ANNUAL REPORT OF THE TECHNICAL ADVISORY COMMITTEE FOR 2022

Established by Act 133 of the 2001 Adjourned Session

REGARDING OVERSIGHT AND IMPLEMENTATION OF THE

WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES

January 15, 2024

Members of the Act 133 Technical Advisory Committee*:

Arron Brown, Zoning Administrator for the Town of Charlotte – Delegated Municipality
Cristin Ashmankas, Hydrogeologist & Sedimentologist (DEC)
Mark Bannon, P.E., Professional Engineer
Ernest Christianson, Retired Regional Office Programs Manager
Tom DeBell, Environmental Health Engineer (VT Dept. of Health)
Bruce Douglas, P.E., Wastewater & Potable Water Supply Programs Manager (DEC)
Jenneth Fleckenstein, Water Quality Specialist
Bryan Harrington, Indirect Discharge & Underground Injection Control Programs Supervisor (DEC) (retired March 2023)
Nathan Kie, Indirect Discharge & Underground Injection Control Programs Supervisor (DEC)
Craig Heindel, Certified Professional Geologist & Hydrogeologist
Craig Jewett, P.E., Professional Engineer
Mike Jordan, Licensed Well Driller
Sille Larsen, Engineering and Water Resources Section Supervisor (DEC)
Gunner McCain, Licensed Designer
Stephen Revell, Licensed Designer, Certified Professional Geologist, and Hydrogeologist
Julia Beaudoin, Hydrogeologist, (DEC)
Roger Thompson, Licensed Designer
Ken White, Licensed Well Driller
Justin Willis, Licensed Designer
Sheri Young, Licensed Designer and Certified Professional Soil Scientist
Brad Fischer, Innovative Alternative Technology Service Provider
Jared Willey, Innovative Alternative Technology Service Provider
Scott Davis, Licensed Designer and Onsite Wastewater System Installer

*With positions at the time of appointment to the Technical Advisory Committee and retirements from State Service

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Annual Report of the Technical Advisory Committee

Purpose:

The Technical Advisory Committee was created by Act 133 of the 2001 Adjourned Session of the Legislature and incorporated into the Vermont Statutes as Chapter 64, Section 1978(e)(2) which appears as:

The secretary shall seek advice from a technical advisory committee in carrying out the mandate of this subdivision. The governor shall appoint the members of the committee and ensure that there is at least one representative of the following entities on the committee: professional engineers, site technicians, well drillers, hydrogeologists, town officials with jurisdiction over potable water supplies and wastewater systems, water quality specialists, technical staff of the agency of natural resources, and technical staff of the department of health. Administrative support for the advisory committee shall be provided by the secretary of the agency of natural resources.

Section 1978(e)(3) required the preparation and submission to the legislature of an annual report on several topics: the implementation of this Chapter and the rules adopted under this Chapter; the number and type of alternative or innovative systems approved for general use, approved for use as a pilot project, and approved for experimental use; the functional status of alternative or innovative systems approved for use as a pilot project or approved for experimental use; the number of permit applications received during the preceding calendar year; and the number of permit applications denied in the preceding calendar year, together with a summary of the denial. This report is a summary of the work by the Technical Advisory Committee and the recommendations made by the Committee during 2023.

Technical Advisory Committee Members:

Members of the Technical Advisory Committee (TAC) are recommended by the Secretary of the Agency of Natural Resources and appointed by the Governor. The full list of Technical Advisory Committee Members, and their contact information, is attached as Appendix A.

Executive Committee and Subcommittees:

The TAC has an Executive Committee with three members and two alternates that are available to answer questions or provide testimony to the Agency or the Legislature. The Executive Committee members and alternates are listed at the end of Appendix A.

Meetings:

Online meetings were held on January 24th, February 21st, March 21st, April 18th, May 16th, July 18th, September 19th, and November 16th. The minutes from these meetings are attached as Appendix C.

Activities of the Technical Advisory Committee (TAC):

1. General Comments:

Technical Advisory Committee continued to meet virtually during 2023. The attendance of TAC members was strong and serval non-members routinely participated. The TAC reviewed issues raised by the Department of Environmental Conservation (DEC) and offered advice on various topics. The TAC is looking forward to 2024 when the DEC proposes to begin the process of gathering input from stakeholders as the DEC develops a major update of the Wastewater System and Potable Water Supply Rules (WW Rules).

2. Wastewater System and Potable Water Supply Rules (WW Rules):

The previous version of the WW Rules was adopted on April 12, 2019. Starting soon after adoption, the DEC identified some errors in the WW Rules along with some areas where clarifying language would be helpful. In 2022, the TAC reviewed a list of proposed changes, dated November 18, 2020, along with additional changes discussed by the TAC. By the end of 2022 there were several changes proposed in addition to those in the 2020 list. At the beginning of 2023, the TAC was advised that the DEC had reviewed three options for a rule update. The first was to use the 2020 list which consisted of corrections and clarifications which could be proposed for adoption immediately. The second was to proceed with the 2020 list plus the additional items that had been reviewed and supported by the TAC which could also be proposed immediately. The third option was to wait until a more complete review could be completed by the TAC and the DEC. The DEC concluded that option number one was the best choice because it could be proposed immediately and, because it consisted of corrections and clarifications, it would likely not be controversial. The DEC moved forward with option number one and the proposed changes were accepted by the Legislative Committee on Administrative Rules (LCAR). The new WW Rules became effective on November 6, 2023.

The DEC intends to begin a full review of the WW Rules in January 2024 that may require two or more years to complete. The review will include ways to reduce duplicative reviews, streamline the process for submitting and reviewing permit applications, and may include separating the WW Rules into one section for administrative matters and one for technical matters. A full technical review of the regulations is also planned.

3. Wastewater System Installers and Service Providers:

The DEC received a $200,000 grant from the Lake Champlain Basin Program that can be used to train wastewater system installers, service providers, and system owners. Vermont State University (VSU) was awarded the contract to deliver voluntary training programs.

A series of three installer training workshops will occur in 2024. The first two installer workshops will be held at both VSU-Johnson and VSU-Castleton, to allow better geographic coverage. The third installer workshop will be held at VSU-Randolph and will include participation by approved innovative/alternative wastewater treatment equipment manufacturers. Installers who attend the series of three workshops will receive certificates of completion from VSU.

Under the current WW Rules, an installation certification is required for each installation and the certification must be done by a Licensed Designer for all but simple systems. Currently most systems installed within the State of Vermont are not certified by the installer but solely rely on the designer or engineer who intermittently inspects phases of the installation but cannot guarantee the work of the installation contractor. The Vermont Legislature passed 26 V.S.A §5509, requiring all residential contractors (including wastewater system installers) perform construction where the estimated value is $10,000 or more, must maintain have liability insurance capable of covering $1,000,000 per occurrence and $2,000,000 in aggregate, and execute a written contract prior to performing work. These requirements which are under the jurisdiction of the Vermont Secretary of State's Office of Professional Registration should benefit a permittee, as well as a licensed designer, should a deficiency in permitted work be discovered.

In addition to providing applicable continuing education training for installers, an important benefit of the installer training will be to identify areas where the WW rules, as they apply to the field installation of onsite and decentralized wastewater systems, could be improved.

Service provider training started in the Fall of 2023 with a workshop for service providers at VSU-Randolph. A second workshop for service providers will be held in 2024 and is tentatively scheduled to be held at VSU-Randolph in 2024. Service providers perform the inspections required in a WW Permit for innovative/ alternative wastewater systems. The inspections are generally required once per year but, depending on the technology and/or for pilot or experimental systems, may be required more frequently. The inspection examines the advanced treatment system to ensure that pumps, aerators, alarms, and other equipment works correctly. In some cases, a visual inspection of the ground surrounding the leachfield is done, usually during the springtime, to confirm that effluent is not surfacing. Service providers also repair the mechanical portion of the system and, if needed, routine maintenance of the system such as flushing distribution lines. Under the current rules, a service provider must be approved by the manufacturer of each system. If

there were more service providers with the qualification and expertise to do the required inspections and service for multiple manufacturers, the availability of service providers would increase and possibly lower the cost of service and inspections. With this change a provider could service many systems in a small area. In addition to providing training for service providers, a benefit of the service provider training is to learn from service providers about the issues that impact their work inspecting, monitoring, and/or maintaining innovative/alternative wastewater systems.

In addition to the above workshops, handouts and fact sheets will be developed for wastewater system owners and practitioners regarding proper installation, maintenance , as well as current programs available for financial support for system repair and replacement.

4. Innovative/Alternative Systems:

It has been 20 years since the Innovative/Alternative (I/A) System section was significantly expanded in the 2002 version of the WW Rules. The use of these systems has greatly expanded over the years with 222 treatment units approved in 2023. There are 14 advanced treatment systems approved for general use that allow for reduced site and soil requirements thereby making more lots approvable for development. There are 6 dispersal products approved. These products are alternatives to the traditional septic tank followed by pipe and stone leachfield installations. There are 5 pilot approvals and 2 experimental approvals that allow systems to be tested in Vermont for possible future approval for general use. The Department of Environmental Conservation (DEC) has made great efforts at ensuring these systems are properly installed and that they receive the maintenance required in the permit issued for their use. The DEC has also worked to ensure there are approved service providers for each of the systems.

During 2023, the DEC approved two new Innovative/Alternative Technologies (Table 1).

Table 1. New Innovative/Alternative Technologies Approved in 2023

Approval Type	Company	Technology	Technology Type	Expiration Date
General I/A Treatment	Geomatrix Systems, LLC	GeoMat Flat Leching System with 6 inches of Specified Sand	Combined treatment for filtrate standards and gravelless distribution	May 1, 2025
General I/A Treatment	SludgeHammer Group Ltd.	SludgeHammer ABG	Aerobic Treatment	May 1, 2025

Ten I/A Approvals were renewed in 2023 (Table 2).

