State of Vermont
WATER RESOURCES BOARD

RE: CCCH Stormwater Discharge Permits
Docket No. WQ-02-11 (ANR Permits #1-1556 and #1-1557)

RE: CCCH Stormwater Discharge Permits
Docket No. WQ-03-05, -06, and -07 (ANR Individual Discharge Permit No. CP102, Stormwater General Permit, NOI Nos. 1030 and 1031) (Consolidated)

FINDINGS OF FACT, CONCLUSIONS OF LAW, AND ORDER

Issued October 4, 2004

This decision pertains to appeals of five stormwater discharge permits and general permit authorizations from the Agency of Natural Resources for construction and operation of Segments A and B of the Chittenden County Circumferential Highway. As described in more detail below, the Water Resources Board concludes that the Vermont Agency of Transportation, the Applicant for these permits and approvals, has met its burden of proof and the permits and authorizations should issue. Accordingly, the actions of the Secretary of the Agency of Natural Resources, through her designee, the Department of Environmental Conservation, are affirmed and jurisdiction is returned to that agency.

I. JURISDICTIONAL STATEMENT, PARTIES, AND PROCEDURAL HISTORY

The stormwater discharge permits and general permit authorizations under appeal were issued by Department of Environmental Conservation (DEC), Agency of Natural Resources (ANR), pursuant to the Clean Water Act (CWA), 33 U.S.C. §§ 1251-1387, and the Vermont Water Pollution Control Act, 10 V.S.A. ch. 47 §1264. The appeal of these permits and approvals was filed with the Water Resources Board (Board), pursuant 10 V.S.A. § 1269. The applicable rules are the Vermont Water Quality Standards, effective July 2, 2000 (VWQS), and the Board's Rules of Procedure, effective January 1, 2002 (Procedural Rules).

The active parties to this proceeding were: Conservation Law Foundation (CLF) and Friends of the Earth (FOE), Appellants, represented by lead counsel, Mark Sinclair, Esq., Senior Attorney, CLF[1]; Vermont Agency of Transportation (VTrans), Applicant, represented by Judith Dillon, Esq., and John Dunleavy, Esq., Assistant Attorneys General; and the Agency of Natural Resources (ANR), represented by Warren T. Coleman, Esq., and Glen Gross, Esq.

Other parties to this proceeding were Greater Burlington Industrial Corporation (GBIC), represented by Dale A. Rocheleau, Esq., and Kevin Leahy, Esq., Downs Rachlin and Martin,

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[1] FOE also was represented by Brian Dunkiel, Esq., Shems, Dunkiel and Kassel, PLLC.

PLLC; Town of Essex, represented by William F. Ellis, Esq., McNeil Leddy & Sheahan; Village of Essex Junction, represented by David A. Barra, Esq., Unsworth, Powell, Barra, Orr & Bredice, PLC; and Town of Williston, represented by Paul S. Gillies, Esq., Tarrant, Marks & Gillies.

The procedural history of these appeals may be summarized as follows. On September 23, 2002, the DEC issued ANR Permits #1-1556 and #1-1557 (collectively, Operational-Phase Discharge Permits) to VTrans for Segments A and B of the Chittenden County Circumferential Highway Project (CCCH or Project). On October 18, 2002, CLF and FOE appealed these permits to the Board (Board) and they were subsequently docketed as WQ-02-11.

A prehearing conference was held on December 2, 2002, at which time the parties agreed that a continuance should be granted to allow time for ANR to issue construction phase discharge permits for the Project. The Chair established a schedule that took into account the parties' interest in consolidating all Project-related discharge permits. See Re: CCCH Stormwater Discharge Permits, Docket No. WQ-02-11, Prehearing Conference Report and Order (Dec.10, 2002) (December 2002 Prehearing Conference Order), hereby incorporated by reference.

On February 14, 2003, the DEC issued ANR Individual Discharge Permit No. CP102, and Stormwater General Permit, NOI Nos. 1030 and 1031 (collectively, Construction Phase-Discharge Permits) to VTrans for Segments A and B of the CCCH. On March 13, 2003, CLF and FOE appealed the Construction-Phase Discharge Permits to the Board and these appeals were subsequently docketed as WQ-03-05, -06, and -07.

On March 24, 2003, the Board's Referee convened a prehearing conference with respect to all of CLF's and FOE's appeals of stormwater discharge permits regarding Segments A and B of the CCCH. On April 30, 2003, a Referee's Proposed Prehearing Conference Report and Order (Proposed Prehearing Order) was issued. CLF/FOE, ANR, and VTrans each filed timely objections to portions of the Proposed Prehearing Order and also filed written responses. ANR also requested oral argument with respect to questions it raised concerning the scope of issues on appeal.

