

Email testimony from Neil Kamman Feb 28, 2025

Greetings Chair Sheldon,

We have prepared responses to the three-acre program issues areas raised by your committee, as follows. As follow-up to our February 25th testimony, attached is a table with a sample of three-acre project details/costs through the Green Schools Initiative, further explained under bullet point #7.

Also, I wanted to clarify one fine point. I believe I misspoke on the number of sites that were permitted to date for 3-acre. The total number sites fully permitted to date is 177, which will represent more than 177 property owners, as we've explained before.

Please let us know if we can be of further assistance in answering the Committee's questions on this program and the new Committee Bill on this topic. Further to this, please recall my final testimony point from earlier this week regarding impact fees. While that is not included in the Committee Bill as I've seen it, I think this merits discussion.

Enjoy your break over TMD week.

Neil

- 1. Targets 677 properties, a small percentage (~3-4%) of the Vermont population, with all the costs of a very expensive method of lake clean up.**
 1. There are cost burdens carried by all sectors to meet clean water requirements. Through the extensive stakeholder and legislative engagement process of identifying long term sufficient clean water funding levels, the state held a public policy discussion to estimate the total funding need and to determine the state's share of overall costs versus federal, local, and private costs. (See Office of the State Treasurer Clean Water Report (January 2017): https://www.vermonttreasurer.gov/sites/treasurer/files/committees-and-reports/_FINAL_CleanWaterReport_2017.pdf.)
 2. The state committed to "funding the Clean Water Initiative in a manner that ensures the maintenance of effort and that provides an annual appropriation for clean water programs in a range of \$50 million to \$60 million as adjusted for inflation over the duration of the Initiative" (10 V.S.A. § 1387). Generally, the state set a target to cover half of the overall annual cost with other sources covering the rest. The breakdown of state cost share, however, varies by sector and non-regulatory versus regulatory projects. Clean Water Fund priorities were set in statute in 2019 that reflect this strategy, as follows.
 1. Tier 1: incentivize non-regulatory actions necessary to achieve water quality goals. (With the exception of AAFM's Water Quality Grants to

Partners and Farmers, which funds some regulatory work, but also is highly cost effective and leverages significant federal funds.)

2. Tier 2: offset costs of stormwater regulatory compliance on public lands and with public infrastructure.
 3. Tier 3: offset costs of stormwater regulatory compliance for private entities.
 3. The Clean Water Board makes its annual budget recommendation based on priorities in statute and factoring availability of other funding sources (e.g., ARPA funds). Learn more about the Clean Water Board and its annual budget process on the Clean Water Board webpage: <https://dec.vermont.gov/water-investment/cwi/clean-water-board> and this Story Map: <https://storymaps.arcgis.com/stories/37d89baeb8e546d5879f15188f703429>.
 4. The three-acre requirements largely fit into Tier 2 and Tier 3 priorities. S.24 revisits how three-acre work fits into the prioritization scheme. Note, without raising additional funds, any redistribution of funds to three-acre work will come at the cost of progress in another sector.
 5. The list of three-acre sites that may be required to retrofit for stormwater controls is roughly 677 sites. Please note that any single three-acre "site" could include numerous parcels and property owners (from one to over 100 parcels per site). We don't currently know what percentage of parcels or landowners that are affected by the rule.
 6. It should be noted that three-acre retrofits are not uniquely subject to stormwater permitting. While retrofits are more costly than new builds, the proportion of Vermont parcels subject to some type of stormwater controls and compliance well exceeds the universe of three-acre sites.
2. **Feels rather "random" from landowner's perspective. Having owned their property for a potentially a long time, they are seemingly hit at random based on some rather esoteric characteristics that they were not aware of.**
1. The three-acre threshold was initially envisioned as a permit threshold under the draft Lake Champlain TMDL Phase I Implementation Plan as a means to achieve necessary phosphorus reduction in stormwater from developed lands in the watershed. The permit threshold was adopted by Act 64 of 2015, and incorporated into 10 V.S.A. § 1264. The threshold was informed by previous regulatory thresholds and the scale of required phosphorus reductions, and it was therefore not arbitrary. Subsequent to the adoption of the three-acre threshold, the Agency was able to estimate the reductions in stormwater-related phosphorus that are likely to occur as a result of this general permit. Generally speaking, and with the exception of the Missisquoi Bay and South Lake B segments, implementation of the three-acre requirements are sufficient to meet TMDL wasteload targets, without overshooting the required reductions. In the case of South Lake B, given the relatively small amount of developed lands, a minimal amount of investment in nonregulatory reductions in stormwater is likely to be sufficient to meet the TMDL target. For several other watersheds, whether

the three-acre threshold is sufficient will be more dependent on the extent of future growth and the actual amount of treatment that occurs.

