ANNUAL REPORT OF THE TECHNICAL ADVISORY COMMITTEE FOR 2024

Established by Act 133 of the 2001 Adjourned Session

REGARDING OVERSIGHT AND IMPLEMENTATION OF THE

WASTEWATER SYSTEM AND POTABLE WATER SUPPLY RULES

January 15, 2025

Members of the Act 133 Technical Advisory Committee:

Cristin Ashmankas, Hydrogeologist and Sedimentologist (DEC)
Mark Bannon, P.E., Professional Engineer
Aaron Brown, Zoning Administrative Office. Town of Charlotte
Ernie Christianson, Retired Regional Office Manager
Scott Davis, Licensed Designer and Excavating Contractor
Tom DeBell, Environmental Health Engineer (VDH)
Bruce Douglas, P.E., Wastewater Programs Manager (DEC)
Brad Fischer, Innovative Alternative Technology Service Provider
Jenneth Fleckenstein, Water Quality Specialist
Craig Heindel, **CPG**, Hydrogeologist
Craig Jewett, P.E., Professional Engineer
Sille Larsen, Public Water Engineering and Water Resources Sections Manager (DEC)
Gunner McCain, Licensed Designer
Stephen Revell, **CPG**, Licensed Designer, Hydrogeologist
Roger Thompson, Licensed Designer
Ken White, Licensed Well Driller
Jeff Williams, Licensed Well Driller
Jared Willey, Innovative Alternative Technology Service Provider
Sheri Young, Licensed Designer and Certified Professional Soil Scientist
Nathan Kie, Indirect Discharge & Underground Injection Control Programs Supervisor (DEC)
Julia Beaudoin, Hydrogeologist (DEC)

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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 2024.

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 member and alternates are listed at the end of Appendix A.

Meetings:

Online meetings were held on January 24th, February 21st, March 21s, April 18th, May 16th, July 18th, September 19th, November 16th and December 17th. 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 2024. The meetings were well attended. The TAC reviewed issues raised by the Department of Environmental Conservation (DEC) and offered advice on various topics. The discussion centered around a scoping review of the Wastewater System and Potable Water Supply Rules (WW Rules) in preparation for a major update to the WW Rules during 2025.

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

The 2023 version of the WW Rules was subject to an administrative update on September 20, 2024. The minor revisions included in the update were limited to amending spelling errors and citations.

3. Preparation for A Major Update of the WW Rules:

The DEC is preparing for a major update of the WW Rules. The last major update was completed in 2019, with a minor update in 2023 and an administrative update in 2024. The DEC and the TAC share a goal of reducing the regulatory complexity of the WW Rules for applicants, Licensed Designers, and regulators.

In preparation for this update, the TAC meetings for the year comprised of a Department-led series of scoping questions, and discussion of each major section of the Rules. After review of the Rules, the consensus of the TAC is that the overall technical basis of the WW Rules is consistent with accepted scientific principles. Recognizing further revision, clarification and updating is needed within some existing sections of the 2023 WW Rules. There are many areas that can benefit from clarification. One example is the soil analysis that is the basis of wastewater system design. The WW Rules specify certain vertical separations between the bottom of the leachfield and the Seasonal High-Water Table (SHWT). Although these separation distances are supported by the TAC, the description of how the SHWT is determined may lead to an excessively conservative determination and most likely increase wastewater system installation cost. The TAC will review this process and decide if an updated approach to determining the SHWT will protect the groundwater while avoiding unnecessarily expensive wastewater systems. Another example of a need for clarification is included in the definition section of the Rules. Currently, the acronym, 'ADU' does not appear in the WW Rules. However, the terms, "attached dwelling unit", "accessory dwelling unit", or "additional dwelling unit" refer to an important segment of housing stock expansion and should be more explicitly addressed in future rule revisions. Consistently and extensively defining acronyms and terms, unified with other State departments, eliminates confusion and increases streamlining of projects. Many other topics were discussed, and the discussions are described in the Minutes of the TAC Meetings included in Appendix C.

The DEC offered two approaches for updating the WW Rules. One is to work with the existing Rules and modify a section here and there. The other is to consider a full reevaluation of the Rule, to make the Rule easier to use. The DEC and member of the TAC are inclined to pursue a full reevaluation of the Rule.

Once the overall approach is decided, the DEC will begin drafting a revised WW Rule including feedback from public meetings and TAC discussions. As that work proceeds the DEC and the TAC will meet during 2025 to do a section by section review. When the DEC determines that the draft is complete, a public review process including meetings in various locations around the State will occur. The final step will be a review by the Legislative Committee on Administrative Rules (LCAR), and if accepted, the revised WW Rules will be filed with the Secretary of States Office and made effective.

4. Innovative/Alternative Systems:

The use of Innovative/Alternative systems continues to grow. Additional systems were approved during 2024. The goal of many of the new approvals in recent years has been to reduce the cost of complying systems for landowners. The current list of approved systems is available at: https://dec.vermont.gov/water/wastewater-systems-and-potable-water-supply-program/innovative-and-alternative/innovative-and

During 2024, the DEC approved three new Innovative/Alternative Technologies (Table 1). Of note is the pilot approval for processed glass aggregate from the Chittenden Solid Waste District. The reuse of recycled items collected in state for use in local wastewater systems aids landowners in meeting the state requirements at a significant cost savings, aids the State in the conservation of a natural limited resource, aids the environment in the reduction of fossil fuel consumption to ship the material out of state. The TAC hopes to see more such technologies in the near future.

Table 1: New Innovative/Alternative Technologies Approved in 2024

Approval Type	Company	Technology	Technology Type	Expiration Date
General I/A Dispersal	Premier Tech Water and Environment	Ecoflo Linear Biofilter	Gravelless distribution	May 1, 2026
General I/A Treatment	Premier Tech Water and Environment	Ecoflo Linear Biofilter Pressurized with 6" of Specified Sand	Combined treatment for filtrate standards and gravelless distribution	May 1, 2026
Pilot I/A Dispersal	Chittenden Solid Waste District	Processed Glass Aggregate	Alternative to naturally occurring sand that meets size distribution requirements	May 1, 2026

Sixteen I/A Approvals were renewed in 2024 (Table 2).

Table 2: Innovative/Alternative Technology Approvals Renewed in 2024

Approval Type	Company	Technology	Expiration Date
General I/A Treatment	Orenco Systems, Inc.	AdvanTex AX and AX-Max	May 1, 2026
General I/A Treatment	Bio-Microbics, Inc.	MicroFAST, RetroFAST	May 1, 2026
General I/A Treatment	Bio-Microbics, Inc.	Lixor	May 1, 2026
General I/A Treatment	Norweco, Inc.	Singulair and Hydro-Kinetic	May 1, 2026
General I/A Treatment	Anua	Puraflo	May 1, 2026
General I/A Treatment	Anua	PurasSys SBR	May 1, 2026
General I/A Treatment	Anua	BioCoir	May 1, 2026
General I/A Treatment	Anua	AeroCell	May 1, 2026
General I/A Treatment	Advanced Onsite Solutions LLC	The Clean Solution	May 1, 2026
General I/A Treatment	Rich Earth Institute	Rich Erath plumbed fixtures	May 1, 2026
General I/A Dispersal	Eljen Corporation	GSF	May 1, 2026
General I/A Dispersal	Infiltrator Water Technologies, LLC	ARC Series Chambers	May 1, 2026
General I/A Dispersal	Infiltrator Water Technologies, LLC	Quick4 Series Chambers	May 1, 2026
General I/A Dispersal	Oakson	Perc-Rite	May 1, 2026
Pilot I/A High-Strength Treatment	Bio-Microbics, Inc.	HighStrengthFAST	May 1, 2026
General I/A High-Strength Treatment	Aqua Test, Inc.	The Nibbler	May 1, 2026

5. Instantaneous Peak Demand (IPD):

In 2023, the DEC and the TAC worked on updating the requirements for calculating the IPD. The calculation determines the size of the well pump required to supply water to a dwelling. The existing WW Rules often required an upgrade of the well pump in order to construct an attached accessory dwelling unit. The DEC and TAC explored options and

agreed to use the Water Demand Calculator System created by the International Association of Plumbing and Mechanical Officials (IAPMO). This process has now been approved by the National Water Works Association. This approval allows for immediate use of the new approach in Vermont. The change will, in many cases, reduce the cost of constructing multiple living unit residential dwellings.

6. Overshadowing

Overshadowing occurs when the isolation distances around water supplies and wastewater systems extend onto neighboring properties. Isolation distances are utilized to ensure adequate separation between wastewater dispersal and potable water supplies. The overshadowing of an isolation distance in some cases limits the area available for water supplies or wastewater systems that could be permitted on the neighboring property in the future. Overshadowing has occurred since the beginning of water and wastewater system regulation and is based on a first-in-time approach. There are concerns of whether this is fair to neighboring property owners. The issue was extensively discussed in 2010, and the TAC prepared a report available at:
https://dec.vermont.gov/sites/dec/files/dwgwp/rotac/pdf/2011.01.15.tacovershadowingrep.pdf
There are continuing concerns about the impacts of overshadowing and the DEC is reviewing possible ways of eliminating or reducing the negative impact of overshadowing on neighbors while continuing to ensure that potable water supplies and wastewater systems are protected by the intent of isolation distances.

7. Committee on Municipal Connections:

Act 47 of the 2023 Legislative Session established a committee to review the process of issuing construction permits for projects that will be connected to both municipal water and wastewater systems with a goal of identifying approaches for reducing the administrative burden and costs incurred by municipalities and permit applicants. The committee includes the Agency of Commerce and Community Development, the Agency of Natural Resources, representatives of municipalities, professional engineers, licensed designers, and environmental organizations.

The committee met several times during 2024 and is close to issuing the required report. Recommendations will include replacing the Municipal Delegation process in the current WW Rules. The revised delegation process will allow municipalities to administer the technical review and issue construction approvals for projects that will be connected to both municipal water and wastewater systems. Under the proposed approach, the municipal approval and all supporting documents would be sent to the Agency of Natural Resources, who would issue a general permit without additional technical review. The information will be added to the same database as all other permits issued by the DEC under the WW Rules and will be publicly available online.

8. Low Income Loan and Funding Programs:

During calendar year 2024, the On-Site Loan Program made seven loan awards for a total of $214,021.00 in new loan commitments. Six of the seven loans were for the replacement of failed wastewater systems; the other loan was for the replacement of a failed water supply. The On-Site Loan Program has partnered with the Opportunities Credit Union to underwrite and service the loans made under this program.

In 2024, the American Rescue Plan Act of 2021 (ARPA) funded Vermont Healthy Homes Program awarded funding to 203 low to moderate income households to repair or replace failed or inadequate drinking water and or wastewater systems. In total for 2024, 89 drinking water systems and 114 wastewater systems have received funding. Recipients are spread across the State, residing in every county in Vermont. A total of 213 WW permits have been issued for ARPA Healthy Homes funded projects so far by the Wastewater and Potable Water Supply Systems Program, with most replacement water supplies being exempt from permitting. Of the 213 permits issued, 135 have been successfully constructed to date. The ARPA Healthy Homes Program has obligated $15.4 Million in wastewater and potable water supply projects for Vermont. Although no new ARPA Healthy Homes awards will be offered, construction of potable water supply and wastewater system will continue into 2026.