Table 2. Innovative/Alternative Technologies Approvals Renewed in 2023

Approval Type	Company	Technology	Expiration Date
General I/A Treatment	Delta Environmental Products	EcoPod-N	May 1, 2025
General I/A Treatment	Premier Tech Environment	Ecoflo	May 1, 2025
General I/A Treatment	Hydro-Action Mfg. Inc.	Hydro-Action	May 1, 2025
General I/A Treatment	Jet, Inc.	Jet	May 1, 2025
General I/A Treatment	SeptiTech	SeptiTech	May 1, 2025
General I/A Treatment	Rich Earth Institute	Rich Earth non-plumbed fixtures	May 1, 2025
General I/A Dispersal	Presby Environmental, Inc.	Advanced Enviro-Septic and Enviro-Septic	May 1, 2025
General I/A Dispersal	GeoMatrix, LLC	GeoMat Flat Leaching System	May 1, 2025
Pilot I/A High-Strength Treatment	Aquapoint	Bioclere	May 1, 2025
Pilot I/A Low-Strength Treatment	Algaewheel	Algaewheel	May 1, 2025

5. Instantaneous Peak Demand (IPD):

The instantaneous peak demand (IPD) is the rate, measured in gallons per minute (GPM) that a water supply must be able to supply to meet the needs of the building(s) to which it is connected. The calculation of the IPD is based on the number and type of plumbing fixtures connected to the system using tables from the International Plumbing Code, or another method approved by the Agency of Natural Resources. A subcommittee was appointed that examined the requirements of the International Plumbing Code and other similar codes. The subcommittee has identified methods of calculating IPD that reflect the use of low flow plumbing fixtures and other changes in technology that can be used within the current WW Rules. The subcommittee will complete its report and it will be reviewed by the TAC. A recommendation to change the process for calculating the IDP is expected which can be incorporated into a future revision of the WW Rules.

6. Town Delegation:

The ability to administer the WW Rules was delegated to the Town of Colchester as of January 1, 2005. The town decided to discontinue its delegation and return the responsibility to the DEC as of April 1, 2023. The Town was dealing with a large number of permits and the application fees did not cover the cost of local administration. The

Town of Colchester also found that it did not have the capacity and resources to ensure compliance with issued permit conditions.

The Town of Charlotte was delegated authority to administer the WW Rules in 2007. The Town decided to return the delegated authority to the State of Vermont, effective April 1, 2024.

Colchester and Charlotte were the only two towns to apply for delegated authority. After the 2007 version of the WW Rules was adopted and after the 2019 version of the WW Rules that allowed for partial delegation allowing municipal approval for connections to municipal water and sewer systems was adopted, the program did public outreach. This included public meetings, multiple letters to all municipalities, and offers to meet with individual municipalities to discuss the adoption process. A few towns discussed the adoption process but only Colchester and Charlotte ever applied for delegation,

7. Low Income Funding Programs

During calendar year 2023 the On-Site Loan Program made one loan award for a total of $30,986 in new loan commitments. The loan was for the replacement of a failed wastewater system. The program has partnered with the Opportunities Credit Union to underwrite and service the loans made under this program.

In 2023, the Healthy Homes Program awarded funding to 172 low to moderate income households to repair or replace 193 failed or inadequate drinking water and/or wastewater systems. In total for 2023, 106 drinking water systems and 87 wastewater systems have received funding. Recipients are spread across the state, residing in every county in Vermont.

The Healthy Homes Program re-opened the pre-qualification application on October 1st for new applicants and closed the application as of October 31st. Applicants will be prioritized based on several factors including household income, severity of system failure, environmental impact, and presence of children or seniors in the home. A total of 117 WW permits have been issued for ARPA Healthy Homes funded projects so far by the Wastewater Program, with most replacement water supplies being exempt from permitting. By the end of 2024, the Program hopes to fund an additional 180 of the highest priority and eligible project requests.

8. Possible Topics for 2024, including but not limited to:

A. Requirements for the disposal of composting toilet waste
B. Use of non-piped potable water supply systems

C. Tiny house water and wastewater requirements
D. Updating the process for Innovative/Alternative system reviews
E. Energy efficiency in wastewater disposal systems
F. Short term rentals, campsites, campgrounds, food trucks
G. Holding tanks
H. Developing a more defined process for granting variances
I. Sieve-size requirement for mound sand and testing frequency for certification
J. Municipal Water and Wastewater Connections

APPENDIX A

Technical Advisory Committee Members & Executive Committee (as of December 1, 2023)

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Executive Committee

Members: Bruce Douglas, Steve Revell, Gunner McCain

Alternates: Sheri Young, Craig Heindel

Clerk: Roger Thompson

Appendix B

Table B-1. Compliance with Performance Standards for Regional Office Permits Issued During Calendar Years from 2007-2023

	# of Permits Issued	# of Permits Meeting PEP Standards	% of Permits Meeting PEP Standards	Average DEC Days
2007	3746	3691	98.5%	16.8
2008	3435	3418	99.5%	12.3
2009	2691	2672	99.3%	11.8
2010	2621	2600	99.2%	11.9
2011	2289	2279	99.6%	13.2
2012	2472	2444	98.9%	12.7
2013	2449	2400	98.0%	14.0
2014	2503	2417	98.4%	12.6
2015	2367	2299	97.1%	11.8
2016	2647	2491	94.1%	16.2
2017	2253	2128	94.4%	16.7
2018	2527	2318	91.7%	15
2019*	2292	2110	84.0%	22.2
2020	2461	2344	95%	16.2
2021**	3085	2931	94%	22.6
2022	2961	2835	95%	29
2023***	2788	2737	97%	14.9

Note: The performance standard for DEC days is 30 days for one-lot subdivisions and projects with a design flow of 500 GPD or less. The performance standard for other projects is 45 days.

* The Program had 2 technical people retire in two offices at the end of 2018 which affected the ability to meet PEP standards and increased the Average DEC Days, particularly for the first 6 months of 2019.

**The Program had 2 technical people retire and 1 technical person leave the Program in 2021. The vacancies, in conjunction with the increase in applications, affected the ability to meet PEP standards and increased the Average DEC Days.

***The Program onboarded 1 replacement technical person, plus 2 ARPA-funded limited-service technical review personnel in the beginning of 2023. The additional staff, once trained, significantly aided in the Program's ability to meet the PEP standards and decrease the Average DEC Days. Of the 3% not meeting PEP, most were permit applications from the first half of 2023, prior to the additional technical staff being fully onboarded and 90% were less than 3 days over the PEP standard. The additional technical staff have not only allowed for a decrease in the Average DEC Days and an increase in the percentage of applications meeting the PEP Standard, they have also alleviated a measure of stress and promoted a better work/life balance among the technical staff.

Table B-2. Failed Wastewater System Permit Information

Year	Applications Submitted to Repair Failed Wastewater Systems	Percentage of Permits for the Repair of Failed Wastewater Systems
2007	330	8.8%
2008	507	14.8%
2009	503	18.7%
2010	495	18.9%
2011	471	20.6%
2012	432	17.5%
2013	435	17.8%
2014	473	18.9%
2015	446	18.9%
2016	528	19.9%
2017	490	21.8%
2018	497	19.7%
2019	512	22.3%
2020	687	27.9%
2021	643	20.8%
2022	552	18.6%
2023	614	22.0%

Table B-3. Permit Information for 2023

Permits Issued to Repair Failed Wastewater Systems	Applications Denied	Percent of Applications requiring 1 or more review comments to be addressed to meet the Rules	Number of Installation Certifications for replacement of failed wastewater systems due in 2023	Received Installation Certifications for replacement of failed wastewater systems due in 2023	Number of Installation Certifications for wastewater and potable water supplies received in 2023
623	**14**	**46%**	**674**	**621**	**1764**

* Reasons for denials:
Denials are issued for applications that are incomplete or fail to demonstrate compliance with the Wastewater System and Potable Water Supply Rules when submitted.

Table B-4. Innovative/Alternative (I/A) Wastewater System Summary 2007 to 2023

Year	Overall Number of I/A Systems Permitted
2007	137
2008	796
2009	538
2010	457
2011	424
2012	513
2013	521
2014	612
2015	594
2016	526
2017	545
2018	561
2019	536
2020	735
2021	841
2022	1032
2023	821
Total	**10,189**

Table B-5. Innovative/Alternative (I/A) System Inspection Reports Received

An Approved Treatment System Requires an Inspection Each Year

Year	I/A Reports Received
2012	52
2013	693
2014	891
2015	914
2016	960
2017	1040
2018	1037
2019	1013
2020	1351
2021	1404
2022	1190* 1664**
2023	1845

*Multiple IA Service Providers have had health issues in the later part of 2022. The Program allowed them to continue to upload their tardy reports for the first four weeks of January.
**The final number of I/A reports received for 2022 inspections.

Table B-6. Innovative/Alternative Technology Permitted in 2023 by Manufacturer

I/A Manufacturer	Number of General Use I/A Treatment Units Permitted	Number of General Use I/A Combined Treatment and Dispersal Units Permitted	Number of General Use I/A Dispersal Units Permitted	Number of Pilot Use I/A Treatment Units Permitted	Number of Experimental Use I/A Treatment Units Permitted
Advanced OnSite Solutions	4				
Algaewheel				0	
American Manufacturing/ Oakson			2		
Anua	0				
Aqua Test				0	
Aquapoint 3				0	

I/A Manufacturer	Number of General Use I/A Treatment Units Permitted	Number of General Use I/A Combined Treatment and Dispersal Units Permitted	Number of General Use I/A Dispersal Units Permitted	Number of Pilot Use I/A Treatment Units Permitted	Number of Experimental Use I/A Treatment Units Permitted
BioGill				0	
Bio-Microbics	15			8	
Busse				0	
Cromaglass	0				
Delta Environmental Products	0				
Ecological Tanks	0				
Eljen Corp			9		
F.R. Mahony & Associates, Inc.	0				
FujiClean	0				
GeoMatrix, LLC		4	23		
Hydro-Action Manufacturing, Inc.	24				
Infiltrator Systems			142		
Island Water Technologies	0				
Jet	56				
Norweco	30				
Orenco	47				
Premier Tech Environmental	49				
Presby Environmental			390		
Rich Earth Institute	7			1	
SeptiTech	6				
SludgeHammer	0				
Total	**238**	**4**	**570**	**9**	**0**

Table B-7. Licensed Designer Program Continuing Education Opportunities

Year	DEC Sponsored Training		DEC Endorsed Soil Classes	DEC Endorsed Non-Soil Classes
	Classes	Attendees		
2010	5	120		
2011	4	110		
2012	7	215*		
2013	12	273*		
2014	12	173*		
2015	13	222		
2016	5	200*	20	36
2017	4	159*	16	20
2018	5	110	12	17
2019	12	186	12	17
2020**	2	33	6	34
2021**	8	200*	11	39
2022**	11	250*	11	33
2023***	6	105*	12	38

* Estimated

*** Due to Covid-19 many classes were cancelled. In response, additional online classes which could be taken at any time were added to the DEC Endorsed Class offerings and are only counted once on this chart. The Office of Professional Regulation's Emergency Provision, which allowed for the use of additional asynchronous, virtual continuing education credits officially sunsets on December 31, 2023.