- 3. Municipalities are reluctant to get involved due to risk so landowners are left holding the bag and paying for it on their own with no state aid. Some have found municipal help with bonds. Some businesses have found assistance through DEC (Fairs).**
 1. This underscores the importance of doing what we can to support and encourage municipalities to take on responsibility for 3-acre sites.
 2. Municipalities are relatively better equipped to take on project management, construction oversight, and long term operation and maintenance than most private three-acre site owners.
 3. Municipal impact fees and stormwater utilities are promising options to help raise local funds to support municipal capacity to support three-acre sites.
 4. We recommend inviting municipal representatives into committee to hear their input on options to incent and support municipalities in playing a role in the success of the three-acre permit.
 5. It is fair to acknowledge that municipalities vary in their willingness and capacity to take on these responsibilities. In these cases, three-acre sites may receive different levels of local support depending on their municipal government. Regionalized stormwater utilities may be an interesting model to help build capacity and an economy of scale where individual municipalities are unable to serve in this capacity. This is a complex endeavor that may take time and stakeholder engagement.

- 4. ANR responsiveness has been lacking which increases the landowner anxiety and frustration.**
 1. The DEC Stormwater Program has been diligently engaged with property owners affected by the regulation, through both email and phone, and through participation in site visits and public meetings, either specific to one site, or more broadly. Program staff, while attentive to 3-acre site permitting, also administers permitting for new development and ongoing redevelopment projects. The work load is significant for the current staffing level in the program. In addition, during the period of 2021-2022 there when the Department's Stormwater Program had 4 departures of the most highly experienced staff as well as a temporary leaves of absence until they could refill positions, train new staff, and have staff return. This inevitably resulted in some longer wait times before we could respond to certain requests or inquiries during that time. Overall, the Program has done very well with responding to landowners. DEC aims to be responsive in assisting the regulated community, particularly with educating those that are unfamiliar with stormwater management from developed lands and providing information regarding expired permits or pre-2002 designs, particularly in situations where landowners may have been unaware of the permit applicable to their parcel or development. Often property owners were unaware of the applicable permit, either due to an inadequate title search at

time of purchase/sale, or because of the fault of the developer failing to file the permit in the respective land records.

2. ANR has been providing as much financial assistance as feasible with resources authorized to support three-acre requirements. American Rescue Plan Act dollars have made it possible to support a large portion of three-acre sites in permit obtainment, as well as public schools, MHCs, public private partnerships, and agricultural fairs in permit obtainment and construction. ANR has conducted significant outreach to support three-acre sites in accessing these funding programs. ANR will continue to conduct outreach to help three-acre sites navigate continued funding opportunities.

5. Addresses only a tiny slice of the TMDL (1.7MTP of 213MTP = 0.8%) making compliance seem rather pointless, even for the supportive environmentalists.

1. The TMDLs maximized target phosphorus reductions where feasible in more cost effective sectors. The TMDL has aggressive reduction targets and each sector must maximize phosphorus reductions in order to meet the overarching goals. There is no known capacity available in other sectors to make up for the reductions associated with the three-acre requirements.
2. While it may appear that the three-acre permit is a small portion of the overarching TMDL, three-acre makes up a much more significant portion of the TMDL targets within the developed lands wasteload allocation and in specific watersheds (see table below). The TMDL targets are sector-specific and load reductions must be achieved within the wasteload allocation. Trading across sectors has been discussed but has been deemed infeasible as it would require demonstration that a sector can meet and exceed its target reductions in order to meet the overall TMDL. We don't have any indication excess capacity exists in other sectors to take on more reductions from the three-acre permit.

Table 2. The estimated total annual phosphorus reductions that stormwater permit programs will achieve by 2036 for each CWSP basin.