9. Possible Topics for 2025, 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

APPENDIX A

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Executive Committee:

Members: Steve Revell, Gunner McCain, Bruce Douglas

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 2007-2024

Year	# 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
2024	2981	2934	98%	17.7

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	Number of Permitted Replacement Systems Installed To Date	Percentage of Permitted Replacement Systems Installed To Date	Percentage of Failed Wastewater Systems Past Due Date
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%	485	99.0%	1.0%
2018	497	19.7%	495	99.6%	0.4%
2019	512	22.3%	508	99.2%	0.8%
2020	687	27.9%	682	99.3%	0.7%
2021	643	20.8%	636	98.9%	1.1%
2022	552	18.6%	546	98.9%	1.1%
2023	614	22.0%	561	91.4%	8.3%
2024	602	20.6%	367	61.0%	3.7%

*Compliance for the WW Program actively reaches out to work with landowners to come into compliance with their permits. Starting in 2014, the Program made two key changes to make it easier for landowners to comply with their permits. First, the Program automated electronic reminders to landowners that their permit due dates are approaching and that they may request an extension of the date with cause. Secondly, the Program changed its policy of requiring a permit amendment for extending construction dates that were past due to allowing the submission of an installation certification for a system that was installed past its permitted due date to resolve the compliance issue of record. The Compliance Team is actively utilizing Notices of Alleged Violation (NOAV) to inform landowners when they are past their due dates. The landowners are realizing a cost savings by no longer needing to hire a designer to submit a permit amendment application, nor pay the permit fee to the State, but continue to realize the importance of compliance through the NOAV process.

Table B-3: Permit Information for 2024

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 wastewater and potable water supplies received in 2024	Total Number of Permit Compliance Document Submissions received in 2024
614	**4**	**48%**	**1906**	**4805**

* 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 2024

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	817
2024	738
Total	**10,923**

Table B-5: Innovative/Alternative (I/A) System Inspection Reports Received
An Approved 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
2024	2413

*multiple IA Service Providers have had health issues in the later part of 2022. The Program is allowing them to continue to upload their tardy reports for the first two weeks of January. The expectation is once complete the compliance reporting will exceed 2021's number.

**The final number of I/A reports received for 2022 inspections.

Table B-6: Innovative/Alternative Technologies Permits in 2024 by Manufacturer

I/A Manufacturer	Number of General Use I/A Products Permitted	Number of General Use I/A Dispersal Technologies	Number of Pilot Use I/A Treatment Technologies Permitted	Number of Experimental Use I/A Treatment Technologies Permitted
Advanced OnSite Solutions	2			
Algaewheel			0	
American Manufacturing/Oakson		10		
Anua	0			
Aqua Test	1			
Aquapoint 3	0			
BioGill	0			
Bio-Microbics	8			
Chittenden Solid Waste District			0	
Delta Environmental Products	0			
Ecological Tanks	0			
Eljen Corp		15		
F.R. Mahony & Associates, Inc.	0			
GeoMatrix, LLC		13	4	
Hydro-Action Manufacturing, Inc.	14			
Infiltrator Water Technologies, LLC		86		
Jet	97			
Norweco	26			
Orenco	47			
Premier Tech Environmental	60		1	
Presby Environmental/Infiltrator Water Technologies, LLC		341		
Rich Earth Institute	7			
SeptiTech	6			
SludgeHammer Group Ltd.	0			
Total	268	465	5	0

Table B-7: Licensed Designer Program 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	78
2024***	10	180*	10	45

* 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.

*** 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, that allowed for additional asynchronous, virtual continuing education credits officially sunset on December 31, 2023.

Table B-8: Number of Licensed Wastewater System and Potable Water Supply Designers by Classification on December 31, 2024

WW Designer Classification	Number of Licensees
Class A	29
Class B	46
Class BW	56
Class 1 (PEs)	205
Total	336
Total Active Designers*	**187**

* Number of Active Designers are Licensed Designers submitting 1 or more permit applications in 2024

Appendix C

Approved Minutes

Approved Minutes of the Technical Advisory Committee Meeting

February 20, 2024

Participation by videoconference

Attendees:	Bruce Douglas*	Ernie Christianson*
	Jared Willey*	Mark Bannon*
	Craig Jewett*	Cristian Jabolonski
	Jeanne Allen	Roger Thompson*
	Craig Heindel*	Kevin Eaton
	Steve Revell*	Julia Beaudoin
	Terry Shearer	Sille Larsen*
	Catherina Narigon	Tom DeBell*
	Jen Fleckenstein*	Frederic Larsen
	Sheri Young*	Cristin Ashmankas*
	Jeffrey Williams	

*Technical Advisory Committee members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

March 19, 2024	2-4 PM
April 16, 2024	2-4 PM
May 21, 2024	2-4 PM
June 18, 2024	2-4 PM
July 16, 2024	2-4 PM
September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM

December 17, 2024 2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the November 16, 2023 meeting were accepted as drafted.

Updates:

The update to the WW Rules became effective on November 6, 2023. After adoption, a few typos and minor errors were discovered. A revised copy of the Wastewater System and Potable Water Supply Rules (WW Rules) is being prepared and will be submitted as a minor administrative correction.

Innovative/Alternative Technologies:

Cristin reported that Premier Tech Ltd. has submitted the requested revisions for their Ecoflo Linear Biofilter System application. Approval of their application is expected soon.

Cristin said that technologies requesting renewal of their approvals should submit their renewal package by March 1st to ensure that the renewal is approved by May 1st.

Guidance Documents:

Guidance documents that are currently in effect must be listed and indexed on the Agency Website and filed with the Secretary of State's Office. Bruce said that old guidance documents will be archived and available on the website. The documents will have a watermark added showing that the documents are obsolete. Craig H. suggested that instead of describing the web location as an archive it should be labeled as obsolete documents.

Two guidance documents were issued in 2023:

One gives the minimum standard for meeting the definition of attached dwelling.

The other explains that a fee is not required for a replacement area if the plan only shows an area where a replacement system can be constructed. If a replacement system is needed in the future, an application would be required, and the fee would be collected at that time.

Two guidance documents are currently in the works:

One will specify a build by date for replacement of a failed wastewater system or water supply. While an extension may be granted for good cause, automatic extensions will not be granted. This change is needed to prevent "gaming" of the process where repeated extensions are requested to avoid replacing the failed system or supply.

The other document will approve use of the Water Demand Calculator System created by the International Association of Plumbing and Mechanical Officials (IAPMO) to calculate the Instantaneous Peak Demand, which is the minimum amount of water in gallons per minute that the Water Supply System must provide. The WW Rules specify two methods that may be used and allows for other methods approved by the Secretary of the Agency of Natural Resources. The document referenced above makes it clear that the IAMPO system is approved for use.

Old Business:

The work on updating the Indirect Discharge Rules (IDR) is continuing. There is an ad hoc technical group helping with the revisions. The updated version will make it explicit that drip dispersal systems, septic tank effluent pumping (STEP), and septic tank effluent gravity (STEG) systems are approvable. Craig H. said that the Oakson company has some comments about drip dispersal systems. Bruce said he had received the comments and is checking with other companies that provide drip dispersal systems for their input.

The Department of Environmental Conservation (DEC) is working on several fact sheets. Fact sheets outline the requirements while guidance documents clarify how to apply the WW Rules. There will be fact sheets related to camping and campsites, short term rentals, mobile food units, waterless toilets, food service, and boundary line adjustments. More fact sheets will be created as needed.

New Business:

The Home Act that is intended to make more housing available by allowing greater density, passed in the last legislative session and included a provision that the DEC look for

ways to reduce the administrative burden for permits under the WW Rules. Bruce, and Drinking Water and Groundwater Protection Division Director Bryan Redmond, are working with stakeholders, including municipal officials, designers, advocacy groups, and others, to see if there are administrative changes that could be made for projects that use both municipal water and wastewater connections. Under the current system a landowner needs approval by municipal officials and approval under the WW Rules. The current WW Rules allow a municipality to take partial delegation of the WW Rules and issue a permit for a project that uses municipal systems for both water and wastewater. There have been no applications for this partial delegation authority. Fire districts are municipalities for these systems. Large privately owned systems, such as those owned by a homeowner's association, are not included.

Bruce confirmed that the Town of Charlotte is returning its delegated authority to the DEC as of April 1, 2024. The cost of administering the WW Rules exceeded the value to the town. Cristin noted that in addition to the cost of reviewing plans, doing site visits, and issuing permits, a delegated municipality is responsible for enforcing compliance. With the earlier return of delegated authority from the Town of Colchester, there will be no towns with delegated authority. The DEC has made several offers over the years to meet with towns to explain the process for taking delegation and while a couple of towns asked a few questions none has applied for delegation.

Jeff noted that, when a replacement drilled well is constructed, some towns require a local permit even though many replacement wells qualify for an exemption under the WW Rules. The exemption under the WW Rules allows for immediate construction with some follow-up paperwork to document the well location. Cristin noted that any new well, including those that qualify for the permit exemption, must have the water quality tested and the results submitted to the State Health Department and when required by the WW Permit to the DEC.

Sheri said that some towns require a permit fee to cover the cost of a town installation inspection.

Craig J. said that there is no consistency in what towns require. Some have no requirements for systems with WW Permits while some regulate the water or the wastewater only. The requirements change from time to time, making it difficult to have a single source of reliable up-to-date information.

Rule Revisions:

Bruce said that he is ready to start the process for a major update to the WW Rules. He proposes to start re-envisioning the rules to ensure that they meet the intended purpose of getting

the right system in the ground efficiently. There will be technical and regulatory workshops to gather information from those who design systems using the WW Rules and those affected by the WW Rules.

Bruce shared a proposed monthly schedule for various topics. Jeff said this was great because some participants want to attend only the meetings related to their work. Bruce agreed, and as an example, said that Claude Chevalier wanted to discuss the definition for drilled wells when the water supply section is reviewed. Craig H. also supported Bruce's proposal. Sheri said that, even when a meeting is focused on a particular topic, there should be time allowed for people to get issues on the record in case they cannot participate when the issue is discussed in the future. Roger suggested looking for areas that can be deregulated or made subject to less regulation. Craig H. suggested making plans easier to understand for owners and contractors. In the past, the TAC considered asking for a standardized plan format. At the time, some designers objected strongly, believing that they should be able to present the information in the way they find useful. Terry said that one approach that the DEC had tried was to prepare a checklist of items that might need to be on a set of plans and require the designer to include the checklist showing what was included. Not every application would need all the pieces of information. Terry said that some of the designers just checked every box every time and concluded that a checklist is not useful. Another approach that was considered was to deny the application if the first submission had too many errors. This was very controversial with complaints that it penalized the applicant for the designer's mistakes. Several members commented that checklists have been used for years but they don't improve the quality of the applications without enforcement.

Jeff said that training for designers can improve the outcome. One concern that well drillers have is that too many permits are issued requiring a well be drilled in a location that is difficult or impossible to access with a drilling rig. Steve estimated that about 1/3 of proposed locations are not practical. Some onsite training of designers by well drillers could help the designer understand the process of getting a rig onto the property in a particular location. The group discussed if the Regional Office staff should comment about a proposed well location that meets the technical standards but would be difficult and expensive to construct. Cristin said that staff routinely brings up the issue, but some designers are unwilling to revise the application because it does meet the technical standards. Craig J. said that raising the issue helps if the application must be revised to allow for a better well site. Jeff said that well drillers do work with designers to encourage them to consider if a proposed well site is practical. Ernie said that while this issue is important, there has been a lot of improvement in plan quality over the years.

Bruce said that he would establish several subcommittees as different topics are discussed and invited TAC members to volunteer when they are interested in the topic.