Appendix C

Approved Minutes

Approved Minutes of the Technical Advisory Committee Meeting

January 24, 2023

Participation by videoconference

Attendees:	Bruce Douglas *	Erin Stewart*
	Ernie Christianson*	Craig Heindel*
	Claude Chevalier*	Jen Fleckenstein*
	Gunner McCain*	Sheri Young*
	Roger Thompson*	Achouak Arfaoui
	Eric Deratzian	Bryan Harrington*
	Steve Revell*	Angela McGuire
	Cristin Ashmankas*	Terry Shearer
	Craig Jewett*	Denise Johnson-Terk
	Sille Larsen*	Tom DeBell*

*Technical Advisory Committee members or substitutes

Scheduled meetings:

February 21, 2023	Virtual

Agenda:

The agenda was accepted as drafted.

Minutes:

The draft minutes of December 15, 2022 meeting were reviewed and accepted as drafted. The draft minutes appear in the Technical Advisory Committee (TAC) Annual Report for 2022. The approved minutes will be published on the Department of Environmental Conservation (DEC) website.

Wastewater System and Potable Water Supply Rules (WW Rules) revisions:

Bruce gave an update on the DEC approach for updating the Wastewater System and Potable Water Supply Rules (WW Rules). The current version of the WW Rules was adopted on April 12, 2019. It was quickly determined that some errors had been included and a plan to correct the errors was started. In November of 2020, a list of corrections and minor updates had been created by the DEC, which were reviewed and accepted by the TAC. This list was ready to begin the formal rule making process. The DEC did not move forward with the process immediately and, therefore, DEC continued the discussion of rule updates with the TAC. Since November of 2020, a number of changes have been discussed and accepted by the DEC and the TAC. The proposed changes focus on rewriting sections to improve clarity and minor technical changes that would not change the scope or basic principles of design. These were selected with a goal of having a package that could be moved quickly into the formal rule making process. The DEC reviewed the proposed changes and decided that some of the changes proposed since the November, 2020 list would require a full review of the WW Rules which might take up to two years and consume a lot of DEC resources. The DEC has decided to return to the November, 2020 list believing it can be processed as a "housekeeping" rule that only corrects and clarifies the existing language.

Innovative/Alternative Systems:

Cristin said that GeoMatrix, LLC, has submitted an update to their application for use of their Geomat™ System as a filtrate disposal system. The system is currently approved as a dispersal system. Approval as a filtrate disposal system would allow the system to be smaller and

reduce the vertical separation to bedrock and the seasonal high-water table. The proposal requires use of at least 6" of ASTM specification C-33 sand under the system. The system has been evaluated at the Massachusetts test site using the requirements for NSF 40 approval. The design loading rate for the test was a maximum of 2 gal/sqft. It was tested using gravity flow but Vermont WW Rules requires use of pressure distribution.

An application has also been received for use of the ECOJOHN® incinerating toilet products. The system can be designed to handle the total waste flow from a house. The system uses propane, natural gas, or diesel fuel to evaporate the wastewater.

Installer and Service Provider Training Program:

Cristin said that the responses to a request for proposal (RFP) for a $160,000 grant that will be used to provide training to installers and service providers are due next week.

Instantaneous Peak Demand (IPD):

Bruce made contact with the subcommittee members to see when people can meet. He is waiting for some responses and will then set a date.

Technical Advisory Committee Annual Report for 2022:

Bruce reported that the report was completed and submitted to the Legislature on time. Bruce met with some Legislative Members last year but has not had a request to discuss the 2022 Report as of yet. The Legislature intends to meet in person this year so it would be a good chance to provide information to Legislators.

Mound Sand Study:

Mary O'Leary will complete the report in the next month or so. Cristin shared an outline of topics that will be addressed in the report. One question will be if three sand specifications are needed or if one is sufficient.

Regional Office Staffing:

Bruce reported that the process for replacing the Regional Engineer working in the Rutland Regional Office is nearly complete. This position focuses on applications in the northern half of the Rutland District including Addison County. He is also adding two Regional Engineers to deal with the new workload associated with the American Recovery Planning Act (ARPA). About 750 additional permit applications are expected and will use ARPA funding. Two of the three new Regional Engineers are Licensed Designers.

Composting Toilets:

Bruce reviewed his appearance on Vermont Public Radio on this topic. One guest who is an advocate for more permissive use of the material from a composting toilet explained their system. Waste is collected in the house in a bucket with additions of organic material to aid in composting and then hand carried to a wooden bin outside. The material is placed in the bin for a period of time and then used as fertilizer. Another guest addressed urine collection. The DEC has approved a system of urine collection and reuse. The urine is high is nitrogen which aids plant growth. Bruce appeared for a short period of time and addressed some of the DEC public health concerns. Concerns include how to protect people from the waste, how to ensure that the composting process will achieve the required level of treatment, and how to dispose of the remaining wastewater.

There is a lot of information on the composting process. Several states have performed testing of the composting process and have identified some of the requirements needed for safe treatment of the waste. The process requires a sustained and elevated temperature to reduce pathogens to a safe level. Simply storing the waste in a container or pile, even for an extended time, does not ensure pathogen removal.

The TAC did a significant review of the issues of waste disposal from composting toilets during 2015. The results of these discussions are included in the Annual Report for 2015. The TAC intends to update the review of the disposal of waste from composting toilets and the use of alternative water supply systems. One item identified in 2015 was the need to consult with the Residuals Management Section.

The TAC supports creating a document that identifies issues and solutions. The Vermont Department of Health should be involved, and possibly the University of Vermont Soil Science Program.

Town Delegation:

The ability to administer the WW Rules was delegated to the Town of Colchester as of January 1, 2005. The town has decided to discontinue its delegation and return the responsibility to the DEC as of April 1, 2023. The town will stop accepting applications for permits under the WW Rules as of March 1, 2023 except for emergency applications to deal with failed systems. As of March 1, 2023 applications for permits may be filed with the State Regional Office Program, however they may not be processed until April 1, 2023. Colchester and the DEC will work to make all of the permitting information accumulated between 2005 and 2023 available online as part of the existing DEC system. Colchester was receiving a very large number of applications, and the application fees were not sufficient to support the permitting work.

H.68:

H.68 is a bill intended to allow higher density development. One portion of the bill allows municipalities to issue permits for individual pipe connections for water and sewer when the municipality has control over both water and sewer systems. The current WW Rules already allow this partial delegation per §1-601(b). No municipality has requested this partial delegation. Licensed Designers also object to being required to certify that the design complies with the WW Rules believing that determining compliance is a regulatory responsibility. Craig Jewett noted that previous changes to the WW Rules already exempt some change in use projects with connections to municipal water and wastewater systems.

TAC Membership:

Bruce noted that Scott Stewart has retired, and that Bryan Harrington will be retiring in a few months from State service and that Justin Willis has decided to withdraw from the TAC.

The TAC discussed the current makeup of the Committee. The legislation authorizing the Committee requires at least one representative of the following entities on the Committee: professional engineers, site technicians, well drillers, hydrogeologists, town officials with jurisdiction over potable water supplies and wastewater systems, water quality specialists, technical staff of the Agency of Natural Resources, and technical staff of the Department of Health. Claude, representing well drillers, said he would work on finding younger well drillers who are willing to be on the TAC. Sheri suggested adding a service provider and an installer for their on the ground perspective.

Topics for Future Discussion:

Tiny houses and the associated water and wastewater systems

Alternative water supplies, hand carried water

Short term rentals and the impact on water and wastewater systems

Campgrounds

Accessory dwellings

Food trucks

Alternative toilets

Update of the Water Supply Rule – consistent with Groundwater Rule and WW Rules

ARPA Programs:

Vermont received $1.05B in one-time American Recovery Plan Act (ARPA) federal funds that must be committed to projects over a four-year period. A portion of the money will be spent on Economic and Community Recovery projects, Housing Development, and Water and Wastewater Infrastructure.

Bruce said that there are at least four programs related to water and wastewater. One program is the Healthy Homes Onsite Water and Wastewater program with about $16M, is for addressing failed and insufficient water and wastewater systems for owner-occupied homes. The Healthy Homes Manufactured Housing Communities program that will provide about $25M is for manufactured housing and mobile home water, wastewater, and stormwater projects. Another program is focused on water and wastewater systems for about a dozen small communities with about $30M of funding. There is also an Agency of Commerce and Community Development Community Recovery and Revitalization Program (CRRP) ARPA funded grant RFP that can support projects with project funding of up to $1M or 20% of the cost. The Drinking Water and Groundwater Protection Division's Wastewater Program will add 5 new limited service to do the permitting for the projects funded with ARPA money.

Minor Permits:

Sheri asked about progress on the process for minor permits. There are some changes coming once the new application process is completed. There are some software problems that must be resolved. Other suggestions included forming a subcommittee or scheduling a regular TAC meeting to develop a list of actions that could be approved with a minor permit. Craig Jewett said that a general permit approach, starting with 4 or 5 actions might be a good approach.

Approved Minutes of the Technical Advisory Committee Meeting

February 21, 2023

Participation by videoconference

Attendees:	Cristin Ashmankas*	Justin Willis*
	Roger Thompson*	Jason Henderson
	Erin Stewart	Steve Revell*
	Craig Heindel*	Jeanne Allen
	Gunner McCain*	Ernie Christianson*
	Jeff Williams	Tom DeBell*
	Bruce Douglas *	Bryan Harrington*
	Angela McGuire	Craig Jewett*
	Ken White*	

*Technical Advisory Committee members or substitutes

Scheduled meetings:

March 21, 2023	Virtual

Agenda:

The agenda was accepted as drafted.