On June 3, 2003, the Board held oral argument, with ANR, VTrans, and CLF/FOE participating. On June 10, 2003, the Board issued a Memorandum of Decision regarding the scope of the issues on appeal. Also on June 10, 2003, the Board's Chair issued a Prehearing Conference Report and Order (Prehearing Order), based on the Proposed Prehearing Order and Memorandum of Decision. This Prehearing Order set forth all of the issues on appeal and became final and binding as of June 19, 2003. See Re: CCCH Stormwater Discharge Permits, Docket Nos. WQ-02-11 and WQ-03-05, -06, and -07, Prehearing Conference Report and Order (June 10, 2003), hereby incorporated by reference.

Between June 30, 2003 and September 9, 2003, VTrans, ANR, and CLF/FOE filed direct and rebuttal prefiled testimony and exhibits.

On July 22, 2003, CLF/FOE filed a Motion to Dismiss WQ-02-11, Remand and Stay Proceeding. VTrans and ANR each filed Oppositions to CLF/FOE's filing on August 8, 2003. On August 11, 2003, CLF/FOE requested oral argument before the Board, and such oral argument was held on August 26, 2003. The Board issued a Memorandum of Decision denying CLF/FOE's motion on August 29, 2003.

On September 15, 2003, CLF/FOE, ANR, and VTrans each filed evidentiary objections. On September 22, 2003, VTrans and CLF/FOE filed responses to the evidentiary objections.

On September 26, 2003, CLF/FOE, VTrans, and ANR each filed Proposed Findings of Fact, Conclusions of Law, and Orders.

The final prehearing conference in these appeals was held on September 29, 2003. On October 16, 2003, a Final Prehearing Conference Report and Order was issued, containing the Chair's evidentiary rulings. See Re: CCCH Stormwater Discharge Permits, Docket Nos. WQ-02-11 and WQ-03-05, -06, and -07, Final Prehearing Conference Report and Order (Oct. 16, 2003), hereby incorporated by reference. VTrans and ANR filed objections to the Chair's evidentiary rulings on October 20, 2003.

The Board conducted a Site Visit of the Project on October 7, 2003. Hearings in this consolidated proceeding were held on October 21, 22, and 28, and November 10, 2003, with the Board hearing oral argument on VTrans' and ANR's objections to the Final Prehearing Conference Report and Order, specifically the Chair's evidentiary rulings, prior to the receipt of evidence on October 21, 2003.

CLF/FOE, VTrans, and ANR each filed Supplemental or Revised Proposed Findings of Fact, Conclusions of Law, and Orders on December 30, 2003.

A proposed Site Visit Report prepared by the Board was issued to the parties on January 14, 2004. This was officially noticed and incorporated by the Board into the record of the proceeding, with minor changes suggested by VTrans, on February 17, 2004.

The Board deliberated in this matter on January 20, February 17, April 20, May 11, June 22, August 3 and 24, September 13 and 28, 2004.[2] On September 28, 2004, the Board declared

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[2] Chair Blythe completed his term of office on the Board on February 28, 2004, and continued to participate in this proceeding pursuant to 3 V.S.A. § 849. Member Potvin participated in all preliminary phases of this proceeding as well as the

the record complete and adjourned the hearing. This matter is now ready for decision.

II. ISSUES

CLF/FOE identified over fifty issues in its Notices of Appeal. Some issues were subsequently withdrawn or modified at the prehearing conference on March 24, 2003. The final set of issues are memorialized in the Prehearing Conference Report and Order, Section V, at 9-22 (June 10, 2003). Many of these issues, however, are sub-issues of broader questions. CLF/FOE stated in their proposed Conclusions of Law, "[t]he critical issues in this proceeding are: (1) what constitutes an adequate pollutant loading analysis for VTrans to meet its burden of proof that a new discharge meets VWQS; (2) what constitutes a proper anti-degradation analysis; (3) what constitutes an appropriate pollution offset to ensure a discharge does not cause or contribute to a violation of VWQS; and (4) what is the effect of an EPA-approved TMDL on permit issuance for new discharges into impaired waters." Supplemental Proposed Findings of Fact & Conclusions of Law at 47 (Dec. 30, 2003).

Given the specific facts found and legal conclusions drawn, not all of the issues and sub-issues raised by CLF/FOE are answered in this decision. Nevertheless, the Board trusts that its rulings will provide some guidance to the parties, and most particularly to ANR, as it grapples with the difficult task of developing a comprehensive stormwater management program for the State of Vermont.

III. FINDINGS OF FACT

To the extent that any proposed finding of facts are explicitly included below, they are granted; otherwise, they are denied. See Secretary, Agency of Natural Resources v. Upper Valley Regional Landfill Corporation, 167 Vt. 228, 241-42 (1997); Petition of Village of Hardwick Electric Department, 143 Vt. 437, 445 (1983).