Public Comment and New Items:

Jared said some compliance inspection reports that he had submitted were returned because the WW Rules require that a designer do the inspection for intermittent and recirculating sand filters. While the WW Rules allow for these systems to be individually designed, Jared said that most of the systems that were installed were package systems based on a standardized plan. Cristin said that there are three companies that would like to do inspections for these systems, but the WW Rules require that they be done by a Licensed Designer. The DEC would need statutory changes to include a Service Provider category in the WW Rules and authorize approved individuals to inspect all types of Innovative/Alternative Systems along with sand filter systems. Sheri agreed with the need for a Service Provider group and notes that some special equipment, such as down pipe camera systems, are not commonly owned by Licensed Designers. She also commented that, if tanks needed to be pumped and inspected, approved septic tank pumping companies could handle that part of the inspection.

Approved Minutes of the Technical Advisory Committee Meeting

March 19, 2024

Participation by videoconference

Attendees:

Sharon Bissell	Cristin Ashmankas*
Denise Johnson-Terk	Bruce Douglas*
Jeanne Allen	Roger Thompson*
Steve Revell*	Jen Fleckenstein*
Sheri Young*	Claude Chevalier
Jeffrey Williams	Ernie Christianson*
Julia Beaudoin	Terry Shearer
Craig Heindel*	Frederic Larsen
Jared Willey*	Tom DeBell*
Megan Kane	Gunner McCain*
Kevin Eaton	Craig Jewett*
Angela McGuire	Brad Fischer

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

April 16, 2024	2-4 PM
May 21, 2024	2-4 PM
June 18, 2024	2-4 PM
July 16, 2024	2-4 PM
September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the February 20, 2024 meeting were accepted as drafted with one spelling correction.

Updates:

Bruce said that a few administrative corrections to the 2023 version of the Water Supply and Wastewater Disposal System Rules (WW Rules) are needed. The Regional Office staff and others have made a detailed review, and the proposed changes are ready for adoption. Bruce said that because the needed changes are minor administrative changes, he does not think that a full public process review will be required.

The municipal connection study group will gear up in April. The study group is created by section 25 of S.100 that was passed by the Legislature in 2023.

Innovative/Alternative Technologies:

Cristin reported that the Premier Tech Ltd. application for the Ecoflo Linear Biofilter System is now complete and the approval for use will be issued soon.

Cristin said that two technologies have recently applied for approval. The proposals should be ready for discussion at the next TAC meeting.

Rule Update:

Bruce said that he would like to start the rule update process with a review and listening session beginning with the soil and site issues.

Isolation Distances - between wastewater components and various features and objects as given in Table 9-3 of the WW Rules:

Curtain Drains: Craig H. commented that the WW Rules require curtain drains to be located at least 75' downslope of leachfields, while leachfields only need 50' of separation from surface water. Gunner thought this might be because of the concentrated discharge from the pipe in the drain to the ground surface, while the subsurface flow through soil into a surface water would be more diffuse. Ernie agreed.

Drainage Swales and Ditches: Sheri asked about the differences between ditches with seeps and without when located downslope of a leachfield. Seeps are based on

observation and might or might not be present during all portions of the year. Ernie said that the decision is based on whether the bottom of the ditch is above or below the water table. Craig H. suggested using the Seasonal High-Water Table (SHWT) in the ditch. Sheri said deciding between the two categories sems subjective and suggested treating all ditches the same. Gunner noted that digging in road ditches is risky because of the potential for buried pipes and utility cables.

Foundation Drains: There were no comments.

Stormwater Conveyances: The Department of Environmental Conservation (DEC) is working on a guidance document that would define a swale or ditch as a stormwater conveyance, only if there is a stormwater permit that covers the swale or ditch. In addition to concerns about the discharge from a stormwater conveyance to a surface water, there are also concerns about leakage into the groundwater below the conveyance either from the bottom of the ditch or swale or from the retention pond or injection well. Table 11-1 has separate categories for lined and unlined systems. Craig J. suggested a two-year time of travel approach that could be used on a case-by-case basis should be included.

Surface Water: Bruce noted that the distance is measured from the normal high-water level. Steve mentioned that there is a definition of normal high-water level in the WW Rules. Ernie said the definition is based on discussion with the DEC Watershed Management Program. There is also a footnote (2) in Table 9-3 that requires an allowance for future widening of a stream due to bank erosion. Sheri commented that the definition is not always easy to apply and should be improved. Gunner said that he has concerns about using the 50' isolation to surface water when the surface water in question is a small swimming pond and suggested that the isolation distance to a small non-flowing surface water should be increased.

Ground Slope:

The ground slope limitations are given in section §1-903(d) of the WW Rules. There are two categories based on when the lot was created. 10 V.S.A. 1978(15)(d) limits the maximum ground slope in the area where the wastewater system is constructed to 20% for lots created after June 13, 2002. This limitation does not apply to replacement systems. Systems on lots created prior to June 14, 2002 may be constructed on slopes up to 30%. When a system will be constructed on slopes exceeding 20%, the design must include additional instructions on construction methods and erosion control. The TAC said that the 20% restriction is not supported by engineering requirements. They also said

that the difficulty of construction on steeper slopes has been minimized with the use of tracked excavators in lieu of rubber tired backhoes. With proper construction, erosion is not a problem on slopes up to 30%. Replacement systems have been successfully constructed on slopes steeper than 30%.

Water Supplies:

There were no comments on the isolation distances between wastewater disposal systems and bedrock wells, unconfined wells, or public wells. There is also a specified distance between a wastewater disposal system and a non-potable water supply well. Roger asked whether this allowed for installation of a "spite well" intended to prevent development on neighboring property. Jeff said that he has not seen any recent problems with "spite wells." Even though the construction of the non-potable well does not need a permit, a drilled well must be registered and the isolation distance provides some protection to the aquifer.

Bruce said one concern is how to ensure proper abandonment of a well. The WW Rules specify the steps involved in closing a well, but many landowners are reluctant to close a well either because of cost or because of possible future use for non-potable water.

There were no comments about isolation distances to water lines or buried water storage tanks.

Other Isolation Distances:

Sheri said that the roadway versus driveway is sometimes confusing.

Gunner asked why if a building can be 20' to a property line the wastewater system must be 25'.

Bruce raised a question of measurements of isolation distances to the basal area in mounds. §1-921(f, h, and i) specify how to calculate the minimum basal area. The effective basal area is usually larger than the minimum basal area and The WW Rules state that measurements are from the effective basal area. Some clarification can be added.

Soil Evaluation:

Bruce asked if the current definition of the Seasonal High-Water Table (SHWT) is appropriate. Craig H. said this ties into whether the SHWT should be determined by a single spot in a test pit and whether the most limiting test pit in an area should be the basis of a design. Craig J. said that Regional Engineers generally used the highest mottle in pit which has been standard practice for many years unless there is clear evidence to the contrary. Suggestions included looking at an average of several points in a pit and over a number of pits in a particular area or discarding the highest reading in a pit. Also mentioned was using the United States Department of Agriculture (USDA) approach to determine if a mottle (color splotch different than the primary soil color) is a redoximorphic feature (created by the alternating presence and absence of saturated conditions in the soil that indicates a SHWT) or not. This would require additional training but would make the site evaluation more science based. The use of groundwater monitoring to determine the SHWT was discussed. Cristin said that a hydrogeologist should be involved before starting the monitoring to ensure that the results will be valid.

Bruce asked if the minimum number of test pits required in the WW Rules is appropriate. Some TAC members said they almost always do more. Sheri said that digging test pits in clay soils can create preferential flow paths and if the clay soils appear to be uniform across the area, the location and number of pits should take this into consideration. The TAC said that the number of pits needed is dependent on the site-specific conditions and the minimum number of pits specified in the WW Rules only work in ideal conditions.

Bruce asked if anyone is using soil augers as the primary method of soil evaluation. The group said that while auger readings are sometimes used, they are always in addition to test pits.

Bruce asked if the requirement to document the test pit examinations using the Natural Resources Conservation Service (NRCS) methods is useful. The use of this method was first required in the April 12, 2019 version of the WW Rules. Craig H. asked if the Regional Engineers had an opinion. Cristin said that the use of the NRCS method has been useful for designers who understand how the information can be used. Terry said that a large portion of the new systems approved are simple mound designs and most designers can use the NRCS method well enough to produce a good design. Some designers are not yet experts when a detailed application of the NRCS method is needed to calculate whether the system will function correctly. Steve said that he is always happy to see test pit logs that include an evaluation of the soil structure because it is directly related to how wastewater will flow through the soil.

Bruce displayed some very preliminary tables showing the relationship between soil textures, depth to SHWT, and depth to bedrock and to the type of system that could be constructed. The TAC is very interested in this topic, and it will be discussed in detail in the future. Jeff noted that one special concern relates to sites with a shallow depth of coarse textured soil to fractured bedrock. Well drillers have learned that if a wastewater system is installed too close to the bedrock the effluent may enter the fractured bedrock and move quickly to a drilled well potable water supply.

Bruce asked for comments on table 9-2 that specifies the loading rate in gallons per square foot of leachfield per day based on soil texture. Sheri suggested that silt loams, and some other textures, should be split into two or more categories.

New Business:

Ken asked that the TAC consider how best to deal with an ongoing problem for well drillers. The concern is that many permits are issued with a requirement that the water supply be a well drilled into bedrock because the well-leachfield separation distance is based on the use of a well drilled into bedrock. In some cases, when the well is drilled, an adequate amount of water is found in the unconsolidated material above bedrock. The WW Rules allow for use of a well in unconsolidated material, with the same isolation distances as a bedrock well, when the water bearing layer meets the definition of being a confined surficial aquifer per §1-201(19) of the WW Rules. At the present time, a permit amendment or a certification by a Licensed Designer that the change in plans meets all of the WW Rules is required. Because the underground situation is usually unknown until the well drilling is underway, the current practice can create expensive delays. Possible solutions include adding information to the plans to allow use of a bedrock well or a well that taps a confined surficial aquifer. A procedure might be developed that well drillers would follow to determine if the confined surficial aquifer conditions are met, and the determination could be documented in the well drillers report.

Approved Minutes of the Technical Advisory Committee Meeting

April 16, 2024

Participation by videoconference

Attendees:

Sharon Bissell	Bruce Douglas*
Brad Fischer	Gunner McCain*
Craig Heindel*	Craig Jewett*
Roger Thompson*	Jared Willey*
Kevin Eaton	Steve Revell*
Eric Deratzian	Terry Shearer
Frederic Larsen	Tom DeBell*
Megan Kane	Sille Larsen*
Angela McGuire	Kelsey McWilliams
Cristin Ashmankas*	Denise Johnson-Terk
Ken White*	

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

May 21, 2024	2-4 PM
June 18, 2024	2-4 PM
July 16, 2024	2-4 PM
September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the March 19, 2024 meeting were accepted as drafted.

Updates:

The administrative process for correcting minor errors in the 2023 version of the Wastewater System and Potable Water Supply Rules (WW Rules) is moving forward. A few mistakes that existed in the 2019 version of the WW Rules that were not proposed for correction in the 2023 version cannot be corrected using the administrative approach. These will be covered in the next revision to the WW Rules.

I/A Technologies:

Cristin said that the Ecoflo Linear Biofilter has been approved as a distribution system without requiring the use of pressure distribution or addition of sand under the system. It has also been approved as a treatment system with the use of pressure distribution and a layer of sand under the system.

The use of crushed glass as an alternative to mound sand will be approved in the next week or two.

The Enereua™ Systems Group has submitted an application for systems that allow reuse of treated wastewater. This should be ready for discussion at the next TAC meeting.

The processing of renewal applications for I/A Technologies is moving quickly and will be completed soon.