Minutes:

The draft minutes of January 23, 2023, meeting were reviewed and accepted as drafted. The draft that was circulated to the TAC included editing marks that will be removed.

Wastewater System and Potable Water Supply Rules (WW Rules) revisions:

Bruce said that the process for updating the WW Rules based on the 2020 list of proposed changes is moving full speed ahead. The goal is to have the revisions ready for Interagency Committee on Administrative Rules (ICAR) review in April.

Innovative/Alternative Systems:

Cristin notified everyone with an Innovative/Alternative approval that needs to be renewed this year to submit their request by March 1st. The response has been good. She also reminded everyone that annual inspection reports must be submitted.

A request for use of the Sludge Hammer® treatment system is under review. Additional information requested by the Department of Environmental Conservation (DEC) has been submitted and Cristin will be able to issue approval of the system. Cristin expects to have two systems ready for review by the TAC at the next meeting.

Installer and Service Provider Training Program:

Cristin said that the only response to a request for proposal (RFP) for a $160,000 grant that will be used to provide training to installers and service providers was from the Vermont Technical College saying that they could not meet the deadline for a submittal. They intend to submit a proposal in the future that can be reviewed and accepted if it satisfies the requirements of the RFP.

Instantaneous Peak Demand (IPD):

Bruce reported that the IPD subcommittee met with G. J. Garrow, Chief Plumbing and Heating Inspector for the State of Vermont. A second meeting will be scheduled soon resulting in recommendations for review by the TAC.

Mound Sand Study:

Mary O'Leary will submit a draft report by the end of the week. The report will review the different sand specifications used by Vermont and other jurisdictions. The report will also cover the geographic distribution of sand in Vermont and discuss the competing uses that reduce the availability and increase the cost of mound sand. Bruce noted that the finite natural supply of sand and stone for construction is a national and international issue.

Regional Office Staffing:

Bruce reported that Kevin Eaton and Freddie Larsen have been hired as Regional Engineers to deal with the new workload associated with the American Recovery Planning Act (ARPA). Kevin and Fred are Licensed Designers with work in the private sector and should be up-to-speed quickly. Recruitment is under way for a third Regional Engineer.

Angela McGuire has been hired as a Regional Engineer, based in the Rutland Regional Office. She will focus her work in the northern half of the Rutland Office District.

Administrative Updates:

The DEC is updating its process for Regional Office applications that have been filed but that are incomplete. When an application is determined to be incomplete, the DEC will send a request that additional information be submitted within 60 days. If there is no response, a final notice will be sent stating that if there is no response within 30 days the application will be denied and the file closed. This process is used for other DEC permitting programs. Ernie asked about returning the application fee. The fee will be returned until the application is deemed administratively complete at which point the technical review begins.

Justin said that there have been long delays in DEC acceptance of installation certifications. Cristin said this problem should be corrected within two weeks.

Justin asked about the return of delegation from Colchester to the DEC and when there will be access to the Colchester records. Cristin said there will be some form of access by April 1st when the delegation will be returned to the DEC. The full integration into the existing DEC system should be completed within a few weeks.

Attached Living Unit:

§1-1109(d)(2) of the WW Rules provides an exception to some of the requirements related to Instantaneous Peak Demand. The term attached is not defined in the WW Rules and applicants and Licensed Designers often have questions about what is required. The DEC is proposing a guidance document. Carl Fuller, Regional Office Manager, has drafted guidance that if two living units are connected by a roof they are attached. The concept is that the pathway between the units need not be conditioned space or even have walls. The TAC discussed this approach and suggested that more detail is needed so that a proposal to run one piece of wood between the units is not deemed to be a roof.

Technical Advisory Committee:

Scott Stewart has retired from State service and will be replaced on the TAC by Erin Stewart. Bryan Harrington has also retired from State service. Scott, working in the Water Supply Division; and Bryan working in the Indirect Discharge Program; helped ensure that changes to the WW Rules and the rules that they administered were coordinated. This coordination helps applicants and Licensed Designers working on projects that are subjected to more than one set of rules and their efforts are most appreciated.

Justin Willis is withdrawing from the TAC after long participation. Justin is a Licensed Designer. Bruce thanked Justin for his many years of thoughtful participation which required many hours away from his private practice. This was strongly endorsed by the TAC.

Keith Oborn, Charlotte Zoning Administrator is replacing Karen Allen (town of Colchester) as a delegated municipality representative.

Bruce said he is looking for a service provider and an installer who are willing to become TAC members. Jared Willey was suggested as a service provider.

Bruce is also preparing to submit the names to the Governor's Office. The membership must be reappointed after every election.

Legislative Update:

H.68 is under consideration. The bill would allow a municipality, in an area with both municipal water and wastewater systems, to assume responsibility for issuing local water and wastewater permits, in lieu of State permits. As the bill is currently drafted, the municipality would register with DEC that they will issue WW approvals based on plans certified by a Licensed Designer and then require an installation certification from a Licensed Designer.

Bruce and Bryan Redmond may testify to discuss permitting response times that are very short for projects with municipal connections. This process is already permitted with partial delegation under the WW Rules and has been discussed with towns but without any applications for delegation.

Two bills regarding ecological sanitation, H.163 and H.164, have yet to be discussed at the Legislature. H.163 creates a study committee to write a best management practice and requires that the Agency of Natural Resources (Agency) adopt the proposal as drafted. H.164 exempts hand carried or hand pumped water supplies from the WW Rules and requires the Agency to issue permits for wastewater systems that will dispose of non-sanitary wastewater and impose a maximum design flow for these systems of 25 gallons per day.

Composting Toilets:

Bruce asked if any TAC members had watched the webinar on alternative toilets and water supplies. Gunner and Craig Heindel did watch. Gunner said that the TAC should be part of the study committee. Craig noted that while there was some acknowledgement of pathogen concerns the focus seemed to be on e-coli. E-coli is only one of the pathogens of concern, and treatments that reduce e-coli concentrations do not necessarily eliminate other pathogens. Bruce said that with the warming climate round worms are becoming a greater concern. It appeared that while there was some awareness of the science related to waste disposal, a lot of the focus seemed to be opposition to regulatory requirements and the freedom to choose how to meet water and wastewater needs. The Vermont Health Department is aware of these issues and will make recommendations as needed.

DEC/TAC Priorities for 2023:

1. Complete process for reappointment of TAC members.
2. Map out next WW Rule update with a goal of increased clarity.
3. Determine if a general permit approach can be applied to some types of permitting decisions.
4. Work with the Board of Professional Engineers to determine when a referral should be made for their review.
5. Improve the process of notifying Licensed Designers when guidance decisions are made.

General Comments:

Ken said there was concern that a recent report on testing for PFAS did not separate the water sources into shallow and deep wells. Tom said that the Department of Health collects self-reporting data that does separate shallow from deep wells. While not a controlled study the data shows some trends that can inform future work.

Next Meeting:

The next TAC meeting is scheduled for March 21, 2023 and will be a virtual meeting.

Approved Minutes of the Technical Advisory Committee Meeting

March 21, 2023

Participation by videoconference

Attendees:	Terry Shearer	Roger Thompson*
	Brad Fischer	Cristian Jablowski
	Jen Fleckenstein*	Bruce Douglas *
	Sheri Young*	Kevin Eaton
	Steve Revell*	Mark Bannon*
	Craig Heindel*	Scott Davis
	Tom DeBell*	Sharon Bissell
	Jared Willey	Eric Deratzian
	Gunner McCain*	Frederic Larsen
	Angela McGuire	Jeanne Allen
	Craig Jewett*	

*Technical Advisory Committee members or substitutes

Scheduled meetings:

April 18, 2023	Virtual
May 16, 2023	Virtual
June 20, 2023	Virtual

July 18, 2023	Virtual
September 19, 2023	Virtual
October 17, 2023	Virtual
November 16, 2023	Virtual
December 19, 2023	Virtual

Technical Advisory Committee (TAC):

Bruce updated the list requesting the Governor's appointment of TAC members. Erin Stewart decided not to apply for position formerly held by Scott Stewart who was a TAC member. When a person is hired to replace Scott Stewart they can be appointed to the TAC. Steve, Gunner, and Bruce are members of the Executive Committee with Sheri and Craig Heindel serving as alternates.

Minutes:

Craig H. asked for a clarification in the last sentence of the first paragraph related to administrative updates. The words "is done' are replaced with "begins." The minutes were approved with this correction.

Wastewater System and Potable Water Supply Rules (WW Rules) revisions:

Bruce said that the process for updating the WW Rules based on the 2020 list of proposed changes has a full-time attorney assigned and the legal review will be finished next week. Once that is done a request will be made to start review by the Interagency Committee on Administrative Rules (ICAR)

Instantaneous Peak Demand (IPD):

Bruce reported that the IPD subcommittee met a second time. G.J. Garrow, Chief Heating and Plumbing Inspector for Vermont, participated in both meetings and Bruce said this was

helpful because any changes to the WW Rules need to be compatible with the Vermont Plumbing Rules. The group developed a comparison chart based on calculations for a 3-bedroom, 2-bathroom house. The chart compares the results using the International Plumbing Code that is the basis of the Vermont Plumbing Rules; the WW Rules; and the water demand calculations using the Uniform Plumbing Code. The water demand calculations using the Uniform Plumbing Code are based on a study done in the mid-two thousands of 1000 homes. This study reflects the reductions in water flow from the mandated use of low flow plumbing fixtures. The water demands using this approach are significantly less than the current WW Rules. The subcommittee will shortly produce a report that will be circulated to the TAC.

Attached Living Unit Guidance:

Bruce is working with the legal staff to develop guidance. Bruce asked if TAC members had suggestions on how to describe the minimum connection that would meet the requirements. Craig suggested a roof that is weather tight and at least 4' wide.

Legislative Action:

Bruce has not been asked to provide testimony on H.100, the Omnibus Housing Bill. The bill covers many issues and the small portion related to the WW Rules has not been reviewed. The subcommittee reviewing H.163 and H.164, that are related to alternative water and wastewater systems, has not done any work on the bills. These may be held over until next year. Bruce talked with New England regulators about alternative water and wastewater systems and learned that Maine allows some hand carried water supplies with reduced wastewater systems in limited situations. A licensed designer is required for the wastewater system. Sheri said that a 50% reduction in system size can be allowed in Massachusetts.