A. Project Description

1. The CCCH is a limited access state highway which, when completed, is expected to be 15.8 miles in length, starting with a new interchange at I-89 in Williston, Vermont, and ending at Vermont Route 127 in Colchester, Vermont. It is being constructed by contrac-tors under VTrans' supervision and will be maintained by the VTrans' Operational Division.

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hearing, but was not able to participate in deliberations due to illness preceding her untimely death on April 7, 2004.

2. For planning and identification purposes the entire CCCH is divided into ten segments, A through J. Segments C through F of the CCCH, in the Town of Essex, have already been constructed and were opened to traffic in 1993. The Project that is the subject of the present appeals constitutes Segments A and B only, representing 3.8 miles of the CCCH.

3. Segment A will be built as a four-lane highway, with the remainder of the CCCH planned to allow for eventual expansion from two to four lanes.

4. Segment A will begin at a new interchange with I-89 approximately one mile southeasterly of the existing Taft Corners interchange in Williston, and will run north, crossing under U.S. Route 2 (US 2), over Allen Brook, and proceeding in a northerly direction to a new interchange at Redmond Road.

5. In order to allow for Segment A to pass under US 2, 1800 feet of US 2 will need to be elevated. In order to bridge Allen Brook, the brook's waters will be redirected from the current stream channel into an oversized box culvert. This culvert will be a 25-foot (span) by 12-foot (rise) reinforced concrete box. In order to minimize the water quality impacts to Allen Brook, Segment A has been designed so as to reduce the elevation of the road surface to the lowest practical level, in this way minimizing the width of the highway and associated embankments and thereby reducing the area subject to construction and potential erosion. Where it crosses Allen Brook, the CCCH road surface will be only about 13 feet above the streambed.

6. Segment B will pass over Redmond Creek and the Winooski River, and enter a new intersection with Vermont Route 117 (VT 117) in Essex. The majority of the earthwork for the interchange with VT 117 was completed during the construction of Segment C. The CCCH will cross Redmond Creek by means of a 72-inch multi-plate culvert. This culvert has been designed to accommodate the eventual four-lane build-out.

7. The original stormwater management plan for Segments A and B of the CCCH was developed in the late 1980s. In 2002, because of intervening changes in Vermont's stormwater management program, VTrans worked with ANR to revise the stormwater management control plan for Segments A and B with the goal of bringing the control plan into compliance with the 2002 Vermont Stormwater Management Manual (2002 Manual), authorized in Act No.109 of 2002.

B. Receiving Waters

8. The ANR discharge permits authorize VTrans to discharge stormwater runoff from the construction and operational phases of Segments A and B of the CCCH into Allen

Brook, unnamed tributaries of Allen Brook, Muddy Brook, Redmond Creek, and the Winooski River. These waters drain into Lake Champlain.

9. In the Winooski River and Redmond Creek watersheds, there are eight separate points where Segments A and B of the CCCH will discharge stormwater. In the Allen Brook watershed, there are three principal points where the CCCH will discharge stormwater. Each of these discharge points has been assigned a reference number (S/N) that corresponds to the centerline stationing of the highway project.

10. ANR prepares a List of Vermont Impaired Waters (§ 303(d) List) every two years for approval by the Environmental Protection Agency (EPA), pursuant to the Clean Water Act (CWA), 33 U.S.C. § 1313(d). This list identifies river segments that do not meet VWQS due to impairment for one or more pollutants. The § 303(d) List applicable in this proceeding is the 2002 EPA-approved § 303(d) List (2002 § 303(d) List).

11. Different stormwater management plans may be required for projects constructed in receiving waters that are listed as stormwater-impaired on a § 303(d) List. Taking into consideration the information contained in the 2002 § 303(d) List, VTrans has separated its stormwater management plans for the Winooski River and Redmond Creek watersheds, which are not impaired for stormwater, from its stormwater management plans for the stormwater-impaired Allen Brook watershed.

1. Winooski River

12. The Winooski River is a Class B water that supports aquatic biota sustained by high quality habitat and a cold water fishery below the Essex 19 dam. It also exhibits good aesthetic value, and is suitable for contact recreation. The Winooski River is not listed as an impaired water for any pollutant on the 2002 § 303(d) List. It is considered a "high quality water" for purposes of the State Anti-Degradation Policy.

13. According to ANR historical records, the Lower Winooski River has supported the presence of several rare, threatened, and endangered species, including the Eastern Sand Darter, Blacknose Shiner, Lake Sturgeon, Quillback, and several Mussel species, including the Giant Floater, Pocketbook, Fluted Shell, Fragile Papershell, Eastern Pearlshell and the Pink Heelsplitter.

2. Redmond Creek

14. Redmond Creek is a Class B water that supports aquatic biota sustained by high quality habitat, good aesthetic value, and is suitable for contact recreation. It is not listed as an impaired water under the 2002 § 303(d) List.

