitrates, and has demonstrated that water quality will not be degraded.~~

b. GPD or gallon per day design flows may be utilized when presented and proven to not exceed the assumed 4 bedroom or 360 gpd flows of a typical residential home per lot, this type of development requires Planning Board approval.

c. Pocket Neighborhoods allow for the use of reduced lot size below 20,000 sf, consistent with Section 7.2(D).

Section 3a. System Components and Specifications - Summary

FUJI CLEAN USA RESIDENTIAL SYSTEM SPECIFICATION TABLE	CE Series BOD, TSS, TN*				CEN Series BOD, TSS, Enhanced TN		
	Model	CE5	CE7	CE10	CE14	CEN5	CEN7
Load Hydraulic** (GPD)	500	700	900	1000	500	700	900
Effluent*** (assumes domestic strength influent)							
BOD (mg/L)	10-20	10-20	10-20	10	10	10	10
TSS (mg/L)	10-20	10-20	10-20	10	10	10	10
TN (mg/L)	10-20	10-20	10-20	10	10	10	10
Blower Model / CFM (Standard)	FujiMAC 80RII 2.8 CFM	FujiMAC 80RII 2.8 CFM	FujiMAC 100RII 3.5 CFM	FujiMAC 100RII 3.5 CFM	FujiMAC 80RII 2.8 CFM	FujiMAC 100RII 2.8 CFM	FujiMAC 100RII 3.5 CFM
Power Use (kWh/day)	1.2	1.2	1.7	1.7	1.2	1.7	1.7
Tank Detail:							
Material	Fibre-reinforced plastic				Fibre-reinforced plastic		
Height (Inches)	61.8	65.4	73.2	77.4	65.4	73.2	77.4
Length (Inches)	85	95.7	98.8	118.9	95.7	98.8	118.9
Width (Inches)	43.7	49.2	56.7	68.9	49.2	56.7	68.9
Weight (lbs.)	397	463	705	926	463	705	926
Inlet Invert (inches, to 1/8")	49	53	61	62	53	61	62
Outlet Invert (inches to 1/8")	47	51	59	59.5	51	59	59.5
Access Ports (number)	3	3	3	3	3	3	3
Access Port Diameter (Inches)	3@20"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"	2@20" 1@24"
Volume Total (gallons)	540	749	1069	1498	749	1069	1498
Volume Chamber 1, Sedimentation (gal)	198	277	397	558	277	397	558
Vol Chamber 2, Anaerobic (gal)	198	278	396	556	278	396	556
Vol Chamber 3, Aeration (gal)	95	127	181	248	127	181	248
Vol Chamber 3a, Storage (gal)	44	63	90	124	63	90	124
Volume Chamber 3b, Disinfection (gal)	4	4	6	12	4	6	12

* TN data was obtained during CE testing, but not to NSF245 testing protocol. CEN testing was to NSF245 protocol.

** Please consult with distributor or Fuji Clean USA for commercial models designed to treat hydraulic flows above those listed in this table.

*** Please consult with distributor or Fuji Clean USA for system specification and sizing in cases where influent biologic strength is greater than domestic strength.

Hi Diane,

I have made some suggested changes and provided comments within the attached draft language.

I have a couple general comments for the Planning Board and Select Board to consider as well:

1. From a practical standpoint reporting, tracking and enforcement of these requirements will be a lot of work for town staff, and enforcement will be difficult - people should go into this process with that understanding. I also think some kind of assistance program or system replacement funding will be important to get the results the Town is looking for - functional, clean systems.
2. A higher level consideration is that Advanced Wastewater Treatment Systems are packaged systems that need to be reviewed and certified by the state (see list of approved systems attached). I think it is worthy goal to protect the aquifer and groundwater resource, but I don't believe these systems are more risky or any more likely to fail than traditional subsurface wastewater disposal systems, and as such, I have some concern over equal treatment of properties in town. In other words, does the town need to track and regulate these pre-approved systems at all, or maybe the town should be requiring maintenance and reporting on all septic systems in the Groundwater Overlay?

Thanks,
Ben

Ben Smith, Planner



Date: October 22, 2023

To: Jeffrey Brown
North Yarmouth Planning Board

RE: Revisions to Section 11.1. Advance Wastewater Treatment Systems

Jeff:

Thank you for sharing the proposed ordinance changes. I am somewhat familiar with the topic and the history of the Ordinance, having worked for Ricard Sweet years ago, when he advised the Town on the original requirements.

Richard, Mathew Engleman and I started a company in Falmouth to design and build aerating treatment units in the late 1990's. We took our model through the testing and approval process of the National Sanitary Foundation, and successfully obtained NSF-40 approval. The company, Aeration Systems, was sold to American Concrete (Superior Concrete) of Auburn, Maine after Dick's passing.

I see the proposed requirement is for all Advance Treatment Units installed in the Village Zone to meet the requirements of NSF 245. These units are specifically designed for nitrogen removal as an active process and do perform better than the incidental nitrogen removal taking place in the NSF-40 units. The Rule of Thumb we used was that NSF-40 units could see a nitrogen reduction of 25% to 33%, whereas the NSF-245 units see performance of 50 to 75% reduction of nitrogen.

Given the added cost of this further treatment, and the possibility that it may not be essential on all properties and for all wastewater disposal instances, it may be a good thing to add a provision for an exclusion from NSF-245 standards if a site and instance can be shown to be satisfactory with NSF-40 standards.

For instance, any sized natural wetland located downgradient of any septic system, even a conventional septic tank disposal system, will effectively strip nitrogen from a wastewater plume to concentrations approaching zero.

It seems a shame to require this technology where it is not needed.

Regarding the requirement for a maintenance agreement, I searched the Maine Subsurface Wastewater Disposal Rules, and the Rule changes implemented last month, and I'm confused as to the requirement at the State level for an Agreement to be in place. I see that HHE-300 is still on the web site (although there is another from HHE-300 which is a Holding Tank form).

I seem to recall that a maintenance agreement was a State requirement for Advanced Treatment, but that may only apply to State Variance Approvals, in instances where the authority of the Local Code Officer is exceeded by severe setback and site conditions.

Certainly, a regular maintenance program is a good thing for everyone involved, including the owner of the system, as interruptions in the performance of the treatment process can easily foul the wastewater disposal system. What happens is the reduced sized disposal area is dependent on the Advanced unit to lower the TSS and BOD of the wastewater, and if the unit is not performing properly then the disposal area is overwhelmed.

This will result in more work for Town Staff, and it seems to me there need to be appropriate yearly fees included in this ordinance requirement.

Thank you for asking for my comments, and I hope I've helped. Feel free to share this with anyone interested.

Regards,



Mark Cenci
LSE, LG