Colchester Delegation:

The process for returning responsibility for administering the WW Rules from Colchester to the Department of Environmental Conservation (DEC) is underway. Colchester is only accepting applications for failed systems and as of April 1st all applications will be processed by the DEC. The DEC is accepting applications for new work but cannot process them until April 1st. The process of getting the Colchester permitting information into the DEC online system is under way. Each Colchester file must be reviewed to ensure that no non-public information, such as copies of checks or Social Security Numbers, is put online. Sharon Bissell,

who supervises all of the Regional Office support staff, said that several staff members are assigned to this task and it should move quickly. If information is required for a specific property, the Regional Office staff will provide it. A big change is that the so-called clean slate exemption, §1-303 of the WW Rules, will now apply in Colchester.

Administrative Updates:

An updated permit application process will be started on May 1st. The software that will fully populate the DEC tracking system using the information in the new application form has not been completed, therefor the Regional Office staff will still need to keyboard in some of the data. At the same time the process for handling incomplete applications will be implemented. If at the initial review, information is missing, a letter will be sent to the Licensed Designer and the applicant requesting the missing information. If there is no response, a second letter will be sent stating that if the required information is not submitted within 30 days, the application will be closed as being administratively incomplete. The application fee will be returned. The DEC will be sending a newsletter to Licensed Designers announcing the new application forms and will provide training in their use. Craig asked that the newsletter be sent to the TAC.

Steve asked if the DEC will continue to accept hand drawn plans noting that some are hard to read. Bruce said that there are only a few Licensed Designers submitting hand drawn plans and that the quality varies from one designer to another. Craig asked if there are standards for what must be on the plans. Appendix A of the WW Rules gives detailed guidance on plan requirements. Gunner said that some applications are approved even though some of the required information is not included and that this disadvantages those Licensed Designers who do the work to include all of the specified information. Bruce said that moving supervision of the Regional Office administrative staff to the central office will provide more time for managers to work with the Regional Engineers to standardize the review process.

DEC/TAC Priorities for 2023:

1. Map out next WW Rule update with a goal of increased clarity.

2. Decide if a general permit approach can be applied to some types of permitting decisions. Sheri is working on a list of minor amendments and possible exemptions.

3. Work with the Board of Professional Engineers to determine when a referral should be made for their review.

4. Improve the process of notifying Licensed Designers when guidance decisions are made.

5. Jared said that there are several hundred I/A systems that are covered under the clean slate exemption. The DEC should provide guidance on when a permit is required for work on a clean slated system.

Craig H suggested a Survey Monkey Poll type approach to get TAC member suggestions for DEC priorities.

Other Topics:

Bruce noted that the DEC is working to update the Indirect Discharge Rules and the Underground Injection Control Rules this year with a major update of the WW Rules to follow once they are completed.

Alternative water and wastewater systems were discussed. Bruce said that the Town of Burke has adopted zoning changes that allow for up to three campsites using moldering toilets. The zoning changes prohibit "cat holes" (small holes dug for individual use) and privies. The DEC is reviewing this to determine if it violates 10 V.S.A. §1976 which creates uniform statewide standards for water and wastewater systems. Craig asked if moldering toilets were not already acceptable by the DEC. Bruce said that about 80 systems have been installed on state and federally owned land under an exemption. The exemption includes specific siting requirements. Steve said that he had two projects that are on private land that have DEC permits, neither of which allow for residential use.

Cristian asked about continuing education credits for TAC members and Sheri said that 2 non-soil credits are approved for TAC members.

Approved Minutes of the Technical Advisory Committee Meeting

April 18, 2023

Participation by videoconference

Attendees:	Cristin Ashmankas*	Sharon Bissell
	Sheri Young*	Cristian Jablowski
	Roger Thompson*	Erin Stewart
	Gunner McCain*	Megan Kane
	Jeffery Williams	Bruce Douglas *
	Kevin Eaton	Jared Willey
	Craig Heindel*	Steve Revell*
	Justin Willis	Jeanne Allen
	Mark Bannon*	Ernie Christianson*
	Frederic Larsen	Jen Fleckenstein*
	Arfaoui Achouak	Terry Shearer
	Sille Larsen	Aaron Brown*
	Brad Fischer	Craig Jewett*

*Technical Advisory Committee members or substitutes

Scheduled meetings:

May 16, 2023	Virtual
July 18, 2023	Virtual
September 19, 2023	Virtual
November 16, 2023	Virtual

Agenda:

The proposed agenda was amended to add a discussion of the recent Town of Fairlee ordinance that regulates wastewater systems to the new business section.

Minutes:

The draft minutes were amended to clarify which member made comments. Sheri noted that her comment about a 50% reduction in wastewater system size related to Massachusetts rather than Maine. The minutes were accepted with these corrections.

Old Business:

The proposed changes to the Wastewater System and Potable Water Supply Rules (WW Rules) have been approved by the Agency of Natural Resources Secretary and will be sent to the Interagency Committee on Administrative Rules (ICAR) this week. ICAR should review them at their next meeting. The proposed changes are those prepared by Ernie Christianson, from November of 2020. The proposed changes are administrative and minor and therefore should be adopted more quickly.

Bruce is working on the Instantaneous Peak Demand (IPD) suggestions from the IPD Subcommittee. He is also working on draft guidance for attached living units that clarifies §1-1109(d)(2) of the WW Rules.

The omnibus housing bill is under consideration by the Legislature. The section allowing towns to take responsibility for water and wastewater connections to municipal systems is not included.

A recently introduced bill, S.146, directs the Agency of Natural Resources to adopt and implement Anti-Degradation Rules that will protect surface water resources in Vermont. The bill continues to allow wastewater systems of to 1000 gpd, per lot, in Class A watersheds provided they are permitted in accord with WW Rules. The bill states that systems of up to 6500 GPD, in all other watersheds, may be permitted under the WW Rules while larger systems are subject to the Indirect Discharge Rules. The Wastewater program is working with Watershed Management Division regarding how systems which are both: under the jurisdiction of the WW Rules; and are located in a future Class A1, A2 or B1 watersheds, will be addressed in proposed statute and rules. The impact of the Anti-Degradation Rules will not be known until they are developed. Craig J. noted that even if permits are considered to meet the Anti-Degradation requirements there still may be legal action taken unless there is a clear statement of which review process meet the standards.

Craig H. asked if there is a list of proposed reclassifications. There is and the information is available at: https://legislature.vermont.gov/committee/detail/2024/30

Sharon and Cristin reviewed the status of the return of delegation from Colchester. As of April 1, 2023, the Department of Environmental Conservation (DEC) is responsible for issuing WW Permits in Colchester. The process of preparing the records Colchester maintained so they can be placed on the DEC website is proceeding rapidly. Items such as copies of checks, and Social Security numbers are being removed before publication of the records. A large portion of the records will be published soon. The records also remain available through the Colchester website and the Regional Office staff can provide the records for a specific project. There are still a few records that Colchester will send to the DEC. The entire process should be completed within a few weeks.

The new electronic application is currently being tested and should be ready for use by May 1st. There will be training in using the new application and there will be a short period when either the existing or the new application form can be used. Ernie asked if paper plans can still be submitted to accommodate Licensed Designers without electronic technology. Sharon reported that no paper plans are being submitted, though about 20% of payments are still made with checks. Bruce noted that the DEC is moving to add electronic applications for other programs. Cristin said that the WW Permits are currently the only program where all applications are filed electronically.

Bruce outlined the process for a full update of the WW Rules. The process will start in 2023 and is scheduled for completion in 2026. The TAC will be involved in the various steps in the process. Craig J. mentioned that there should be close coordination with the Water Supply Section and that a general permit approach might cover some types of projects. He also said that it might work to have a rule with separate technical standards such as the Stormwater rules.

The request for all appointments to the TAC has been sent to the Governor's Office.

Bruce asked about whether the TAC meetings should continue to be held monthly or if meeting every two months might be more effective. Sheri suggested that if more of the work is done by small sub-committees, fewer full group meetings would work. Steve and Jeff both thought bi-monthly meetings would be good. Bruce suggested that the TAC meet in May and then in July, October, and November, which was approved.

Bruce suggested using a Survey Monkey Poll to determine priorities. Sheri suggested that the poll go to all designers which Gunner supported. Roger suggested that this not be a list for 2023 but an overall list of things for the next full revision of the WW Rules. Bruce can then select things that should be considered first, particularly any items that can be resolved with a guidance document approach.

I/A Systems:

Cristin said that two updates related to the GeoMat™ system have been issued. One is a renewal of the approval of the system as a dispersal system. The other is an approval for combined use as a filtrate treatment system and a dispersal system. Most of the requests for approval renewals have been submitted in time for the May 1st deadline.

Local Ordinances:

The recent adoption of an ordinance related to the location of soil-based wastewater systems by the Town of Fairlee was discussed. This may conflict with State Statue that requires statewide uniform rules. Bruce said that this is under discussion with DEC attorneys along with the ordinance adopted a few months ago by the Town of Burke. The Fairlee ordinance is an attempt to protect Lake Morey from elevated levels of phosphorus that cause excess plant growth. Roger asked if it has been determined that the problem in Fairlee is related to septic systems. Craig H. said that it is likely legacy phosphorus and that studies show that this is generally not caused by septic systems. The Vermont Lakes and Ponds program has found that applications of alum have been an effective treatment. Lake Morey was treated successfully a

few years ago and may be ready for a reapplication of alum. Steve said that he had been required in one case to get a conditional use permit for a replacement wastewater system that seemed to be beyond what the WW Rules required.

New Business:

Bruce was contacted about the use of ground glass in lieu of natural sand. Several thousand yards of material can be generated per year from the waste glass that is currently collected each year. The DEC Solid Waste Division asked if the ground glass could be approved for use as mound sand if the particle size meets the WW Rules. Sheri said that there is a lot of contamination with plastic materials. Cristin said that microfibers are also a concern but that septic tank effluent already has these contaminates so the glass contamination may not be the limiting concern. Craig suggested contacting other regulators and Sheri said that the University of Rhode Island has worked on this issue.

Bruce reported that one contractor mentioned that because labor is so scarce and expensive that he is willing to use a more expensive system that requires less labor for the installation.