3. Allen Brook

15. The 2002 § 303(d) List identifies Allen Brook, from 1 mile above its mouth upstream for 5.5 miles, as impaired for sediment and pathogens. These "pollutants of concern" are the result of land development, erosion, and urban runoff. The 2002 § 303(d) List identifies aquatic life support and contact recreation as impaired uses of Allen Brook. The 2002 § 303(d) List indicates that Allen Brook is characterized by poor (1991) and fair (1999) biological conditions and habitat degradation. According to the 2002 § 303(d) List, ANR intended to complete a total maximum daily load (TMDL) for Allen Brook in 2002; however, ANR has not adopted a TMDL nor established wasteload allocations for Allen Brook to date.

16. ANR has collected fish and macro-invertebrate data from Allen Brook over a period of years and from multiple locations. The data show that the biological communities in Allen Brook are not of sufficient quality to satisfy the matrices generated by ANR for interpreting the narrative aquatic biota standards in the VWQS. In other words, Allen Brook does not comply with the biological criteria of the VWQS.

17. Allen Brook is not meeting the VWQS due to the discharge of stormwater runoff. Sediment is the primary pollutant causing Allen Brook to fail to comply with the VWQS. The sediment load is generated both within the sewer sheds discharging stormwater into Allen Brook and by hydrologic modifications of the stream itself which causes unnaturally aggressive stream bank erosion and channel incision.

18. Allen Brook does not have the assimilative capacity to accommodate additional discharges of sediment.

19. According to ANR records, Allen Brook supports mussel species, including the Creek Heelsplitter and the Triangle Floater.

4. Muddy Brook

20. Allen Brook empties into Muddy Brook during the last 300 feet of its course just prior to Muddy Brook's confluence with the Winooski River. The lower seven miles of Muddy Brook do not meet the VWQS due to the discharge of stormwater runoff. This reach of Muddy Brook is included on the 2002 § 303(d) List because aquatic life support is an impaired use. The impairment is due to land development, erosion, and urban runoff. The 2002 § 303(d) List identifies the pollutants causing the impairment as toxics, organic enrichment, and temperature, and indicates that Muddy Brook is characterized by poor biological condition and habitat degradation. According to the 2002 § 303(d) List, ANR intends to complete a TMDL for Muddy Brook in 2009.

21. Muddy Brook does not have the assimilative capacity to accommodate additional discharges of the pollutants of concern.

5. Lake Champlain

22. Allen Brook, Muddy Brook, Redmond Creek, and the Winooski River all flow into the Main Lake of Lake Champlain. The Main Lake is included on the § 303(d) List. The Main Lake is impaired due to phosphorus.

23. Without proper mitigation, the construction and operational stormwater discharges from Segments A and B have the potential of causing additional flushes of phosphorus into receiving waters from the creation of exposed soil at the construction site and as a result of creation of new roadway impervious surfaces. Increased loads of phosphorus to these waters have the potential of moving into the Main Lake.

24. The Main Lake of Lake Champlain does not have the assimilative capacity to accommodate additional discharges of phosphorus.

25. The ANR-authored and EPA-approved "Lake Champlain Phosphorus TMDL" (Sept. 25, 2002) (Lake Champlain TMDL) requires that projects within the Lake Champlain basin be designed to comply with the standards set forth in the 2002 Manual. Only wastewater treatment plants are required to meet numeric allocations in the Lake Champlain TMDL; projects such as the CCCH are not.

C. ANR Permits Under Appeal

26. On September 23, 2002, ANR issued Permits #1-1556 and #1-1557, covering the highway operational-phase discharges for Segments A and B of the CCCH. These permits were issued under authority of state law only, specifically applying 10 V.S.A. §§ 1263-1264 and the 2002 Manual.

27. Operational-phase Permit #1-1556 covers Segment B and part of Segment A of the CCCH, which will discharge stormwater into the Winooski River, unnamed tributaries of the Winooski River, and Redmond Creek.

28. Operational-phase Permit #1-1557 covers that part of Segment A of the CCCH which will discharge stormwater into Allen Brook.

29. On February 14, 2003, ANR issued construction-phase discharge permits for Segments A and B of the CCCH. These were ANR Individual Permit No. CP102 and two other authorizations under the Stormwater General Permit 3-9001 (2002), NOI Nos. 1030 and 1031. They were issued under authority of federal law, specifically, the CWA National

Pollution Discharge Elimination System (NPDES).

30. The ANR Individual Discharge Permit No. CP102 pertains to work in the Allen Brook watershed and covers the segment of the CCCH between Station 765+00 in Williston and the I-89 interchange in Williston.

31. The construction-phase authorization under General Permit 3-9001, NOI No.1030, pertains to two areas along the existing I-89 median in Williston that will be available to the contractor for disposal of excess soil and rock from CCCH construction.