Gunner asked about the process for replacing the peat in the Ecoflo Linear Bioflow System. He said that the system needs to have the peat replaced every 7 years or so and that there is no easy method. Cristin said that the company is now claiming the peat will last for 10-20 years before needing replacement. The company describes the process as removing the soil cover, removing the top of the chamber, removing the bales of used peat, and then reassembling with new bales of peat.

Proposed WW Rule Revisions:

Bruce continued the review process with a discussion of Wastewater System Design factors for soil-based systems.

Wastewater Design Flows:

The TAC agreed with the current design flows. Kevin noted that projects doing food preparation trigger the need for a grease trap even when the specific operation would produce little or no grease. Terry said that this particularly occurs for beer and wine tasting operations where the licensing process requires a minimum food service. The food service usually provided does not generate much grease.

Wastewater System Components:

Septic Tanks: Bruce noted that most septic tank alternatives based on material other than concrete no longer need individual confirmation letters per the WW Rules. The group said that septic tank sizes seem appropriate. Cristin said there is push back for some non-residential projects with very low flows. A reduction in size can be granted if the designer proposes a smaller tank that will hold at least two days of design flow. Steve and Craig H. said they have seen no evidence of failures related to undersized septic tanks. Bruce said that one state has added a requirement that when using a plastic riser and cover an inner cover also be installed with a weight of at least 59 lbs. Bruce asked if Vermont should consider this. Craig J. suggested that the permit require operation in accord with the manufacturer's specification that the covers be screwed to the riser. Jared said that his company opens thousands of tanks per year and the covers all have capacity to be fastened shut and that most are. He noted that adding a second cover, such as a concrete cover supplied with a concrete tank, would interfere with the pump controls, alarms, and wiring that is usually installed in the riser. Bruce asked if designers are doing buoyancy calculations and was informed that they are.

Grease Traps: The current WW Rules reference the 1997 version of the Uniform Plumbing Code, and it may be time to update to the current version. The current WW Rules state that the discharge from the grease trap shall be to the septic tank prior to discharging to a leachfield. While the WW Rules are not explicit, a grease trap should be used when the discharge is to a municipal connection line and the revised rules should clarify when a grease trap is needed.

Pump Stations: Craig J. noted that the WW Rules require the pump station to be operable and accessible during a 25-year flood. He asked who determines what the 25-year flood elevation is at any particular location. He also said that the review of community collection systems with pump stations use the same requirements and might have information that can be used. Bruce asked if the WW Rules should be more explicit about the levels for pump controls and alarms for use by installers. Roger said that the information should be on the approved plans which the installers normally work from.

Jared noted that the WW Rules do not require a low-level alarm. The issue of requiring periodic pumping was discussed. There are concerns about enforcement, but the issue could be covered in an informational handout. Steve said that he asks that the pump station be checked and pumped if needed at the same time as the septic tank.

Dosing Siphons: The group supports the existing requirements. Steve noted that it is very important to install a vent to allow the siphon to function properly. Cristin said that this is a design area where deference is given to the designer.

Non-proprietary treatment systems**:** Bruce asked if any of the intermittent and recirculating sand filters approved in §1-924 of the WW Rules are being constructed. Jared said that a small number, primarily by one designer, are still being permitted and constructed. He said that there are quite a few legacy recirculating sand filters that are being remediated, some using 3/8" clean crushed stone that is not providing as good treatment as the original installations.

Constructed Wetlands: Cristin recommends removing this option from the WW Rules. There are about 50 systems in use. They are expensive to maintain, and the treatment performance is not reliable. Jared confirmed this assessment based on systems he has inspected.

Simplified Method of Completing a Hydrogeologic Analysis: Steve said the method seems to be working as intended. Kevin asked about situations where a mound system hydrogeologic analysis would not require a full 12" of mound sand under the system to meet the 24" of separation to the Seasonal High-Water Table (SHWT). Steve noted that the TAC had discussed this issue in the past and decided to maintain the minimum of 12" of sand. Bruce explained that using 12" of sand allowed for the rough surface caused by the plowing and helps ensure that there would be at least some sand over the top of native soil. There is a grant that the Drinking Water and Groundwater Protection Division has received from the Lake Champlain Basin Program to characterize hydraulic conductivities in the fine-grained soils common in Addison County to determine if the categories that currently do not allow for any construction might be split into two or more subcategories, one or more of which might be useable at low application rates.

Effluent Distribution: Bruce asked if field installations include access risers to distribution boxes as required. Roger and Steve said yes. The dosing requirements seem to be OK. Cristin noted that the inspection report needs to include a photo showing proper distribution of effluent during operation of the system. Gunner noted that most systems with a low daily design flow that are designed to meet the minimum of 4 doses

per day, do not achieve the four dose per day because the actual flow is usually significantly less than the design flow. Because the distribution piping needs a certain amount of volume to fill and reach distribution pressure, it is not practical to design for more than four doses per day. Jared said that he is seeing good performance for both old and new dosing systems.

Time Dosing: Gunner said he only uses it for bottomless sand filters. Bruce said he would like to add a diagram to the WW Rules that would provide design guidance.

Flow Equalization: Bruce asked if designers are using this approach. They are but only rarely.

Storage and Dose: Bruce asked if this design approach should be retained. It was agreed that this would only apply to a very specific type of project, but it does not appear to be worth removing at this time.

Trenches Versus Beds: Bruce noted the concerns about oxygen transfer in the soil under the system that becomes less effective as the width increases. A study looking at pressure distribution versus gravity flow found more failures in bed systems using gravity distribution.

Window Systems: Bruce noted that the current WW Rules allow a shallow placed window system where the crushed stone is partly in the limiting soil layer and partly in the complying soils below to be installed with the crushed stone in contact with the limiting soils layer. He asked if there should be a sand border between the limiting layer and the crushed stone. See Figures C-7 and C-8 for details. Steve supported the use of a sand border.

At-Grade Systems: These are seldom used. Steve said just build a mound system which has the additional benefit of not requiring a replacement system area or design.

Mound Basal Area: The language needs to be clarified so that there is no confusion about where to measure from when checking isolation distances.

Bottomless Sand Filters: Bruce asked if there is enough evidence of successful operation that the annual inspection requirement can be removed. Craig H. asked if these can be used when the receiving layer is a finer grained soil. Cristin stated that they can be approved when a variance is allowed when using the mound system loading rates. Jared said that now that the Compliance Section is doing a great job of notifying owners that

inspections are required it should be clarified that Service Providers can do the work. Cristin said that Service Providers can do the annual inspections including checking for seepage at the toe of the system. Jared reported that some of the longer systems, particularly the older ones, do not have adequate support for the above grade walls of the system. Common steel rods can rust through, and the number may be insufficient. Kevin asked about the sidewall penetrations when adding rods. Jared said that some form of liner repair is needed and that there are sealing tapes that seem to be working. In addition, most of the rods are installed above the water level.

Subsurface Drip: There was discussion about how to test the distribution system. It is difficult to evaluate the flow from each emitter. Jared said that with the use of commercially available drip line there is a standardized flow from each emitter. Using a flow meter, it can be determined if the total flow through the tested portion of the system meets the calculated flow of the emitters. If the flow is too high or too low, there is a problem that must be corrected.

Replacement Areas: There were no comments.

Holding Tanks: There were no comments.

Composting Toilets: The siting requirements for moldering toilets need to be clarified.

Urine Diversion System: These can be approved. There is one organization that collects urine from storage tanks and uses it as fertilizer.

Other Issues:

Cristin suggests a discussion on wastewater reuse systems.

Sille said that she is discussing temporary discharges with folks in New Hampshire. She has shared that information with Nate Kie as it relates to Underground Injection Control permitting.

Tom asked about water treatment systems. Bruce said this would be included when we review the water supply portion of the WW Rules.

May 21, 2024

Participation by videoconference

Attendees:	Sharon Bissell	Cristin Ashmankas*
	Roger Thompson*	Denise Johnson-Terk
	Kevin Eaton	Julia Beaudoin
	Megan Kane	Gunner McCain*
	Jared Willey*	Bruce Douglas*
	Ken White*	Tom DeBell*
	Steve Revell*	Terry Shearer
	Catherina Narigon	Claude Chevalier
	Sheri Young*	Eric Deratzian
	Sille Larsen*	Jen Fleckenstein*
	Frederic Larsen	

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

June 18, 2024	2-4 PM
July 16, 2024	2-4 PM
September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the April 18, 2024 meeting were accepted minor wording changes.

Updates:

The administrative process for correcting minor errors in the 2023 version of the Wastewater System and Potable Water Supply Rules (WW Rules) is continuing. Bruce repeated his comments from previous meetings that a few mistakes that existed in the 2019 version of the WW Rules, that were not proposed for correction in the 2023 version, cannot be corrected using the administrative approach. These will be covered in the next revision to the WW Rules. Bruce said that the legal review is complete, and that he will do his final review in the next week or two. Bruce will see if people who purchased hard copies of the 2023 version of the WW Rules will be able to get free copies of the corrected version once it has been approved.

I/A Technologies:

Sheri asked for a clarification about the approval for the Ecoflo Linear Biofilter. Sheri asked if the non-pressure distribution version of the system can use double the standard application rate. Cristin said that the increased loading rate without pressure distribution is approved, while any reduction in separation to the water table is limited to systems using pressure distribution.

Cristin sent the Chittenden Solid Waste District a draft approval for the use of crushed glass as the filtration media in mound systems.

Proposed WW Rule Revisions:

Bruce led a discussion of the portion of the WW Rules related to the sources of potable water. The distribution requirements will be discussed at the next meeting.

One task is to update the definition in the WW Rules. The existing definition of potable water states: …water used or intended to be used for human consumption, including drinking, washing, bathing, the preparation of food, or laundering. Sheri asked about the requirement that water used for laundering be potable, saying that some people with limited water systems do not use potable water for laundering. Claude supported this comment. This issue has been discussed during previous WW Rule updates. Based on concerns related to exposure to clothing contaminated with pathogens, it was decided during the previous discussions that requiring potable water for laundering is a reasonable requirement.

Sheri asked about using rainwater collection systems for potable water use. Bruce pointed out that this is not currently allowed because of the difficulty of ensuring that the water meets the quality standards for potable water. Roger asked if the use of water storage tanks replenished with trucked water should be considered. Kevin said that getting clean water in a truck is easier than from a rainwater collection system.

Tom asked if it is considered to be a potable water supply if it does not pass a quality test. It would be a failed supply as defined in the WW Rules. Sille noted that lack of sufficient quantity also meets the definition of being a failed supply.

The definitions related to potable water sources were discussed. Julia asked about classifying springs as surface water sources. The group agreed that the definition should be clarified. Ken said the definitions for confined and unconfined aquifers can be improved. Bruce talked about the requirement related to bedrock wells. Ken noted it should be competent bedrock and Claude added that even competent bedrock can have voids that must be dealt with. Julia asked about the definition of bedrock and if it includes soft crumbly materials. The group agreed that the issue of when a material should be considered soil and when it is bedrock should be discussed and better defined in a revised WW Rule.

The use of surface water sources was discussed. §1-1102(d) limits the use of surface water sources for potable water sources subject to the WW Rules. They may serve only one single-family, owner-occupied dwelling. They are also limited to lakes and ponds approved by the Watershed Management Division and Lake Champlain excluding St. Albans Bay, Missisquoi Bay, and portions from the Lake Champlain Bridge south. Streams shall not be used as a potable water source except with a variance for a failed supply.

Water treatment systems are required if the source water quality exceeds the standards in the WW Rules. The WW Rules specify the level of treatment required, but in most cases the design, installation, and operation of the treatment system does not require approval under the WW Rules.