Approved Minutes of the Technical Advisory Committee Meeting

May 16, 2023

Participation by videoconference

Attendees:	Cristin Ashmankas*	Roger Thompson*
	Cristian Jablowski	Sharon Bissell
	Sheri Young*	Craig Heindel*
	Gunner McCain*	Ernie Christianson*
	Jared Willey	Bruce Douglas*
	Erin Stewart	Julia Beaudoin
	Sille Larsen	Denise Johnson-Terk
	Jeffery Williams	Brad Fischer*
	Jeanne Allen	Kevin Eaton
	Tom DeBell	Megan Kane
	Craig Jewett*	

*Technical Advisory Committee members or substitutes

Scheduled meetings:

July 18, 2023	Virtual
September 19, 2023	Virtual
November 16, 2023	Virtual

Updates:

Bruce introduced Julia Beaudoin as the new Department of Environmental Conservation (DEC) Hydrogeologist. Julia is filling the position previously held by Sille Larsen. Julia will be recommended for appointment to the Technical Advisory Committee (TAC) as Sille's replacement.

Bruce noted that the Legislature has adjourned and that he will have more time to update the Wastewater System and Potable Water Supply Rules (WW Rules) and program management.

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes were amended to add a topic heading to the discussion of local adoptions of rules related to wastewater disposal systems.

Old Business:

The proposed changes to the Wastewater System and Potable Water Supply Rules (WW Rules) have been approved by the Interagency Committee on Administrative Rules (ICAR). The proposed rules will be filed with the Secretary of State's Office and then the public meetings can be scheduled. After public meetings are held, the DEC makes a written response to all the public comments, and if needed, revisions to the proposed rules. At that point, a meeting is scheduled with the Legislative Committee on Administrative Rules (LCAR). LCAR decides if the proposed rules meet statutory authority and legislative intent. LCAR can decide that the proposed rules comply, can decide that they do not comply, or suggest changes. Suggested changes are usually quickly negotiated and agreed upon, at which time LCAR makes a determination that the proposed rules comply. The approved rules are then resubmitted to the Secretary of State's Office and take effect after a statutorily set waiting period.

The introduction of the updated electronic application has been delayed until June 1st so that the new process for dealing with incomplete permit applications can start at the same time. The new process is that if, upon initial review, the application is incomplete the applicant will be

notified that they have 30 days to submit the required information. If there is no response a second notice will be sent with a 30-day deadline. If the information is still not received, the application will be administratively closed. The process for dealing with incomplete applications will eventually apply to all DEC applications. The DEC is considering whether a processing fee should be retained if an application is closed because it is incomplete. The existing policy is that the full application fee is returned if the application is closed because it remains administratively incomplete.

The notes from the subcommittee meetings on Instantaneous Peak Demand (IPD) calculations still need to be written up. Bruce is working on this. The results will be circulated to the TAC.

The draft guidance for deciding if living units meet the definition of being attached is still being reviewed.

S.146 which is related to the Indirect Discharge Rules, classification of State waters, and anti-degradation rules has passed the Senate. It can be worked on next year in the second year of the bi-annual Legislative session.

S.100, which is a large bill with many sections that is intended to improve access to affordable housing has passed the House and the Senate and is waiting for action by the Governor. When proposed the bill included a provision for municipalities to issue permits for water and wastewater systems when the connections would be to municipal water and wastewater systems. This section was removed from the bill. The bill requires the Agency of Natural Resources (ANR) to review permitting processes and identify areas where the administrative burden on applicants can be reduced. One area of conflict under the current rules is that some municipalities use different design flow calculations. Gunner said that Stowe uses different numbers. Roger added that Hartford had used one number for the municipal fee calculation while giving approval for the DEC design flow. Craig J. said that some towns do this based on their experience of measured sewage discharges that are generally lower than DEC design standards. If they reserve flow for new projects based on the DEC numbers, there is less capacity for other applicants. Sheri expressed concern about the impact on applicants when the water and wastewater systems are reviewed at both the State and town level. Bruce agreed and said that this will be part of the review of how administrative burdens can be reduced.

WW Rules Update:

Bruce outlined his plans for a major review and update of the WW Rules. He proposes to reorganize the WW Rules so that there is a section for water issues, one for wastewater issues, one for designers' issues, and one for administrative issues. Bruce would like to wait until the Fall to start working on this. Craig H. agreed, as did the TAC.

Jeff mentioned two issues that well drillers are interested in. When an applicant proposes to add an accessory unit for a project with an existing well the WW Rules require that the well supply sufficient water. In many cases the existing well does not meet the requirements and a new source or major upgrades are proposed. Jeff said that in some cases, if the well is drilled deeper, it will meet the requirements, but the results are not guaranteed. If the project has a permit approving a new source or major upgrade and the well is drilled deeper with a good result, the permit then needs to be amended to reflect what is actually done. It would save some money if the process could be streamlined. It is possible that an update to the Instantaneous Peak Demand calculations will reduce the number of applications where a water source will need to be upgraded. Jeff also mentioned that there are some large geothermal projects with many wells and there is some concern about a temperature impact on neighboring wells.

Craig J. said that PFAS (polyfluoralkyl substances), sometimes described as forever chemicals, are a rising concern not only for drinking water but also septage disposal. Bruce said there is a study coming on septage in Vermont that will look at the amount generated, how to dispose of it, and the impacts on groundwater. Sheri said that the study should also look at other contaminants such as pharmaceuticals. Sille asked if stormwater impacts on groundwater will be included. Bruce said probably not with this study but that the DEC is looking into the problem.

Craig J. said that there is a two-year time of travel requirement for separation between large wastewater disposal systems and water sources and maybe something like this could be applied to stormwater disposal. Julia said that the constructed impacts of stormwater systems in general need to be studied.

Sheri said that all the rules should be studied to see if permitting accessory dwellings can be made easier. There is a large demand for these units and unnecessary requirements should be eliminated.

Sheri asked about the restrictions on surface water supplies in Lake Champlain in §1-1102(d)(2) of the WW Rules. This section prohibits the use of surface water systems south of the Lake Champlain Bridge. Sheri asked if there are any exceptions to this and Ernie said that the restriction applies to all portions of the lake south of the bridge. Ernie said that the restrictions are based on information from the Water Quality Division. Sille asked if algae blooms might be the basis of the restriction. Craig H. remembered that the TAC discussed the

issue in the past and asked that the minutes be checked so that past discussions could be reviewed. Roger will check the records.

Variance Question:

Cristian asked if the variance process can be used when proposing a drilled well to replace a surface water system. Cristin said that the variance process can be used.

Local Ordinances:

The Town of Burke adopted an ordinance that regulates wastewater disposal systems which may be in conflict with the WW Rules that gives sole jurisdiction to the State. Bruce met with the town, and they plan to update the ordinance so that it is not in conflict with the WW Rules.

The Town of Fairlee also adopted an ordinance that may conflict with the WW Rules. DEC legal counsel is reviewing the matter and will decide if there is a conflict that needs to be resolved.

Approved Minutes of the Technical Advisory Committee Meeting

July 18, 2023

Participation by videoconference

Attendees:	Sharon Bissell	Cristian Jablowski
	Sheri Young*	Jen Fleckenstein*
	Roger Thompson*	Denise Johnson-Terk
	Craig Jewett*	Nathan Kie
	Ernie Christianson*	Kevin Eaton
	Frederic Larsen	Jeanne Allen
	Terry Shearer	Steve Revell*
	Bruce Douglas*	Jared Willey*
	Angela McGuire	Megan Kane
	Cristin Ashmankas*	Gunner McCain*
	Mark Bannon*	Evan Bollman
	Tom DeBell*	

*Technical Advisory Committee members or substitutes

Scheduled meetings:

September 19, 2023	Virtual
November 16, 2023	Virtual

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes were accepted as drafted.

Updates:

Bruce reported that the required public hearings on the proposed Wastewater System and Potable Water Supply Rules (WW Rules) have been held and that there were no comments received. The proposed WW Rules have been submitted to the Legislative Committee on Administrative Rules (LCAR) and a hearing will be held in August. Bruce said that the LCAR Committee is more proactive than in the past and may have questions and concerns that will need to be addressed.

Innovative/Alternative Technology (I/A):

Cristin reported that there are no applications that currently need Technical Advisory Committee (TAC) review.

Updates:

Bruce reported that he is writing up the results of the subcommittee work on Instantaneous Peak Demand (IPD). This will be circulated to the TAC.

Bruce said that the guidance document defining the requirements to meet the attached living unit standards is complete and waiting for Bryan Redmond's signature.

Bruce also reported on a meeting with the Department legal advisors who suggested that the language recently adopted by the Town of Fairlee might be acceptable because it only related to a change in use of an existing property. The TAC objected to this analysis because any type of change, including the first construction on a vacant lot, would meet this standard and conflict with section §1-103 of the WW Rules that mandates uniform statewide standard. Bruce will further discuss this with the legal advisors.

Flood Response:

Bruce said that only a few calls have been received related to small wastewater systems. There were some contacts related to the larger systems subject to the Indirect Discharge Rules. The Indirect Discharge program is reaching out to the 197permittees to learn if there were any problems caused by the flooding that should be addressed. Replies from 70 systems indicate no problems and 14 reported small problems. Most concerns about private wells are being evaluated using guidance from the Vermont Department of Health (VDH). The VDH is providing free water tests kits on request from owners of flooded wells. The Department of Environmental Conservation is working on a "hot link" to designers, including Professional Engineers that are Licensed Designers, so that updated information can be quickly disseminated.

Sheri said that some systems are failing even though flood waters did not cover the system. In some cases, water has entered pump station that results in continuous operating of the pump. This pumping of flood water can overload the leachfield causing failure. The flood water can also back up into the septic tank with enough pressure to dislodge the outlet filter. These systems are likely to fail quickly if operated without reinstalling the filter. Sheri suggested that more attention should be given to surface grading upslope of leachfields.

Bruce noted that failed water and wastewater systems receive priority for permitting and failed systems related to flooding are a priority within that group. Sheri said systems that failed due to the extreme amounts of rainfall should also get this priority even if the flood level did not reach the system. Bruce is concerned about the workload because the Regional Offices are already issuing about 3000 permits per year.