32. The construction-phase authorization under General Permit 3-9001, NOI No.1031, covers the segment of the CCCH between VT 117 in Essex and Station 765+00, which is a point just south of Mountain View Road in Williston

D. Construction-Phase Stormwater Management for All Receiving Waters

33. The construction-phase stormwater management for Segments A and B of the CCCH involves phasing plans and measures to minimize erosion and its impacts on water quality. For river and stream crossings, the highway was located so as to preserve natural drainage ways to the greatest extent possible and make use of these natural drainage ways to collect stormwater.

34. In general, construction will occur in the follow sequence:

(1) construction areas will be surveyed and staked out;

(2) silt barriers and construction-limit fencing will be installed to prevent degradation of sensitive areas and to prevent the transportation of sediments outside the construction area;

(3) vegetation will be cleared for roadway construction within the right-of-way but not beyond the established construction limits, while a 15-foot-wide swath will be cleared (but not grubbed) along the right-of-way line to allow for installation of the right-of-way fence;

(4) stumps and roots will be grubbed and actual construction of roadway, structures, utilities, etc., will occur;

(5) disturbed areas will receive final grading, seeding, and mulching (seeding and mulching will occur concurrently with roadway construction and within 48 hours of final grading); and

(6) disturbed areas will receive final landscaping. Because of planting requirements and time of year, final landscaping may not occur until after the new roadway is open to traffic.

35. Phasing of construction areas so as to limit the area of earth exposed at any given time is an important means of minimizing erosion. Preventing and minimizing erosion is more effective than controlling sediment after erosion. The plans for the CCCH incorporate such phasing techniques to the maximum extent feasible.

36. A number of specific erosion control techniques will be used throughout construction of the CCCH:

(1) Temporary stone check dams will be constructed within drainage paths to reduce velocities and sediment transport until permanent erosion control devices are completed or established;

(2) Drainage will be provided by shaping excavation and embankment areas in such a manner that runoff is intercepted and directed to areas yet undisturbed by construction or to temporary sediment basins;

(3) Construction sites will remain rough graded until final land treatment is applied. Final land treatment will be applied concurrently with roadway construction to the extent possible. Disturbed areas will be temporarily seeded and mulched to protect exposed soils against erosion until permanent measures are applied;

(4) Where stone lining or reinforcement is specified, the stone reinforcement shall be placed concurrently with the swale formation;

(5) The contractor will be required to seed with annual rye all areas disturbed by construction on a continuous basis and prior to winter shutdowns, unless otherwise approved by VTrans in cooperation with the ANR; and

(6) Erosion matting will be installed as appropriate.

37. As an integral part of minimizing water quality impacts, construction activities will be monitored on a daily basis by a VTrans' resident engineer, an environmental inspector, and resident inspectors. The Permittee will be required to designate an on-site plan coordinator who has authority to stop or modify construction activities as necessary to comply with the Project erosion and sediment control plan and terms and conditions of the General Permit. See General Permit 3-9001, Part II.D. The inspector will keep daily logs, report any deficiencies to the contractor and then follow-up to make sure corrective measures are taken in a timely manner.

38. ANR will receive periodic inspection reports, be able to visit the site, and require that erosion control measures be adapted to reflect the conditions actually encountered. ANR's water quality engineer, Water Quality Division, DEC, and the ANR regulators responsible for enforcing the NPDES program will visit the construction site during the construction operation. During these visits, ANR's water quality engineer can review the erosion control plans, tour the site, consult with the resident engineer and environmental and resident inspectors, and review the inspection logs. Such oversight and review will help provide a proactive adaptive management approach to erosion control.

39. Construction phase management of stormwater runoff will be handled through the implementation of appropriate Best Management Practices (BMPs). There will be ongoing inspection and maintenance of the BMPs.

40. Nine general conditions to minimize water quality impacts will apply to all work on Segments A and B of the CCCH during construction:

(1) Exposed earth will be seeded and mulched no less often than every two weeks between May 1st and October 15th unless the area is being actively worked;

(2) In areas adjacent to the watercourses, the contractor will be required to make every effort to complete work as quickly as possible;

(3) Construction limits will be defined as 10 feet beyond the cut or fill limits unless otherwise defined on the project plans. An exception to this will be clearing (which does not include grubbing) of a 15-foot-wide swath for the right-of-way fencing;

(4) The maximum exposed earth at any other time must not exceed 200,000 square feet;

(5) The maximum non-roadway area protected by temporary measures must not exceed five acres;

(6) All soil areas will be temporarily or permanently seeded and mulched, to the extent possible, by September 15 of each year of construction;

(7) Temporary or permanent measures adequate to protect disturbed construction areas through the winter must be in place and established by October 15th of each year of construction;

(8) No earthwork will be allowed between October 15th and May 1st of any year of construction unless approved in advance by VTrans and ANR; and

(9) Weather conditions will be monitored during the construction season. If an extended rain period or heavy rain is predicted, exposed soil areas will be mulched prior to and daily during the rain event. If determined necessary by VTrans' resident engineer, work may be suspended or limited during the storm.