Bruce asked if well points, jetted wells, infiltration galleries, and cisterns should be added to the list of potable water source types. Claude suggested clarifying that drilled wells may or may not be constructed in bedrock. Claude also suggested that the artesian well definition should indicate that the water overflows onto the ground surface. The group discussed this and thinks that the scientific definition only requires that the water level rise above the level where the water is encountered in the ground. The category for driven wells was discussed. Cristin reported that most driven wells that she encountered are not very deep and are hand installed. Claude said that he constructs driven wells with his drilling equipment using special fixtures.

Diagram C-18 was reviewed. One suggestion was that even though this, and other diagrams are labeled as typical examples, clarifying that not all the details in the diagram are always needed.

Surface water intakes were discussed. Bruce noted that all surface water systems with intakes that are less than 20' below the mean water level of the source require treatment for turbidity and cyanobacteria. Cristin said that the proposed treatment for turbidity and cyanobacteria must be reviewed and approved as part of the permitting process because it is not included in the exemption for water treatment systems.

Gunner said that §1-1102(b) should be revised to allow for an addition well to be constructed when none of its presumptive isolation zones extend onto another person's land, even if the isolation zones for an existing well do.

Bruce said that he would like to clarify items including:

1. The static water level in the well varies over time and with nearby water withdrawals.

2. The process for long-term yield testing should be reviewed.

3. The process for determining whether there is interference between two or more wells and when it is a problem should be reviewed.

4. The section on Instantaneous Peak Demand (IPD) is unclear as to whether the first of the three required flow measurements may be taken at the start of the test or only after 30 minutes of pumping.

Water quality testing was discussed. Tom noted that the WW Rules only require a one-time test, while there is clear evidence that the water quality may change over time, particularly during the early use of a water source. Tom asked if there should be a change in the testing requirements if the initial test found contaminants at or near the regulatory standard. Sille said that in addition to the standards given in the WW Rules, the Vermont Health Department has adopted action standards such as the requirement that all schools act whenever lead levels exceed 4 parts per billion even though the level is set at 15 parts per billion in the WW Rules. Cristin asked that odor be returned to the list of required tests. Sheri objected, saying that it had been a major problem in the past adding to the cost and time of permitting. Cristin said that odor can be

a good indicator of a need to test for volatile organic compounds (VOC). The Vermont Department of Health also objected to adding odor to the list of required tests.

Gunner asked about the time requirement in permits for the replacement of failed systems. The standard language says the replacement system must be installed within 3 months during the construction season. He said that finding a contractor to do the installation in less than 6 months is difficult and suggested the standard language should allow one year to complete the repair. Sheri agreed, saying that even 6 months is often not long enough to arrange for construction of the replacement system. Cristin said that a year is a long time to allow the continued operation of a failed system that might be surfacing, discharging into surface waters, or threatening a potable water source. Cristin said that extensions are routinely offered based on case-by-case review. Gunner said that a request for an extension is usually prepared by a Licensed Designer at some cost to the applicant.

Bruce said that he would like to review the section on closure of abandoned wells to see if there are reasonable methods to ensure better compliance.

June 18, 2024

Participation by videoconference

Attendees:

Sharon Bissell	Nate Kie
Cristin Ashmankas*	Mark Bannon
Jen Fleckenstein*	Sheri Young*
Ken White*	Roger Thompson*
Craig Heindel	Jeff Williams
Bruce Douglas*	Kevin Eaton
Eric Deratzian	Terry Shearer
Tom DeBell*	Frederic Larsen
Craig Jewett	Julia Beaudoin
Gunner McCain*	Steve Revell*
Claude Chevalier	Ernie Christianson*
Sille Larsen*	Megan Kane

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

July 16, 2024	2-4 PM
September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the May 21, 2024 meeting were accepted with some minor wording changes and with a comment that the Vermont Health Department objected to reintroducing the odor test to the list of required water quality tests.

I/A Technology:

Cristin reported that a pilot approval for the construction of up to 25 systems using crushed glass in lieu of mound sand has been issued to the Chittenden Solid Waste District. Best management practices for transportation, installation, etc. need to be developed. Sheri asked if any installations have been done and Cristin said that no one is ready to file an application at this time. Sheri asked if a Professional Engineer must be the designer and Cristin said that any Class B or higher Licensed Designer can do the design, installation and operational inspections. The approval document is posted on the DEC website for Innovative/Alternative Systems.

Municipal Water and Sewer Connection Stakeholders Group:

Bruce said that this group, which was created by Legislative direction, is charged with looking at the permitting process for connections to municipal water and wastewater systems to determine if there are redundant permitting processes, and if the overlap can be reduced or eliminated. There is a diverse group of members including 4 community members, 2 Professional Engineers, Bryan Redmond, the Vermont Natural Resources Committee, the Vermont Agency of Housing and Community Affairs, and Bruce. Sille Larsen is facilitating the meetings, and the Division's Legal Counsel, Catherina Narigon, is attending the meetings and will be contributing to the report. The group began with a survey of all the permits or reviews required at the State and local levels. Bruce has assembled a flow chart of the State process. Cristin's group has summarized the data for how many State permits are issued each year that are based on connection to both municipal water and wastewater systems. The first of 3 meetings has been held.

Update of Wastewater System and Potable Water Supply Rules (WW Rules):

Bruce reported that the process for making minor corrections to the 2023 version of the WW Rules has been delayed because the staff is overloaded with ongoing work. He expects the proposed revisions will be filed in July and that this will be an administrative update that does not require the full public process needed for major updates.

Potable Water Supply Design:

Bruce said the definitions #106, #107, and #108 of the WW Rules define various portions of the water supply distribution piping. Water mains are the piping that is regulated by the Public

Water Supply Rules. Water service pipes extend from a water main to a building, structure or campground. Water service pipes extend from a potable water supply system to a building, structure, or campground. The definitions should be clarified as to how more than one building, structure, or campsite can be connected.

The definition of design flow was discussed. Craig J. noted that some portions of some municipal systems do not meet the required 35 PSI pressure in the main.

Grouting of wells was discussed. Jeff said that detailed specifications for grout material is not needed. Jeff asked if the WW Rules should require that all wells be grouted. Craig J. said that the decision to grout should be left up to the well driller unless some specific contamination such as per- and polyfluoroalkyl substances (PFAS) is known to be present. Tom said that grouting does provide some protection to the well and the aquifer during flooding events. Claude asked if there are examples of PFAS contamination in drilled wells that are not grouted. Sille said that PFAS are a concern but that there are no detailed requirements on how to respond but the extent of groundwater aquifer contamination is being evaluated. Craig H. asked if the evaluation is publicly available. Sille said it is not because of ongoing legal action. Ken said that grouting makes sense in areas of known contamination but not for every well. Grouting is not possible with the concentric drilling method which is commonly used.

Booster Pumps:

Booster pumps may have interior or exterior installations. Bruce talked with G. J. Garrow about the Vermont Plumbing Rules and interior installations are regulated under the Plumbing Rules. Craig J. said that booster pumps that connect to municipal water systems are no longer being approved by the Department of Environmental Conservation (DEC). Towns should update their regulations to conform to the DEC requirements.

Pipes and Pumps:

Several types of well pumps and their installations were discussed. Craig H. asked if jet pumps should have a specific reference in the WW Rules. Claude suggested that putting more than one well pump in a well should be prohibited because any well service of the deeper pump requires removing both and because there is no appropriate way to attach the wiring to the riser pipes or install torque arresters. Jeff said he is having success with 2 pumps in one well by using 6.5” well casing and 3” pumps. He installs disconnects at the top of the well and can pull each pump separately. He often gets requests to install 2 pumps when a well is shared by two or more users so that each is responsible only for their portion of the system. Claude noted that having two pumps in a well prevents installation of torque arresters. These details will need to be

worked out in the next phase of the WW Rule update when the specific details of each section are decided.

Roger asked if a building can have a water system with both public and non-public sources. Simply having a couple of valves to switch between sources is an inadequate level of protection for the public water supply. Ernie said that some municipalities disconnect from buildings that also have a non-public source connection.

Disinfection of the well and piping was discussed. Tom said that 8-12 hours is adequate if the chlorine level is correct. He said that the chlorine dosage into the well needs to be enough to ensure that all portions of the piping reaches 100 mg/l and that the discharge from every fixture needs to be individually checked to ensure full disinfection. Bruce asked if the AWWA C652 standard referenced in the WW Rules is reasonable and whether every installer/service provider can afford to have a copy. Cristin said that a PDF copy is available for free. Tom said that the Vermont Health Department developed standards for disinfection of springs after they have been flooded.

Craig J. said that the fire suppression code requires a greater burial depth for water lines that serve fire suppression systems.

Drilled well installations were also reviewed. Claude noted the requirement that drilled wells be installed at least 10’ into competent bedrock and asked about a situation where the well is drilled through 100’ of clay and then 3’ into bedrock. Cristin said that this is covered by the process that allows for alternative installations when the soil type and/or artesian conditions protect the well. Craig J. talked about installation certifications and that designers should not certify what the well driller does because the work cannot be checked. He thinks that the well driller should certify that part of the installation. Mark said that some well drillers are reluctant to write certifications. Gunner said that there will be an additional charge by the well driller for writing the certification. Cristin pointed out that because the certifications are done electronically using forms created by the DEC it would not add much work. Sheri asked if some wells must be tested before doing the installation certification. Cristin said that while quality testing is required it can be done after the installation certification is written.

The group discussed the issues related to a permit that specifies a well type when during construction a different well type might be suitable. Typically, this a permit calling for a bedrock well with isolation distances based on that type of construction. A change in well type might or might not require increased isolation distances based on site specific conditions. Changes to the WW Rules and to the language in permits might resolve this, though it will likely transfer more responsibility to the well driller unless a Licensed Designer is involved. Craig J. noted that some

changes would require an updated overshadowing notification. The requirement for a waiting period associated with the notification will need to be addressed.

Mound Sand:

Sheri said the WW Rules should be amended to allow for use of sand meeting the specifications in the Rules or equivalent material such as crushed glass.

Approved Minutes of the Technical Advisory Committee Meeting

July 16, 2024

Participation by videoconference

Attendees:

Bruce Douglas*	Eric Deratzian
Sheri Young*	Steve Revell*
Craig Heindel*	Roger Thompson*
Cristin Ashmankas*	Sille Larsen*
Frederic Larsen	Craig Jewett*
Jeanne Allen	Megan Kane
Kevin Eaton	Gunner McCain*
Cristian Jablonski	Terry Shearer
Denise Johnson-Terk	Sheryl Ervin
Jared Willey	

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

September 17, 2024	2-4 PM
October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the June 19, 2024 meeting were accepted as drafted.

Updates:

Bruce said that the proposed rule corrections have been submitted to the Secretary of States Office. They will review and either approve or deny. Approval is expected. Bruce will send copies of the revised WW Rules to the TAC.

Innovative/Alternative (I/A) Technology:

Cristin said that there were no applications ready for review by the Technical Advisory Committee (TAC).

I/A Rules, Subchapter 4 of the Wastewater System and Potable Water Supply Rules (WW Rules):

Cristin noted that Vermont Statute 10 V.S.A. §1978 provides direction on how I/A technology should be included in the WW Rules. The statute specifies that several systems including sand filters and constructed wetlands shall be approved for use and prohibits a requirement for a bond or immediate construction of a backup system when the I/A system is approved for routine use. The 2002 version of the WW Rules included generic requirements for sand filters and constructed wetlands and these systems do not require an individual I/A approval.