Bruce asked if advanced treatment systems need extra attention, especially related to the electrical controls. Jared said infiltration is always a concern with conduits but that advanced treatment systems are less apt to be located where flooding occurs. A couple of systems did need pumping.

Cristian asked if there are locations where replacing individual soil-based systems with a collection system would be cost effective. Bruce said there is an American Rescue Plan Act (ARPA) program administered by the State that might be able to fund this type of system.

Other thoughts on flood relief included mobile wastewater treatment systems which are available but are expensive and mobile toilet/shower facilities.

Tom said that the Vermont Health Department is sending 400 free test kits per day to those concerned about their private water supply.

Other Issues:

Bruce reaffirmed that the WW Rules prohibit use of Lake Champlain surface water systems south of the Lake Champlain Bridge.

Steve asked if Bruce would like some TAC members to attend the LCAR meeting for approval of the WW Rule updates. Steve noted that in the past, TAC members had addressed some of the questions from the LCAR members and helped with on-the-spot revisions so that approval could move forward. Bruce said this would be a good idea.

Approved Minutes of the Technical Advisory Committee Meeting

September 19, 2023

Participation by videoconference

Attendees:	Cristin Ashmankas*	Bruce Douglas *
	Scott Davis	Sheri Young*
	Roger Thompson*	Gunner McCain*
	Steve Revell*	Cristian Jablonski
	Craig Heindel*	Jeanne Allen
	Frederic Larsen	Ernie Christianson*
	Julia Beaudoin	Justin Willis*
	Carl Fuller	Megan Kane
	Tom DeBell*	K. Osborne
	Denise Johnson-Terk	Sille Laren*
	Mark Bannon*	Jared Willey*

*Technical Advisory Committee members or substitutes

Scheduled meetings:

November 16, 2023	2-4 PM	Virtual

Agenda:

The proposed agenda was accepted with additional topics for installer training and the Act 250 statement in the new online application form.

Minutes:

The draft minutes of the July 18, 2023, meeting were accepted as drafted.

Updates:

Bruce said the Legislative Committee on Administrative Rules (LCAR) will be held on Thursday, September 21st. Steve is not able to make the meeting, but Gunner will be there. Michael O'Grady, Legislative Counsel, had a question about the changes related to the depth to bedrock below a leachfield but Bruce was able to clarify to his satisfaction. The use of he/she has been changed to they per current State of Vermont usage.

Cristin reported that the Ecojohn® application for whole house use has some opposition. The Air Quality and Climate Division of the Vermont Department of Environmental Conservation (DEC) is concerned that the system works by incinerating the wastewater. The fuel consumption for a system that will treat up to 300 gallons per day of wastewater may be up to 10 gallons of propane or natural gas per day.

Premier Tech has submitted additional information about the material used in their biofilter system. This will be ready for discussion by the TAC at the next meeting.

Cristin reported that a grant from the Lake Champlain Basin Program will be used for training. Training for wastewater system installers will start this fall with one workshop followed by two more in the spring. Licensed Designers will be contacted and encouraged to pass the information along to the installers they work with. Cristian asked if the training would allow installers to do installation certifications. Cristin said that the Wastewater System and Potable Water Supply Rules (WW Rules) currently allow installers to do installation certifications of systems that can be designed by Class A Licensed Designers and a WW Rule revision would be needed to expand what an installer could certify. There will be at least two workshops for service providers. Bruce said his goal is to have service providers that can service many different systems, so that there are enough service providers to meet the need for the annual, or more frequent, inspections of advanced treatment systems. The DEC is also considering a certification or licensing approach for installers. Cristin noted that certifications can be issued by any educational unit, but licenses need legislative authority. Cristian said he would support licensing

installers. Sheri said some installers she works with are not interested. Cristin said installer training would be held in Killington and in Johnson.

Old Business:

Bruce is still working on the Instantaneous Peak Demand (IPD) Guidance document. It will allow for the use of updated approaches for calculating the IPD and for performing well capacity testing.

A guidance document defining the requirements to meet the attached dwelling exemption related to IPD was released. The exemption is §1-1109(d)(2) of the WW Rules. Some Licensed Designers were disappointed that they were not consulted during development of the guidance. A second guidance document was issued related to the fees for replacement areas. These will soon be posted online.

The update of the Indirect Discharge Rule (IDR) is continuing. The IDR group is working on clarifying that the use of Septic Tank Effluent Pumping (STEP) systems is permitted under the IDR. Craig asked about the proposed anti-degradation amendments and Bruce said that they were not adopted in the past legislative session. Bruce said he testified at a committee hearing that the existing IDR is among the most restrictive in the country.

Nate Kie is the new supervisor in charge of the Indirect Discharge and Underground Injection Control Programs. Nate led the Underground Injection Control program and has four years of experience with the IDR program.

Bruce said that work on new fact sheets oriented towards landowners is ongoing. He hopes they can be issued this fall.

The Town of Fairlee adopted an ordinance related to septic systems for expansion of use of existing lake front properties. The rule requires that replacement wastewater systems be at least 150’ from the lake shore. The DEC reviewed the rules adopted by Fairlee and determined that they do not comply with §1-103 of the WW Rules that prohibit wastewater rule adoptions by municipalities. Fairlee will apparently revise the ordinance to comply with the WW Rules.

New Business:

In response to the flooding this summer, the Federal Emergency Management Agency (FEMA) is helping people displaced by flood damage. There were about 200 people needing assistance with about 50 to 60 still needing help. FEMA will provide temporary, 6 to 18 months

of housing. FEMA has a fleet of mobile homes, with various models to meet the climate needs of a particular location, that can be used. These may be in existing mobile home parks or on the parcel with the damaged house. The Governor's Office is using emergency authority to allow for immediate connection to existing water and wastewater systems. If new water and wastewater systems are needed, permits will be required. There is a focus on actions to minimize damage related to the effects of climate change. While much of this is on energy conservation, some is focused on relocation from flood prone areas. Sheri noted that few people will move unless there is a financial incentive available.

Legislative action (S.100, Capital Home Act) in the past session requires the Agency of Natural Resources to review and update regulations for connections to municipal water and wastewater systems. The goal is to reduce duplication of efforts at the town and state level and to minimize the cost of permitting.

Craig asked if this can also include larger shared systems that are not connected to municipal systems. Bruce said the legislative requirement is to address municipal connections, but the hope is to use a similar approach to address systems with either, or both, onsite water or wastewater.

Bruce is working on a strategy for addressing major topics in the next WW Rule update. This will be an extensive review, beginning with reviewing the statutory purpose of the rules. Bruce asked if the current WW Rules are comprehensive enough or should there be more land management such as lot sizes included. Gunner and Steve said the existing WW Rule is sufficient. Sheri said the application process can be improved and the easier it is for applicants the better. Craig said the DEC is doing a good job with the applicants coming into the system. Towns might add a requirement to their zoning regulations to ensure that needed State permits are obtained prior to construction.

Sille said that shallow wells are not covered as well as they should be. People are adding unlicensed treatment systems for arsenic because the installation of water treatment systems are not regulated. Tom said that old dug wells and old water systems are the most problematic because they are generally not entered into the Vermont Department of Health database.

Roger asked if some towns are choosing to ignore the need for state permits. Cristin said that some towns seem to be unaware of the need for state permits. Some towns appear to be adding requirements to local permits related to wastewater and water supply systems. Cristin will do a mailing letting towns know that they cannot impose additional requirements.

The increasing use of alternative, particularly advanced treatment, systems was discussed. Bruce thinks there is a need for an extra fee for the review of these systems because the regional office staff, supported by the central office staff, often do a more extensive review of

the application. Craig said that the DEC is doing a good job with the Innovative/Alternative (I/A) systems. Ernie noted that the changes in the WW Rules and approval of more I/A Systems has made development in Addison County easier. Bruce said that the Lake Champlain Basin Project is looking at the hydraulic properties of clay soils to learn if better understanding of the hydraulic capacity of clay soils can result in additional approvable sites for wastewater systems.

The system to support replacement of failed water and wastewater systems was discussed. Craig, Gunner, and Steve said the system is doing well and allowing cost effective replacement systems. Steve noted that careful consideration of micro-topography and soil structure is very important for replacement systems on difficult sites. More flexibility should be allowed. The presumptive allowance of a 4" reduction in separation to the seasonal high-water table (SHWT) is too restrictive. Sheri asked if the flexibility is limited to fixing unpermitted systems or if it can be used for replacing previously approved systems. Bruce said it applies to both where variances are allowed. Sheri said that a minor permit approach for repairing failed systems, particularly reconstruction of mound systems, would save application money and allow the repair construction to start sooner.

Mound sand cost was discussed. Sheri reported that a mound system in Addison County she worked on cost $60,000 because of the cost of trucking sand a long distance. Gunner said that in his area the cost was closer to $30,000. Sille asked if the mound sand requirements could be changed to allow for a wider range of sand textures. Sheri said that existing mound sand should be reuseable in some cases. Cristin said that because some areas are lacking in approvable sand, manufactured sand may be approved.

Increasing reliance on the private sector was also discussed. Craig said that if there is more reliance on the private sector there will be a need for more licensing, something that the legislature has not always supported. Cristin said that anyone the State requires to go to the property should be licensed. In addition to Licensed Designers, installers and the service providers that do the operating inspections of advanced treatment systems should be licensed. Roger said that even with licensing, oversight is needed to ensure quality control. Sille said that she still receives water system applications from licensed designers that are deficient. Tom said that there are complaints that some licensed well drillers do not properly disinfect wells after construction. Sheri said that there needs to be more training of water system designers.

Delegation of permitting to municipalities under the WW Rule is allowed. Colchester and Charlotte were approved for delegation many years ago, but Colchester has withdrawn its delegation. Ernie said that he had discussed delegation with a few towns, but none had pursued delegation.

Mound sand was also discussed. Ernie asked if crushed glass was being considered. Bruce said there is a large supply of glass available. The glass can be crushed and sorted to get the correct particle size though contamination with other materials can be an issue. Bruces wants a careful review before allowing widespread use. Craig supports looking at glass but warns against allowing smaller particle sizes than currently approved. Sheri said that consultation with the Solid Waste Division should be done to ensure that the glass is not considered to be a waste product, rather is an approved reuse. Justin said that the mound system sand used in Chittenden County mostly comes from the Town of Johnson. He said that when a small, local pit has some sand that meets the mound sand specifications a large contractor can quickly consume all of it.