41. Construction sites and activities involve a nearly infinite array of variables that change from day-to-day. Accordingly, many states rely on a BMP approach to addressing stormwater discharges rather than the modeling of construction conditions and the establishment of sediment load allocations for discharges from specific construction activities. ANR has taken this approach and thus did not require VTrans to conduct a loading analysis.

42. To evaluate the effectiveness of VTrans' erosion and sediment control plans for the Highway's construction, ANR relied on its 1987 "Vermont Handbook for Soil Erosion and Construction Sites" (Vermont Handbook). VTrans' plans have been designed to provide, at a minimum, the protection recommended in the Vermont Handbook.

43. ANR has no erosion control guidelines for winter construction. Nevertheless, ANR has the discretion to allow winter construction activities under the terms of the construction-phase discharge permits under appeal.

44. The two areas along the existing I-89 median in Williston that will be available to the contractor for disposal of excess soil and rock from CCCH construction, and that were authorized by ANR under General Permit 3-9001, NOI No. 1030, involve an estimated 7.5 acres of disturbed area within the watershed of certain tributaries of Allen Brook. The erosion and sediment control plan developed for these two areas is sufficiently comprehensive so as to prevent releases of sediment-laden stormwater to the Allen Brook tributaries throughout the construction phase.

45. Construction for the segment of the CCCH between VT 117 in Essex and Station 765+00 in Williston, covered by ANR under General Permit 3-9011, NOI No.1031, involves an estimated 107+ acres of disturbed area within the watersheds encompassing the Winooski River, Redmond Creek, and certain unnamed tributaries. The erosion and sediment control plan developed for this area is sufficiently comprehensive so as to prevent releases of sediment-laden stormwater to the waters within these watersheds throughout the construction phase.

46. Short-term periods of non-conformance with the turbidity standards are allowed under the VWQS where an applicant can satisfy the conditions of the Limited Duration Activity (LDA) provision of the VWQS Section 2-03(b). ANR relies on the limited duration provision of the VWQS in authorizing certain construction activities that result in temporary non-conformance with one or more criteria of the VWQS authorized by

Section 2-03(b).

47. VTrans has sought authorization for construction activity discharges to Allen Brook in connection with work on Segment A of the CCCH**.** As many as 94 acres of land within the Allen Brook watershed may be disturbed during the course of four years of construction of this portion of highway; however, considerably less acreage will be disturbed at any one time. Construction of Segment A within the watershed of Allen Brook may result in unavoidable limited duration exceedences of the VWQS for turbidity, total suspended solids (TSS) and settleable solids, especially during eleven days of construction involving the Allen Brook crossing referred to in Finding 5 and other infrastructure. As a consequence, VTrans sought and was granted certain LDA waivers by the ANR which are incorporated into ANR Individual Discharge Permit No. CP102.

48. The criteria for which waivers were granted are turbidity and, with respect to aquatic habitat criteria, TSS and settleable solids. The terms and conditions of the permit have been designed to limit adverse impacts to water quality as a result of the non-compliance to the greatest extent possible through the use of BMPs, phasing, monitoring and other measures. The non-compliance is unavoidable given the purpose and design of the Project and shall occur for the shortest period of time necessary. Given VTrans' approach to erosion and sediment control in the Allen Brook watershed, any adverse impacts on water quality are likely to be temporary and de minimis. Therefore, it is reasonable to assume that existing uses will be maintained and protected, especially in the absence of credible, specific evidence to the contrary.

E. Operational-Phase Stormwater Management for All Receiving Waters

49. An estimated 22.3 acres of impervious area will be created in Segments B and part of A in the Winooski River and Redmond Creek watersheds, covered by Operational-Phase Permit #1-1556. This same portion of the CCCH will involve approximately 117.7 acres of pervious right-of-way (ROW). See VTrans Exhibit #30. An estimated 17.7 acres of new and 3.89 acres of existing impervious area will be involved in the part of Segment A within the Allen Brook watershed, covered by Operational-Phase Permit #1-1557, for an estimated total of 21.59 acres of impervious area. Another 73.4 acres of pervious ROW will be created in this portion of the CCCH.

50. To treat and control stormwater discharges from impervious surface in Segments A and B of the CCCH, VTrans proposes to rely on BMPs from the 2002 Manual to reduce sediment and phosphorus loading into the receiving waters from the Project's operational phase discharges. The 2002 Manual's BMPs are technology- or performance-based, rather than water-quality or effects-based. The 2002 Manual and its standards, however, address concerns relating to downstream channel degradation,

groundwater recharge, thermal effects, and efficient sediment removal.