The group briefly discussed the classification of wastewater from a residence and the difference between gray water and black water. The usual separation is to classify toilet wastewater as black water and everything else as gray water. In the WW Rules, all wastewater that includes pathogens, which is all the water from bathing, laundry, food preparation, and other household use, is subject to the same requirements. Gunner suggested adding a definition making it clear that black water and gray water are both subject to the same requirements.

Sheri asked about reuse of treated water and mentioned the treatment system at the Sharon Rest Area. The rest area has an advanced treatment system, and the treated wastewater is used for toilets. Apparently, no annual reports on the operation of the system have been submitted. Cristin said that the I/A approval process can allow for reuse for toilet flushing if there is separate water supply piping for the toilets. Bruce said that the Vermont Plumbing Board may have some information about the effects of reuse on toilet fixtures. The TAC wants to discuss gray water reuse in more detail.

Cristin reviewed some of the requirements for filtrate effluent systems. She noted that while there is a standard that requires reduction of Biological Oxygen Demand (BOD) to no

more than 30 mg/l and reduction of Total Dissolved Solids (TDS) to no more than 30 mg/l, there is no maximum for the total amount of fat, oil, and grease (FOG) in the filtrate effluent.

Bruce discussed the separation requirements for mound system applying filtrate effluent. There must be at least 6" of unsaturated soil above the induced ground water level at the toe of the mound. When installed, the bottom of the crushed stone or other distribution method such as leaching chambers or drip dispersal, shall be at least 18" above the induced water table.

Bruce asked for comments on §1-402 for general approval, §1-403 for pilot approval, and §1-404 for experimental approval. Cristin said that every applicant wants general use approval but unless there is testing and use experience in locations with climate conditions like those in Vermont, she offers pilot or experimental approvals depending on how much information the applicant can provide. Bruce said that it requires a lot of work for a full review of a proposed technology and that, in Vermont, there is no fee to the vendor required for this work. Sheryl Ervin asked if load testing, such as H-10 wheel loading, changed the approval category. The answer to Sheryl's question was no. Approval letters for use of substitute products such as effluent filters and distribution methods are no longer required. Craig J. said that it would be helpful if the WW Rules made it clear when approval letters are no longer required.

Prefabricated pump stations were discussed. Jared said that they are distribution methods covered under the WW Rules. Craig H. asked if some systems are not covered. Jared said that the Orenco Company has a prefabricated pump station, including the electronic controls, and asked when systems need an I/A approval. Cristin replied that I/A approval is needed when the pump station does not meet the requirements of §1-1008 of the WW Rules. Bruce added that energy use is a concern, and that energy savings might justify an I/A approval. Cristin said that a system that works by evaporating all the liquid from wastewater might be subject to, and non-complying with, Federal Air Quality Standards.

Jared asked if using ultraviolet disinfection requires I/A approval. Cristin replied that the use of ultraviolet light is included in the WW Rules for potable water treatment. An I/A permit is needed for use to treat wastewater. Craig H. said he supports Cristin's statement that use of ultraviolet disinfection on wastewater does not result in an approvable system when the disposal site does not meet the required isolation distance in the WW Rules. Jared noted that ultraviolet disinfection is widely used on water systems with a lake water source. Bruce and Cristin said that future discussion of ultraviolet disinfection is needed.

Drip dispersal was discussed. It was noted that the WW Rules require advanced treatment of the wastewater before discharge into a drip dispersal system while there are drip dispersal

systems with I/A approval that do not require advanced treatment. This is allowed because the I/A approval for the system includes a determination that the specific configuration of the drip dispersal system will operate in compliance with the WW Rules without requiring pretreatment to advanced treatment standards.

The design and operation of I/A systems was discussed. I/A systems may be designed by Class 1 Licensed Designers. Class B(W) Licensed Designers may design I/A systems approved for General Use except those used to reduce waste-water strength from high to low strength or those systems that specifically require that the design be prepared by a Class 1 designer. Class A Designers are not approved to I/A systems unless the approval specifically allows for a design by a Class A Designer. The inspection reports required for a system with an I/A approval must be filed online as are the installation certifications. The systems are tracked and if the report is more than one year overdue a referral to the compliance section can be made. An attempt at voluntary compliance is made first and it is usually successful. Cristin would like to have a process where if a particular approval product is later approved for less frequent inspections, the reduction would automatically apply to older permits.

There has been an increase in the use of I/A systems. There has been an increase in compliance with the inspection requirements. Some failures to report are because there was a change in ownership and the new owner is unaware of the requirement. Cristin is working on a process to ensure that a new owner is informed about the operation and inspection requirements. Gunner noted that the tracking system indicates that more I/A systems are being approved than inspection reports are being filed. Cristin said that not all I/A systems need inspection reports, including some that are commonly used.

Cristin said that there are several systems that have been approved for use in Vermont that have never been used. There are concerns about the effort needed to process the renewal of these products if they are never used. Some vendors maintain the approval to demonstrate a large number of approvals by various states.

Construction deadlines were discussed. One category would include all new permits. This would be a major revision of the past approach where a permit remains in effect unless revoked. This approach is not being promoted or supported by the Department of Environmental Conservation (DEC).

Sheri said that there should be a limited process to switch from one I/A system to another. Cristin replied that there is a process for this type of change.

Service providers were discussed. There is an ongoing training program with a second module being prepared. One goal is that with additional training a service provider will be able to work with many different I/A systems. Sheryl noted that the paperwork involved can be a burden. Cristin said that moving all the work online should reduce the time required. The current approach requires vendors to approve installers and service providers. This is sometimes difficult for vendors, but some vendors require this as part of providing a warranty for their system. Craig H. suggested forming a subcommittee to work on this topic. Jared said that the cost of doing operating and maintenance is going up, but the work is needed both to keep the systems operating and to comply with permit conditions. Cristin said that potential owners of I/A systems need to know the requirements and expected costs for using a particular I/A. Sheri said that people pumping septic tanks are a potential source of service providers. Cristin said that some are already approved as service providers. There may also be installers who would like to become service providers.

The Department of Environmental Conservation (DEC) is also looking at the energy efficiency of I/A systems. There are more passive systems approved than before and some which do not require electricity if the distribution system can operate by gravity flow.

Bruce discussed two recent court decisions. The cases are:

1. VT Supreme Court: "In re DJK, LLC WW & WS Permit"; https://www.vermontjudiciary.org/sites/default/files/documents/op22-296.pdf

2. VT Superior Court: "In re: 15 Bull Moose1 Wastewater & Water Supply Permit Appeal; https://www.vermontjudiciary.org/sites/default/files/documents/15%20Bull%20Moose%20Road%20Wastewater%20Permit%2023ENV07%20Merits%20Decision.pdf

The Vermont Supreme Court affirmed a decision upholding the issuance of a permit that complied with the WW Rules despite the objection of a neighbor based on isolation distances that extended onto their property. This is sometimes described as "overshadowing." The Vermont Supreme Court is required to review any appropriate appeal that is filed. The Court relied, in part, on a report prepared by the Technical Advisory Committee entitled A Review of the 'Overshadowing' of Water Supply-Wastewater System Isolation Distances, that was submitted to the Vermont Legislature.

In a separate case, the Vermont Environmental Court upheld a permit that complied with the WW Rules over the objection of a neighboring farmer who was concerned that the extension

of isolation distances onto their property would limit their activity. In upholding the permit, the Environmental Court noted the earlier decision by the Supreme Court. V.S.A. Title 10, Chapter 64, §1973(j) requires that neighboring property owners be notified when isolation distances for proposed water or wastewater systems extend onto their property. This is intended to inform neighboring property owners who may negotiate with the permittee but does not override the requirements in the WW Rules.

Bruce said that Jeff Williams asked if there is interest in having a training session with well drillers including observation of a well drilling rig in operation. The group would like such a session. Cristin will determine if continuing education requirements for Licensed Designers can be approved.

Gunner said that he is still working to get a practical and timely solution when a replacement for a failed wastewater system must be constructed in a wetlands buffer area. Steve said that the online Wetlands Atlas is not comprehensive, and that because of a lack of staff, it is difficult to arrange for site visits with the Wetland Program Staff so that site specific information can be used in lieu the information in the Wetlands Atlas. Bruce and Cristin are aware of the problems and DEC is working to fix the problem.

Cristin noted that she has received hydrogeologic reports submitted under a name other than that of the person who did the original work. The TAC supported the rejection of the information and encouraged the notification of the original author.

Approved Minutes of the Technical Advisory Committee Meeting

September 17, 2024

Participation by videoconference

Attendees:	Sharon Bissell	Sille Larsen*
	Denise Johnson-Terk	Bruce Douglas*
	Julia Beaudoin	Craig Heindel*
	Sheri Young*	Ernie Christianson*
	Roger Thompson*	Mark Bannon*
	Steve Revell*	Craig Jewett*
	Terry Shearer	Cristin Ashmankas*
	Frederic Larsen	Megan Kane
	Jeanne Allen	Gunner McCain*
	Tom DeBell*	Brad Fischer

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

October 15, 2024	2-4 PM
November 19, 2024	2-4 PM
December 17, 2024	2-4 PM

Agenda:

The proposed agenda was accepted as drafted. Craig H. asked about the list of 2023-2024 nominees to the Technical Advisory Committee (TAC). Bruce said that this is the list of names that will be submitted to the Governor's Office for approval after the next inauguration in January of 2025.

Minutes:

The draft minutes of the July 16, 2024 meeting were accepted with several edits for clarity.

Updates:

Bruce said that the proposed rule corrections have been approved by the Secretary of States Office. The only changes are corrections; therefore, the effective date of the Wastewater System and Potable Water Supply Rules (WW Rules) will remain November 6, 2023 with a note that corrections have been made. Bruce will notify Licensed Designers

Innovative/Alternative (I/A) Technology:

Bruce said that applications are under review and should be ready for review by the TAC at the October meeting.

Sheri said that the way that soil categories are specified in some the approvals for I/A systems does not match the categories in the Vermont WW Rules.

Rule Update Discussion:

The TAC reviewed Subchapter 7 of the WW Rules which deals with Licensed Designers. Bruce asked if the existing Subchapter appropriately covers the topics, particularly for people interested in becoming Licensed Designers. Bruce asked if sufficient training is available. Sheri said that most of the in-person training sessions are in northern or eastern portions of the State and very few in the southwestern area. Sheri said that more online training would be helpful, noting that in some cases the travel time to and from the training location exceeded the length of the training itself. Online training that can be taken on demand also makes it easier to fit into a Designer's schedule. Roger said that there is a lot of training done in New Hampshire and asked if similar training is available in New York. Sheri said it is very limited.

. Sheri asked about obtaining credit for activities done by one or a few Designers. Cristin said that she looks at these on a case-by-case basis and issues credit when it meets the requirements for continuing education. Sheri said that anyone can join the Granite State Wastewater Association that does provide some training. Bruce said that people can also join the Yankee Onsite Wastewater Association (YOWA) and the National Onsite Wastewater Recycling Association (NOWRA) that also provide training. It was noted that Vermont Licensed Designers do not have a professional association, even though most other Vermont professionals do.

Bruce asked for comments on the various sections of the subchapter and there were no comments.

Section 1-301(b)(4):

This section of the WW Rules deals with connections to existing potable water systems or wastewater disposal systems. The WW Rules limit connections to systems not currently in use to those systems that were in use within the previous four years. Bruce noted that the Governor gave a case specific extension for an existing mobile home park based on flooding damage.

Other Discussion:

Gunner said that the section for groundwater level monitoring on the Class B test consumed a lot of time. Cristin said that the exam has been revised to reduce the amount of time but will still cover the topic.