Total regulatory phosphorus reduction estimates (kg)	3-acre	MRGP	TS4	MS4	Total
Basin 2 & 4 or South Lake A&B, Port Henry segments (TS4)	84.1	1031.4	158.2		1273.7
Basin 3 - or Otter Creek segment (TS4)	318.7	1504.6	248.3	30.5	2102.1
Basin 5 - or Shelburne, NE arm, St Albans, Isle le Mott (TS4)	390.1	206.1	103.8	451.0	1150.9
Basin 6 - Missisquoi, Rock, Pike OR Missisquoi Bay segment	62.4	1335.5	412.1	0.0	1810.0
Basin 7 - Lamoille- OR <u>Mallets Bay lake</u> segment (TS4)	189.6	1546.8	247.9	71.4	2055.7
Basin 8 - Winooski - OR Main Lake Segment (TS4)	677.8	3676.2	463.4	209.6	5027.0
Total	1722.7	9300.5	1633.7	762.4	13419.4

6. ANR is not interested in testing the runoff to either test-out of remediation or prove that remediation is necessary or, after implemented, has been effective. This further adds to the seeming pointlessness of compliance and thus adds to frustration.

1. Phosphorus is a ubiquitous pollutant in stormwater and is likely to be found in the vast majority of sites, as is well documented in the scientific literature. The proposal that the Agency limit requirements for “3-acre sites” to those with a quantifiable discharge of phosphorus would be a very large

undertaking that would delay implementation and would be unlikely to significantly affect the number of sites required to obtain permit coverage. This would also create subjectivity in the jurisdiction of the regulatory program and would make it infeasible to oversee and enforce in an equitable manner.

1. Based on existing monitoring data collected nationally, it is exceedingly unlikely that sites will discharge untreated stormwater that is below the applicable water quality standard. Implementing a system whereby sites are monitored prior to being regulated would be costly both to applicants and the Agency, especially if the monitoring were designed to capture a representative range of runoff producing rain events and to determine the volume of phosphorus. Further, phosphorus loading from sites is variable based on season and weather. The program is based on loading associated with annual average conditions. Single sampling events would not be reflective of annual conditions.
2. Notwithstanding the quality of runoff, when sites discharge large amounts of precipitation into drainage networks, those conveyances, which ultimately terminate in rivers and streams, are subject to significant erosive forces. As explained in our 2/25 testimony, this is why stormwater rules seek to protect stream channels as well as basic surface and groundwater quality.

7. Average cost per residence is ~\$20K/home and ~\$100K/impervious acre. Cost for businesses range from \$200K - \$3.7M.

1. Three-acre costs vary based on number of acres required for treatment and the site characteristics. ANR does not track as part of the permitting process the projected construction expenses for all three-acre sites at time of design or at time of bidding. ANR has only a very rough estimate of number of landowners or parcels per site so most accurate cost estimates are tied to \$/acre.
2. ANR's funding programs have some preliminary insights into bid construction costs for sites we are supporting. Out of 29 public schools in the Green Schools Initiative that have already bid for construction work or constructed, the median cost per acre is \$66,533.26. Using the 0.87kgP/ac/yr as the model number to compute TMDL progress achieved (see issue #8 for more information), this means that median cost per kg phosphorus reduced per year for these public schools is \$76,475. Three-acre sites vary in complexity, treatment needs, and capacity so a median for public school projects should be looked at cautiously and not necessarily applied to all three-acre sites. Prior cost data has put developed lands best management practices closer to \$46,026/kgP/yr. Recent trends in high demand for engineering and construction along with inflationary pressures has likely driven this up.
3. To provide additional detail on the cost estimates above, and following up on our February 25th testimony, attached is a table of the 29 three-acre public schools funded through the Green Schools Initiative that completed/mostly completed construction last year (2024) or have bids for anticipated 2025

construction. The 2025 projects have some contingency built into budgets and may come out lower cost once constructed. The Green Schools Initiative is a useful sample of three-acre projects to support estimating costs overall for the three-acre program. As requested, the DEC Stormwater Program is working on adding details for these projects on practice type and phosphorus efficiency and will send an updated version once available. Please let us know if additional information is requested on these sites/projects.