51. The 2002 Manual does not require the use of non-structural BMPs (such as vegetated riparian buffers or stream rehabilitation techniques). The 2002 Manual also does not expressly require cold climate design although a number of the practices take into consideration winter-time conditions.

52. VTrans proposes to use vegetated buffers, grassed swales, and overland flows as the primary stormwater treatment devices within the ROWs of Segments A and B.

53. Proper implementation of the 2002 Manual's BMPs will result in meaningful reductions in pollutant loading from the Project into the receiving waters**.** Implementation of BMPs from the 2002 Manual, however, will not necessarily achieve a "no net increase" in loading by themselves. Indeed, the objective of the Water Quality Treatment Standards (WQTS) in the 2002 Manual "is to capture 90 percent of the annual storm events, and to remove 80 percent of the average annual post development total suspended solids load (TSS), and 40 percent of the total phosphorus (TP) load." See 2002 Manual at 1.1.1.

54. Even properly built, each BMP identified in the 2002 Manual cannot remove all pollutants from stormwater discharges. See 2002 Manual, Appendix D.3. Higher efficiencies, however, can be achieved through the application of a combination of properly designed and installed stormwater treatment and control measures, rigorous maintenance, winter sand reduction, and other measures.

55. During the operational phase of the Project, VTrans intends to employ multiple, *cumulative* stormwater treatment measures: (1) sheet flow from pavement edge across vegetative terrain; (2) grass swales; (3) catch basins with sumps; (4) and extended retention prior to release. The effectiveness ratings of each of these measures may vary, but together they provide greater protection than any one method.

56. Sheet flow from the edge of the pavement will cross, on average, 24 feet of vegetated filter strips (grassed embankments) before reaching the grass swale. TSS removal rates from grass filter strips ranges from 40% to 86%, and can approach 95% in certain circumstances.

57. The primary BMP that VTrans proposes to use is grass swales designed in accordance with the 2002 Manual. These swales have been designed to take into account all factors relating to treatment effectiveness, including the depth and velocity of water passing through those swales, with a goal of increasing residence time. The swales are expected to achieve an 80% efficiency in TSS removal.

58. The Project's proposed dry detention basins are designed primarily to provide channel

protection through extended retention, as provided in the Manual. In some cases, the basins also provide control for over bank protection under the 10-year storm condition. Although these basins are not relied upon as the primary water-quality treatment device for the Project, extended dry detention basins have been shown to provide 68 to 90% removal of TSS.

59. While the soils along the CCCH corridor may be clayey and therefore may not provide for optimal infiltration, and while they may be frozen during the winter months, the treatment system as a whole can be expected to result in significant reductions in TSS and other pollutants during Project operations. The swales in combination with other measures proposed by VTrans will result in at least 80% removal efficiencies, as verified by the Center for Watershed Protection, and may result in greater efficiencies.

60. In addition to the treatment methods designed into the CCCH, the following regular VTrans maintenance practices will minimize pollutant load: (1) policing and picking up litter and animal carcasses; (2) annual sweeping and removal of sediments that accumulate along curb or Jersey barrier sections; (3) roadside mowing; (4) non-use of fertilizers; (5) installation of fencing along the right-of-way to reduce wildlife within the highway corridor and minimize human intrusion; (6) repair and correction of erosion issues if they are encountered following construction; and (7) when necessary, repair/removal of accumulated sediments from roadside swales, storm-sewers, culverts and catch basins.

61. The permanent stormwater treatment and control measures for Segments A and B of the CCCH have been designed in full conformance with the Manual. The updated CCCH stormwater management plan considers four important elements: (1) method of conveyance (how runoff from the highway is collected and transported from and through the project area); (2) method of treatment of runoff prior to discharge; (3) method of control (how the proposed peak rate of runoff affects the receiving water and/or lands downstream of the Project when compared to existing flows during the bank-full event (one-year storm), the over-bank event (10-year storm), and the extreme flood event (100-year storm); and (4) method of groundwater recharge (how the runoff and site will be developed to achieve groundwater recharge).

62. Under Operational-Phase Permits #1-1556 and #1-1557, the permanent stormwater control measures installed by VTrans will be subject to frequent inspection and maintenance. By September 30 of each year, VTrans, in accordance with these permits, will submit a written report to ANR outlining the inspection and maintenance activities carried out in the preceding year.

F. Segment A Operational-Phase Discharges into Allen Brook and Proposed Offsets

1. Sediment

a. Analysis Using FHWA Methodology

63. Segment A of the CCCH will cross Allen Brook within the impaired segment described above in Findings 4 and 5. It will also discharge treated stormwater into Allen Brook at three points. As noted above in Finding 15, sediment is the primary "pollutant of concern" for Allen Brook. Because Allen Brook is impaired for stormwater and because no TMDL or wasteload allocation has been prepared for this receiving water, VTrans was required to file an application with ANR for its new operational-phase discharges of stormwater into Allen Brook in accordance with 10 V.S.A. §1264(g). VTrans has prepared sediment loading analyses in order to demonstrate that the stormwater management control and treatment measures that it proposes to institute in the Allen Brook watershed will assure no "net increase" in the pollutants of concern which presently impair this receiving water.