Craig H. said that there is a great deal of interest in promoting the addition of dwelling units to existing single family residences and that one difficult area is meeting the potable water system requirements. He suggested that a training session on this topic would be useful, and Steve supported his suggestion. Bruce previously reported to the TAC that there is support to update the requirements for calculating the Instantaneous Peak Demand (IPD). The proposed changes will result in a lower gallons per minute requirement, which in some cases will make adding a dwelling unit easier.

Jeff Williams is working on plans for a workshop to be provided by the Vermont Groundwater Association. A well drilling machine will be in operation. Discussion will include factors that should be considered when choosing a well site in addition to the isolation distances specified in the WW Rules.

Bruce discussed a proposed reorganization of the Drinking Water and Groundwater Protection Division. There will be three sections consisting of administrative functions, technical services, and compliance. The compliance section will have two portions. One will deal with Public Water Systems that have to meet federal requirements as well as state requirements. The other portion will cover the WW Rules, Indirect Discharge Systems, and Underground Injection Systems. Craig H. asked how the changes would affect designers, and particularly hydrogeologic evaluations. Cristin said the review will be more centralized and recommended making an early contact when developing a plan to do a hydrogeologic study.

Approved Minutes of the Technical Advisory Committee Meeting

October 15, 2024

Participation by videoconference

Attendees:	Sille Larsen*	Bruce Douglas*
	Craig Heindel*	Sheri Young*
	Ernie Christianson*	Gunner McCain*
	Roger Thompson*	Tom DeBell*
	Steve Revell*	Craig Jewett*
	Terry Shearer	Cristin Ashmankas*
	Jared Willey*	Julia Beaudoin
	Frederic Larsen	Kevin Eaton

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

November 19, 2024 2-4 PM
December 17, 2024 2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the September 15, 2024 meeting were accepted as drafted.

Updates:

The restructuring of the Drinking Water and Groundwater Protection Division is underway. The plan is to have three programs: Water Supply, Wastewater and Administrative Services (including water supply administration, and the following elements of the wastewater programs: compliance, operations, public outreach, and logistics). A new program manager position was created by reallocating one of the Regional Office Administrative positions. This program manager will report to the Division Director. All the administrative staff for the WW Program will now report to Cristin. Sharon continues to coordinate the administrative work for the Regional Office programs. The current Compliance section will continue to work with Regional Office permits, with Underground Injection Control (UIC) permits, and with Indirect Discharge Rule (IDR) permits. The compliance work for Public Water Systems will remain in the Water Supply Program. Within the Wastewater Programs, the new Technical Services Section will deal with soils, hydrogeologic work, and Innovative/Alternative systems for the Regional Office, UIC, and IDR work. Dave Swift will move from the Compliance work to the Technical Services Section doing hydrogeologic, innovative/alternative, and soil reviews and complex technical reviews while reporting directly to Bruce.

Innovative/Alternative (I/A) Technology:

Bruce said that the following 4 applications are under review. The Enereau™ Systems Group is requesting approval of their membrane bio-reactor system as an advanced treatment system meeting filtrate effluent standards. The IMET Corporation is asking for approval of its IMET® aeration system that can be installed in a septic tank to control odors and to remediate failed systems. The Oakson Company is asking for approval to use its Perc Rite® as an effluent dispersal system. The Wasted Earth Company is asking for approval for its urine diversion, off-grid, composting toilet system. TAC members asked for a slide listing I/A technologies under review for future TAC meetings.

Rule Update Discussion on Permit Triggers and Exemptions:

Tom asked about well deepening and hydrofracturing. The definition of minor repair includes well fracturing (§1-201(63)(B)(vii) which is allowed under permit exemption §1-304(10). Well deepening is covered under exemption §1-304(19) provided the water quality is tested and it meets standards in §1-1113(b) and (c). Exemption §1-304(17) that allows for the replacement of a water supply serving only one single-family residence on a lot with no other buildings or structures, and with no campground allows well deepening. Sille noted that a well driller's report is needed for deepening of a well. The exemptions apply only to non-public water systems. Tom asked if water quality must be done after the fracturing or deepening. Per §1-304(19) deepening a well requires water quality testing prior to consumptive use. Per §1-201(63(B)(vii) hydrofracturing is a minor repair and water quality testing, though a good idea, is

not required. Tom asked if springs are potable water sources and Bruce replied that they are if they are connected to a building.

§1-302 which exempts reconstruction of some buildings was discussed. The DEC is reviewing the issues around the deadline for reconstruction of buildings and structures that comply with §1-303 which is currently 4 years with a possible extension of up to 5 years. Buildings or structures constructed in compliance with a permit issued after January 1, 2007 may be reconstructed in compliance with that permit without a time limit.

§1-303, the "Clean Slate" Exemption, was reviewed. Bruce asked about the language in §1-303(b) that allows for the exemption if the building was not unoccupied for more than 180 days in a calendar year. The TAC agreed that if the building was occupied for more than 180 days in any calendar year between December 31, 1986 and December 31, 2006, it qualified for the exemption. The TAC recommends that the language remain as it is.

Gunner asked if §1-304(3) which allows for construction of a primitive camp on a lot that is vacant or occupied with only one single-family residence should be revised to allow for more than one single family residence. The TAC recommends keeping the existing language.

§1-304(9) which deals with boundary line adjustments was discussed. Boundary line adjustments allow transfer of land from one or more lots to one or more other lots. The transferred land is combined in a reviewed property deed so that the total number of lots is the same after the transfer as before the transfer. If the transfer is limited to moving land from one lot to another lot without making any counter balancing transfer, the donating lot qualifies for the exemption as long as no more than 2% of the lot is transferred. The question was whether the 2% reduction in size of a lot was met when larger amounts of land were transferred but land is transferred in both directions so that both newly configured lots are no less than 2% smaller than before the transfers occurred. Ernie said that when the exemption language was created it was intended to apply only when less than 2% of any lot was transferred to another lot regardless of any counter transfer of land. Gunner and Roger thought that the exemption can apply as long as the resulting lots are both within 2% of the original size.

§1-304(6) allows for a subdivision exemption when the resulting lot will only be used for cell towers, solar panels, wind turbines, or telephone switching stations. Bruce suggested that, at a minimum, power substations should be added.

§1-304(23) was reviewed and it was suggested that a note be added that water treatment wastewater can also be disposed of in a drywell or other leaching system under an exemption in the Underground Injection Control Rules. Jared supported this noting that any addition of salt to

a septic tank can cause problems. The TAC supports this approach. Sheri suggested that the condensate water from propane furnaces, which is often treated for pH because of its acidic nature, should be allowed to use the same discharge method. Craig J. asked about allowing surface discharge as well.

Approved Minutes of the Technical Advisory Committee Meeting

November 19, 2024

Participation by videoconference

Attendees:	Megan Kane	Bruce Douglas*
	Steve Revell*	Jared Willey*
	Roger Thompson*	Ernie Christianson*
	Sheri Young*	Frederic Larsen
	Kevin Eaton	Craig Heindel*
	Terry Shearer	Catherina Narigon
	Sille Larsen*	

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

December 17, 2024 2-4 PM To be confirmed, if needed.

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the October 15, 2024 meeting were accepted as drafted.

Updates:

Bruce reported that the Regional Office restructuring is moving forward. The revised job descriptions for Cristin Askmankas and David Swift were submitted review and classification. Cristin's has been approved. Bruce said that recruitment for a new Program Manager position will start soon.

Innovative/Alternative Systems:

There has been no activity that needs Technical Advisory Committee (TAC) review.

Rule Update Discussion:

Bruce said that the discussion would cover the administrative portion of the permitting process and the section on delegation to municipal authorities. Bruce noted that some of the permitting process is covered by statutory language while some is controlled by the Wastewater System and Potable Water Supply Rules (WW Rules). Craig H. asked if the discussion is limited to the WW Rules or includes other Regional Office Programs. The discussion is limited to the WW Rules. Bruce asked if there are any comments about how the current process is working. One suggestion is to consult with the Regional Office staff to see if applicants find the WW Rules to be confusing or unreasonable.

Bruce asked about the requirement that the onsite water and wastewater system locations be flagged. The TAC thinks this is a reasonable requirement. Sheri said that the flags are removed during the site clearing process and need to be replaced prior to beginning system construction. Bruce said that it is sufficient that the flags are present during the review process and for the construction process.

Bruce asked if there is any need to rework the water and wastewater allocation approvals from municipalities. The TAC thinks the present process is good.

Bruce noted that an applicant can withdraw their permit application at anytime. They can refile the application at anytime. The application fee will be returned if the withdrawal request is made prior to beginning the technical review.

The requirement to notify neighboring property owners whenever the required isolation distance extends onto the neighboring property was reviewed. The isolation distance may affect the construction of water and wastewater systems on the neighboring property. This impact on neighboring properties has existed since the beginning of state regulation of water and wastewater systems. The requirement to notify is mandated by statute. This requirement results in many time-consuming calls to the Regional Office staff. Neighbors are sometimes frustrated that they have no authority to prevent the isolation from extending onto their property.

Bruce asked about requiring that the systems be designed to keep the isolation on the applicant’s property. The TAC has discussed this several times in the past and issued a report that is available at:

https://dec.vermont.gov/sites/dec/files/dwgwp/rotac/pdf/2011.01.15.tacovershadowingrep.pdf

The report recommended maintaining the status quo that is based on a first-in-time approach.

Sheri asked about alternatives to certified mailing requirements. The process adds some days to the process and is somewhat expensive. E-mail notification would be useful though not all people have e-mail capacity.

There were no comments about Appendix A.

Bruce said that he is working on standard language to be used when issuing the denial of a permit application. It is important to have consistency among the Regional Offices.

Municipal Delegation was discussed. Two towns had taken the delegation authority many years ago, but both have returned the delegation to the state. This was primarily because the cost of administering the program was a more than what was generated by the application fees.

Bruce said that the municipal connection stake-holders group has met four times. They are considering a process where municipalities would issue permits when a project will be connected to both municipal water and wastewater systems. One possibility is that the municipality would do the permit review, and the State would do an administrative issuance so that there would be consistent record keeping and public access to an online database. Craig H. asked if Fire Districts would be considered to be a municipal authority. They would be and could take delegation if they covered both water and wastewater. Ernie asked about how this would affect fee revenue. It would be an issue if there is a reduction in revenue without a proportionate reduction in State workload. Kevin said that something in the records should make it clear that the delegated town is responsible for the technical review.

§1-302 related to reconstruction of buildings that have been removed or destroyed was reviewed. Bruce said that the time for reconstruction could be extended from 4 years to 5 years in certain circumstances, but that it could not be extended beyond 5 years.

New Items:

Bruce reviewed the status of the Lake Champlain Basin Program study of wastewater capacity of clay type soils. A request for proposals has been issued.

The DEC study of mound sand availability has not been completed. The person doing the work left for another position. The possibly use of glass that is crushed and sieved to mound sand specs was reviewed and one organization is working on it. Craig H. said that a report should be issued and asked if there are funds available to hire the departed worker to complete the report. Bruce will check this.

Steve said there are reports that the sand used in bottomless sand filters is difficult to find and very expensive. Bruce said that the sand specifications should be reviewed to determine if it is possible to make the standard more permissive. Steve said that using the C-33 would help. Sheri noted that sand is hard to find in her area and that it is being trucked in from New York or Danby. The sand from New York is $40 per yard at the pit. There are reports that single family home mound systems cost $60,000 to $70,000.

Innovative/alternative systems were discussed. Jared noted that there is consolidation in the industry with smaller companies being purchased by larger companies. Some of the systems approved for use in Vermont cost $4,000 to $5,000 more than in Rhode Island. Jared also said that concrete tanks are more expensive in Vermont than in some other states.