Sheri said that the Act 250 statement in the Permit Navigator System needs revision. Cristin said that the Permit Navigator App. is controlled by a contractor that is slow to make changes. Sille said to push the use of the Permit Navigator application to decide if an Act 250 Permit is needed.

Cristin asked how the passage of H.100 affects Licensed Designers. Bruce said that the bill makes changes in what zoning ordinances can require so that denser development can occur, but it does not change the need for a State permit.

Draft Minutes of the Technical Advisory Committee Meeting

November 16, 2023

Participation by videoconference

Attendees:	Cristin Ashmankas*	Bruce Douglas*
	Sharon Bissell	Sheri Young*
	Roger Thompson*	Craig Jewett*
	Mark Bannon*	Scott Davis
	Ernie Christianson*	Craig Heindel*
	Julia Beaudoin	Cristian Jablowski
	Frederic Larsen	Evan Bollman
	Kelsey McWilliams	Aaron Brown
	Tom DeBell*	Chris Tomberg

*Technical Advisory Committee members or substitutes

Scheduled meetings:

No meetings are currently scheduled. Bruce would like to meet monthly in 2024 because he expects to be working on an extensive rewrite of the Potable Water Supply and Wastewater Disposal System Rules (WW Rules). Bruce will work on a schedule for the meetings and a list of topics for discussion.

Agenda:

The proposed agenda was accepted with added topics for installer training and the Act 250 statement in the new online application form.

Minutes:

The draft minutes of the September 19, 2023 meeting were revised and approved.

Updates:

The update to the WW Rules became effective on November 6, 2023. No changes were made during the Legislative Committee on Administrative Rules (LCAR) process. Bruce thanked the Technical Advisory Committee (TAC) members and the Regional Office staff for their work on amending the WW Rules. Bruce will send copies of the undated WW Rules to the TAC members.

Old Business:

FEMA Transportable Housing has been installed on about 20 sites on Country Club Road along with 2 in existing mobile home parks and one on a stand-alone site.

Work continues updating guidance documents related to fees and the definition of an attached dwelling. As of January 1, 2024, only guidance documents registered with the Secretary of State's Office are considered to be part of the WW Rules. There are four documents listed on the Department of Environmental Conservation website that are currently effective. Bruce said there are more topics that need to be added.

There is no update from the Instantaneous Peak Demand work group. Bruce is working on a write-up of the group's recommendations.

The work on the Indirect Discharge Rules is moving forward. The updated rule will add Septic Tank Effluent Pumping (STEP) and drip dispersal systems as conventional systems, rather than their status as experimental. The updates will clarify that the WW Rules apply to the portion of the construction prior to the first treatment component. IDR jurisdiction will start at the septic tank at the beginning of a STEP system.

Work updating fact sheets for food trucks, campgrounds, alternative toilets, and short-term rentals is continuing. Tom said that the Vermont Health Department is updating the water testing package that is needed to meet the requirement that all new water supplies for single family residences be tested.

Wastewater System Installers and Service Providers:

Wastewater system installers and service providers that do the inspections advanced treatment systems are not licensed by the State of Vermont. Service providers must have approval from the manufacturer/vendor of a particular advanced treatment system to do the annual inspection for that system. The Department of Environmental Conservation (DEC) is considering the possibility of adding a licensing requirement that would require legislative

approval and/or creating a certification process that would recognize an installer or a service provider as having demonstrated the knowledge required to work on specific types of water or wastewater systems. A grant from the Lake Champlain Basin Program has been obtained that will allow for training of service providers and installers in the next few months. A licensing or certification program might increase the number of installers and service providers. Roger said that he does not support the creation of additional licensing programs. Tom said that the Vermont Plumbing Board is considering if the increased use of water treatment systems justifies a revision to the plumbing rules such as creating an additional special license. Craig J. recommended contacting the State of New Hampshire and asking about the pros and cons of their program that licenses installers. Bruce said that he is also reviewing how other states deal with this issue. Bruce noted that installers are currently allowed to certify the installation of simple wastewater systems (those that can be designed by a Class A Licensed Designer) and is considering the possibility of allowing for certifications of some of the more complicated systems. Craig J. commented that most Licensed Designers have insurance that protects the permittee. Bruce said that the Office of Professional Regulation (OPR) now requires that any contractor doing a project for $10,000 or more have liability insurance with a minimum of $1,000,000 per occurrence and $2,000,000 in aggregate. Roger asked about potential conflict between the designer and installer if a system has problems after the installation, Cristin said that an installer that signs the installation certification assumes the liability for design problems though they may not be aware of this liability. Craig H. asked if the OPR insurance requirement applies to installing water treatment systems. Bruce said that interior construction is not covered at this time. Sheri thinks that installers need some Licensed Designer oversight. Ernie noted that a Licensed Designer is usually not onsite during the full construction process and therefore does not see a portion of the construction before it is covered. An installer certification would cover the work that the Licensed Designer did not see. Cristin said one DEC concern is that when an installer does not certify the installation the DEC has no authority directly over the installer. Bruce also noted that Licensed Designers get requests to do after-the-fact inspections and must make judgments on how much digging and camera work to do and how much will they rely on information from the installer that did the work. Sheri said she has done inspections and found that improper materials had been used. Bruce wondered about how many permitted systems have been installed without having an inspection at the time. Bruce also said that he was aware of at least one case where a Licensed Designer was hired but the landowner did not apply for a permit. Sheri has occasionally found a system that was constructed without a permit. There are questions about how many problems are happening, whether there has been an improvement with compliance over time, and how much effort at increasing compliance is justified.

The DEC would like to create a category of service providers called Operation and Maintenance Specialists. This group would do the inspections required for advanced treatment systems and other systems when required as a condition of the Wastewater Permit. Craig J. asked if they would be allowed to do the site examinations sometimes required such as checking for

surfacing of effluent, slumping of the fill material, or maintenance of proper surface drainage. Cristin said that they would. Bruce thought this might be helpful to some Licensed Designers who are overloaded with work. Roger asked if the manufacturer/vendor of a system would also need to agree that the Operation and Maintenance Specialist could inspect their system. Cristin said that the goal is to have a group of people who could cover many different systems so that individual manufacturers/vendors would not have to certify a person for their particular system. Ernie strongly supports this approach saying that in the past there were times when a manufacturer/vendor had no approved service provider in Vermont. Sheri asked how the DEC would be able to train and monitor the service providers and Bruce said that a position would need to be added. The creation of a program for Operation and Maintenance Specialists might also bring down the cost to the homeowner for the inspections because a service provider could inspect many systems in a small area, rather than having only a few systems they are approved to inspect that are scattered all over Vermont.

Boundary Line Adjustments

Bruce said there is some DEC discussion about exemption §1-304(9) of the WW Rules. This exemption applies when a boundary line between two pieces of land is moved and applies when several conditions are met. One of the conditions states that "the lot is reduced in size by no more than 2 percent." The question is whether the 2 percent limitation applies to the lot being reduced in size or the total area of the two lots between which the boundary is being relocated. Craig said it applies to the lot being reduced in size. Roger and Ernie agree and said that the language seems clear because it starts with "each lot being adjusted . . ." and then applies the 2 percent reduction to "the lot being reduced in size . . .".

Innovative/Alternative Systems:

Cristin said that Premier Tech is asking for review of its new Ecoflo Linear Biofilter system. The system combines the treatment and dispersal functions into one area using coco fiber as the treatment medium installed on a 12" bed of sand. The system can be pressure dosed with various methods including an approach similar to the Flout® which does not require an electrical connection. The design includes a sampling port that must be flushed and then operated for 24 hours before collecting the sample. The system can be renovated by replacing the coco fiber. The system has been tested using low strength wastewater at various loading rates and temperatures and passed with average results of 3-9 mg/l BOD and 1-7 mg/l TSS. The minimum sizing of the dispersal area is based on the sand characteristics with increases in size when required by the receiving soil capacity. The dosing devices show acceptable distribution. Careful construction is required for good distribution and there are concerns about the need to replace the coco fiber and the limited crush resistance of the distribution system. Use of machinery over the system must be strictly limited. There are concerns about the installation process which requires the sand to be

placed in two layers with compaction after the placement of each layer. Bruce said he is not concerned, and Craig J. supported the use of compaction for consistency in the sand layers under the coco fiber. There are two locations that have approved use of the system with about 20 installations so far. Sheri asked about disposal of the used coco fiber and Cristin said it would go to a landfill. Roger asked if there would be separate approvals for use with gravity or pressure distribution. Ernie asked if the treatment occurs in the coco fiber or in the sand fill underneath the system. The system was tested and approved by NSF using 12" of sand and is currently being tested using NSF requirements with an installation on 6" of sand. Cristin said that the current approval of the Geomatrix® system relies on the 12" of sand under the dispersal system. Ernie asked if the requirement to replace the coco fiber after 20 years of use required replacing the sand as well as the coco fiber. Cristin said that in most cases it should be only the coco fiber. Craig H. said if the system is essentially similar to the Geomatrix® it should be approvable. Craig J. commented that the Flout distribution works well, and Roger agreed. Cristin will ask for modifications to the installation manual to match the Vermont requirements. Bruce asked about permitting requirements for the replacement of the coco fiber at 20 years and Cristin said an evaluation by a Licensed Designer would be needed to ensure that all aspects of the reconstructed system would be up to standards.

New Items:

Jared Willey reported that 2 towns have voted to support bonds for large scale Indirect Discharge Systems. Craig H. said there are concerns about the growth impact for the project in Westford. Bruce said that there might be impacts on drinking water supplies that must be addressed as part of the project in West Burke. Craig J. said that West Burke has been working on wastewater issues for 10 years and there are several villages currently interested because money may be available. He noted that there is political interest, but the process has not moved into technical work yet. He also notes that just because there is money, not all citizens may be interested in expanding development. Bruce said that no one has proposed a fire district approach where a system might be implemented to serve a specific portion of a town. Craig J. said that the fire district approach can reduce the bonding capacity and that some existing fire district-based water supply systems are looking at asking the town to take over the system.