8. **Neil Kaman provided 0.87kgP/ac/yr as the model number that ANR uses to compute TMDL progress achieved via the 3-acre rule remediation. Thus the projects we've heard from yield:**
 - **Houston: 4 acres impervious, \$200K = \$57K/kgP**
 - **Richmond: 10.5 acres impervious, \$1M, 48 homes = \$110K/kgP, \$21K/home**
 - **Rutland Fair: 16.9 acres impervious, \$3.7M = \$252K/kgP**
 - a. DEC views project cost data as iterative. Most reliable sector cost estimates can be drawn from constructed or bid-out projects. Cost data for sites not yet designed or permitted may change significantly through the design process as site needs and cost-effective opportunities are identified, which is our expectation with the Vermont State Fair in Rutland. Real costs are ultimately tied to market conditions at time of bidding. Some of the cost examples listed above are based on preliminary designs and may change as projects move through the design and construction process.
 - b. On the 0.87 kg/yr of Total Phosphorus treated per acre estimate, it should be noted that this represents average conditions and average phosphorus treatment efficiency of 70%. Sites with more capacity to treat and infiltrate will achieve greater phosphorus reductions per acre treated. Estimate details:
 - i. Based on last year's operational permits, for every acre of impervious treated, an acre of pervious is also treated.
 - ii. The Stormwater Program generally assumes that practices meeting the water quality standard will achieve on average a 70% reduction in phosphorus. Actual stormwater system data confirms this is a valid assumption, as reported in Appendix F of the Vermont Clean Water Initiative 2024 Performance Report.
 - iii. On average, total phosphorus baseload is $(0.981 \text{ kg/acre impervious/yr} + 0.261 \text{ kg/acre pervious/year}) * 70\% \text{ efficiency} = 0.87 \text{ kg/ac/yr}$.
9. **Three acre rule is the most expensive method of remediation of all sectors at ~\$100K/kgP. This is ~10x more expensive than remediating other sectors.**
 1. [Prior cost data](#) has put developed lands best management practices closer to \$46,026/kgP/yr. While this is the highest of all the clean water project categories for which we've tracked cost data relative to phosphorus performance, DEC has not observed an order of magnitude difference relative to the cost of other sectors. Other project types on the costlier side include floodplain/stream restoration projects, including dam removal, lake shoreland runoff treatment, and non-regulatory forest road best

management practices at \$16,647, \$16,482, and \$15,245 per kgP/year respectively.

2. It should be noted that wastewater treatment facility upgrade and combined sewer overflow abatement efforts are significantly more expensive than stormwater treatment, but costs and phosphorus reductions are calculated in a different format (for example, wastewater treatment facility phosphorus loads are calculated based on end of pipe effluent monitoring).
3. DEC remains mindful that if the state cannot make satisfactory progress to achieve required phosphorus reductions, EPA may compel phosphorus reductions from more costly/less cost-effective sources over which they have jurisdiction. From the [Lake Champlain phosphorus TMDLs](#) Accountability Framework (pages 58-59, emphasis added):
“If EPA finds Vermont has failed to make satisfactory progress in any of the report cards described above, EPA may take one or more of the following actions for the lake segment in question:
 - *Revise the TMDL for the segment to allocate load reductions from nonpoint to point sources, such as wastewater treatment plants.*
 - *Expand NPDES permit coverage to unregulated sources. For example, exercise Residual Designation Authority (RDA) to increase the number of sources, operations or communities regulated under the NPDES permit program.*
 - *Increase and target federal enforcement and compliance assurance in the watershed.”*

10. High cost means high opportunity cost, ie. same money spent in another way could accomplish much more lake remediation.

1. The State of Vermont continues to promote collaborative and innovative options to find cost effective phosphorus reductions. Shifting targets from the three-acre permit to other sectors/programs would require identifying excess capacity to exceed existing targets in those other sectors. There is no known capacity available in other sectors to make up for the reductions associated with the three-acre requirements. See response to #5 for more information.

11. High cost of compliance is potentially driving some to leave Vermont. Driving others to potentially close their business (Rutland Fair).

1. DEC contends that this underscores the importance of providing additional time and financial assistance to help three-acre sites successfully meet the regulation. On the Rutland Fair issue, DEC and AAFM are working to support the Rutland Fair in filling funding gaps to complete engineering and permit obtainment.

12. Problem stays with the property yet moving away from it is not possible because it becomes a lien or debt associated with the property. It's an immediate reduction in value of these “randomly selected” properties.

1. DEC contends that this underscores the importance of providing additional time and financial assistance to help three-acre sites successfully meet the regulation.

13. South Burlington collects \$92.60/yr per home in taxes for \$2.9M/yr total to deal with stormwater at municipal level. Employs 3 FTE to manage it.

1. South Burlington is an excellent example of how a stormwater utility program can help build capacity at the local level to support its residents/businesses in more efficiently meeting stormwater regulations. Note that not all municipalities will have the willingness or capacity to take on this level of support. If financial and technical assistance largely hinges on municipalities taking responsibility for three-acre sites, as contemplated in S.24, there may be geographic inequity in the level of support three-acre sites receive, depending on their location. For this reason, DEC is also interested in exploring the value of regionalized stormwater utilities.

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