Sille said there should be cooperation between Licensed Well Drillers and Licensed Designers so that proposed well sites are in suitable locations for drilling. The TAC agreed that training would be useful. Bruce reported that Jeff Williams is trying to have well drillers provide a training session. Sille also noted that actual well locations are often significantly different than where reported. Craig H. said part of the problem is that well drillers are not using high resolution equipment and sometime just use the application on their cell phone. There should be a standard created so that the results would be reliable. Sheri said that she has tried to correct location data but it is not easy to get the records updated. If there was an easy way, designers might make more corrections.

Bruce asked about secondary restraint protection for septic and other tanks. This can protect against unexpected failure of the riser cover. Some states have already added a requirement. Sheri is specifying this on her plans and Jared reported seeing some during maintenance inspections. Craig H. supported the use of secondary restraints. One version is made by Polylok® for their 24” plastic risers and is available for less than $50.

Approved Minutes of the Technical Advisory Committee Meeting

December 17, 2024

Participation by videoconference

Attendees:

Sille Larsen*	Bruce Douglas*
Jeffrey Williams*	Roger Thompson*
Sheri Young*	Craig Heindel*
Denise Johnson-Terk	Gunner McCain*
Megan Kane	Erin Stewart
Kevin Eaton	Ernie Christianson*
Bryan Redmond	Julia Beaudoin*
Jen Fleckenstein*	Tom DeBell*
Frederic Larsen	Terry Shearer
Mark Bannon*	Steve Revell*
Cristian Jablonski	Craig Jewett*
Miles Waite	Jared Willey*
Robert Pelosi	Eric Deratzian
Scott Smith	

*Technical Advisory Committee (TAC) members or substitutes

Scheduled Meetings:

All meetings are scheduled as virtual meetings.

January 21, 2025 2-4 PM

Agenda:

The proposed agenda was accepted as drafted.

Minutes:

The draft minutes of the November 19, 2024 meeting were accepted with one typo correction.

Updates:

The Municipal Water and Wastewater Connections Stakeholder Study Group continued to meet. There is a draft report. The current proposal is to remove the delegation process in the current Wastewater System and Potable Water Supply Rules (WW Rules) and replace with a process to delegate approval to certain municipalities. The delegation would allow the municipality to do the technical review for projects that are connected to both municipal water and wastewater systems. The local approval package would be copied to the Department of Environmental Conservation (DEC), who would then issue a general permit and the general permit and supporting documents would be added to the State database. The information would be available to the public in the same form as permits issued directly by the DEC.

The reorganization of the Drinking Water and Groundwater Protection Division is continuing. A newly created position of Technical Services Engineer has been filled by David Swift. He will be responsible for reviewing advanced soil and hydrogeological evaluations and for reviewing Innovative/Alternative Systems approvals and renewals. Gunner noted that review of record drawings is moving slowly and asked if there is a person in charge. The position is currently vacant, and the work is shared among the existing staff.

Overshadowing:

Overshadowing occurs when the isolation distances required in the WW Rules for water supplies or wastewater systems extend onto neighboring properties. Since 2010, per 10 V.S.A. §1973, the neighboring property owner must be notified at least 7 days prior to filing a permit application, during the permit application review process if revisions to the plans create or alter overshadowing with at least 7 days notice prior to issuance of the permit, or after a permit is issued if during construction overshadowing occurs or is altered. Applications are exempt from this requirement when the overshadowing only extends onto state or municipally owned property, the application does not include alteration to water or wastewater systems, the application is for the repair or replacement of a system with no increase in design flow, the application is for a wastewater system when all neighboring properties are required to connect to a municipal water system, or when the application is for a water supply when all neighboring properties are required to connect to a municipally owned wastewater collection system.

While the regulatory impacts have existed since at least 1969, when wastewater permits were first issued by the DEC, the notification process has drawn attention to the issue. Under the current WW Rules the neighboring property owners are notified and they can raise any issues they wish. Sometimes there is information, such as a well location that is not included in the plans, that results in alteration or denial of an application. In many cases, discussion with the neighboring property owner clarifies that the overshadowing does not have a significant adverse impact. In a few cases, the overshadowing can prevent the neighboring property owner from future development, at least in the way they would prefer. Some property owners are disappointed when they learn that their concerns cannot prevent the issuance of a permit.

The current regulatory position for the WW Rules, and many other development rules, is a first in time concept, based either on pre-existing construction or a submission of a permit application. The concept has been applied by the DEC at least since 1969. The two court decisions referenced below support this approach.

1. VT Supreme Court: "In re DJK, LLC WW & WS Permit"; https://www.vermontjudiciary.org/sites/default/files/documents/op22-296.pdf

2. VT Superior Court: "In re: 15 Bull Moose1 Wastewater & Water Supply Permit Appeal; https://www.vermontjudiciary.org/sites/default/files/documents/15%20Bull%20Moose%20Road%20Wastewater%20Permit%2023ENV07%20Merits%20Decision.pdf

None the less, there are concerns about the situations where there is an adverse impact on a neighboring property owner. The DEC is reviewing the situation and considering options to eliminate or reduce the adverse impacts.

The TAC discussed this issue extensively in 2010 and issued a report that is available at:

https://dec.vermont.gov/sites/dec/files/dwgwp/rotac/pdf/2011.01.15.tacovershadowingrep.pdf

Bryan asked for technical options and possible incentives for maximization. The TAC suggested a number of alternatives that could be considered:

1. Maximize use of the applicant's property for presumptive isolation zone
2. Require that the isolation distances remain on the lot.
3. Allow isolation distance to overshadow only with an easement from the neighbor.
4. Require the isolation distance to remain on the lot if technically possible.
5. Charge a much larger application fee if there is overshadowing to encourage designs that keep the isolation distance on the lot.
6. Pay compensation to the neighboring landowner.
7. Allow an applicant to sign a waiver that reduces the isolation distance around their well so that the isolation distance does not extend onto the neighboring property.
8. Consider situations where the overshadowing only covers a portion of the neighboring property where installation of a well or wastewater system is prohibited. One example is when the area being overshadowed is a state protected wetland.
9. Make sure that concerned neighbor's issues with overshadowing are communicated to DEC, rather than solely to the licensed designer.
10. Setbacks to property lines could be increased to reduce overshadowing
11. WW permitting could be part of ANR-Online with draft permits being issued, so that the permit can be reviewed prior to issuance.

12. Only WW permit applications with overshadowing would go through ANR-Online and permit applications without overshadowing would go through the current permit review and issuance process.

All these options need a detailed analysis that considers the increase in development cost, changes in development patterns, pressure to install municipal water and wastewater systems, and how any change would affect pre-existing or previously permitted properties. The results can then be compared to the existing first-in-time approach.

The TAC supports efforts to reduce the overshadowing by requiring that the isolation distances shown on the plans be the minimum required by the WW Rules.

Craig J. stated that current program puts burden on neighbor to demonstrate that they have been aggrieved by overshadowing. If there are any changes to maximize on-lot isolation zones, then a prescriptive approach would be needed to enable consistency in review from permit to permit. Back and forth conversations between landowners will significantly increase review time.

Craig H. made a recommendation to stay away from economic question or a financial threshold when overshadowing would be allowed, there will be considerable difference in how to establish cost.

Roger stated that on-lot presumptive isolation zones will increase the size of lots was pointed out by the TAC in their 2010 report.

Ernie pointed out that there is concern with compensation for overshadowing on land that has no development potential, such as a wetland or shallow bedrock area. If talking about economics could be forcing a developer to convey land by deferral, which could be used to circumvent the rule.

Craig J recommended that any new overshadowing requirements should be specific to newly created parcels, not existing parcels.

Roger suggested that if there was permit fee for overshadowing, but during review it is determined that the proposed overshadowing cannot be avoided the fee could be refunded.

Jeff stated that he has a concern about monetizing resource. It has proven to be effective to use hydrogeologic studies and well construction practices to reduce isolation zones. The timeframe when a well was drilled may impact the type of construction.

Sheri stated that she is currently designing to minimize overshadowing. Compensation discussion may result in the opening of Pandora's box of issues and may create equity issues that

allow wealthy developers to buy overshadowing, but less wealthy landowners may not be able to purchase the right to overshadow.

Mark stated that New Hampshire has a Standard Release Form for Protective Well Radii, the applicant signs away their rights to well protection. Bruce stated that NH rules also allow applicant to get an easement from a neighbor.

Craig J. expressed concern that some lots may be undevelopable. Although there are ways to address overshadowing. Overshadowing alone does not mean that the overshadowed neighbor would necessarily be aggrieved.

Bruce pointed out that isolation distances may be mutual – that neighbor who is overshadowed by a new project, may already be overshadowing someone else. There is currently a disconnection between overshadowed landowner and the Regional Engineer reviewing the technical aspects of the project. The regulatory process could be improved to elicit relevant comments from the neighbor.

Roger pointed out that more precise presumptive isolation distances may be more costly. Costs to neighbors and potential landowners and infill - establish clear criteria for designers. so that regional engineers do not have to make a judgement call. Need to improve the public process for overshadowing. Some overshadowed landowners are unnecessarily scared by overshadowing notification.

Sheri asked if there are more spite wells these days. Terry answered that he was not getting more spite wells.

Ernie stated that the current rules were focused on minimizing costs, therefore the drawing of presumptive isolation distances was not defined as narrowly as it could have been.

Craig H and Steve R supported approach of accuracy in drawing presumptive isolation zones

Craig J supported the need to define an established criteria to avoid making Regional Engineers make judgement calls. ANR Online would require draft permits which will be made public may avoid many of current issues.

More careful flow analysis and use of more detailed topography, such as LIDAR mapping with a 1', 2' or 5' topographic contour, can limit the amount of overshadowing to the area required by the rules. Mark expressed concern that 1' contours might not appropriately characterize the upslope or downslope isolation zones, due to the influence of man-made surface contours, such as contours for road-side ditches and drainage swales. Roger pointed out that Regional Engineers are making judgement calls as to whether a ditch or a road affects

groundwater flow. Bruce pointed out that topography is intended to be a surrogate of groundwater flow.

Bruce stated that he has reached out to other states, and there are many approaches to address overshadowing ranging from no concerns with overshadowing, to states that do not allow for overshadowing without mitigating factors.

Sheri express concern that ANR Online would significantly increase time required for issuing a permit doe to public notice period. Increasing the permit time will not help the housing crisis.

Bruce asked that a subcommittee be formed to help with a review of the options. Bryan stated that the objective would be to update the 2010 recommendations on overshadowing in the first quarter of the new year would be ideal. Steve agreed to be a member. Craig H. suggested that other TAC members be involved legal team and technical team get together to avoid siloing.

Other Business:

Bruce reported that the American Water Works Association has adopted the Water Demand Calculator WDC system created by the International Association of Plumbing and Mechanical Officials (IAPMO). This allows for immediate use of the system in Vermont and provides a calculated Instantaneous Peak Demand (IPD) based on low flow fixtures and in certain circumstances may result in a smaller IPD. Use of the WDC can impact well pump sizing and potable water storage requirements. .

Sheri asked that the revised WW Rules clarify when an additional dwelling unit (ADU) must also be an attached unit.

Bruce said that he has been considering if the proposed WW Rule update will work with the current rule structure or if there should be a reorganization of the structure. He is inclined towards a full restructuring. Craig H. and Gunner support the restructuring approach.

Bruce asked if current TAC members wanted to be reappointed which is required after each election. All of those present asked to be reappointed.