64. VTrans' stormwater consultant, John K. Benson, P.E., of DuBois & King, Inc. (Dubois & King), analyzed how the proposed CCCH would affect Allen Brook by selecting an analytical method specifically developed by the Federal Highway Administration (FHWA) for analysis of highway projects.

65. Using the FHWA methodology, assuming no treatment measures, and taking no credit for the preexisting sediment loading to Allen Brook from the land within the CCCH right-of-way in its present undeveloped state, Dubois & King projected that the load of TSS from the CCCH into Allen Brook would range from 3.7 to 4.8 tons per year.

66. Mr. Benson acknowledged a mathematical error in his original application of the FHWA methodology, but after correction of the error, Dubois & King's analysis has demonstrated that the load of TSS from the CCCH into Allen Brook will still be minimal, and with the implementation of a low-sand and aggressive maintenance program, the Project can result in no net increase in the sediment load to Allen Brook.

67. Dubois & King has accounted separately for sand that would be applied to the CCCH for winter maintenance. Under the winter maintenance plan, VTrans' district transportation administrator will be responsible for maintenance of the completed CCCH. Based on data provided by this administrator, it can be expected that winter sanding will generate 7.04 tons per year, resulting in a total projected sediment load (assuming no treatment and ignoring pre-CCCH loads) in the range of 10.76 to 11.88 tons per year. However, taking into account the multiple and cumulative treatment expected to be provided by the stormwater treatment measures described above, Dubois & King determined that the expected TSS loading to Allen Brook will actually be reduced to between 0.14 and 2.38 tons per year.

b. Sand Reduction Offset Plan

68. To provide an extra measure of safety that the CCCH will create "no net" increase in TSS loading to Allen Brook, VTrans proposes to institute a Sand Reduction Offset Plan. It would designate a 1.2-mile-long segment of existing US 2 within the Allen Brook watershed as a low-sand segment, and reduce use of winter sand to two cubic yards per two-lane mile per year. VTrans has calculated a reduction of 16 tons of sand applied per two-lane mile or 19.2 tons for the entire 1.2-mile long low-sand segment of US 2, per year.

69. Since VTrans assumed that not all winter sand applied to US 2 reaches Allen Brook, Dubois & King examined the Sand Reduction Offset Plan under different stormwater treatment scenarios. If the existing stormwater management system along the designated segment of US 2 met the Manual's criterion for 80% removal of TSS, the reduction in TSS loading to Allen Brook resulting from implementation of the low-sand program would be 3.84 tons per year – that is, 19.2 tons/year x 20% = 3.84 tons/year. Since the US 2 stormwater management system predates the Manual and current knowledge concerning stormwater management by many years, it is probably more realistic to assume that US 2 achieves only modest success – such as 68% removal of TSS. Using the 68% removal value, the resulting reduction in TSS loading to Allen Brook from implementation of the sand-reduction program would be 6.14 tons per year.

70. In order to further increase TSS reductions, VTrans proposes other measures as part of the Sand Reduction Offset Plan. It would inspect and clean accumulated sediments from approximately 30 VTrans-owned catch basins along US 2 in the village area of Williston (which is in the Allen Brook watershed) three times per year: spring, midsummer, and fall. VTrans also proposes to inspect and remove accumulated sediments along curb lines in the parking lots annually.

71. The Sand Reduction Offset Plan proposed by VTrans is not a credible offset for new sediment pollution from the CCCH. First, VTrans has already begun reduction in the application of sand to Route 2 (an estimated 2.5 cubic yards per two-land mile in 2001-2002 and 5.5 cubic yards during 2002-2003) because it has found that salt works better than sand. Thus, the sand-reduction program is not a new commitment by VTrans designed solely to serve as an offset. Second, EPA regulations since 1999 have required VTrans to reduce its application of sand on US 2, because US 2 is a Municipal Separate Storm Sewer (MS4). Thus, VTrans has a *prior* obligation to make this reduction and therefore the Sand Reduction Offset Plan cannot be used to offset new stormwater discharges.

2. Sediment and Phosphorus

a. Analysis Using "Simple Method"

72. To verify and expand upon the Dubois & King analysis, VTrans retained consultant Jeffrey A. Nelson of Pioneer Environmental Associates, LLC (Pioneer) to perform further analysis of the CCCH's impact on stormwater impacts to Allen Brook. For these analyses, Pioneer employed the Scheuler "Simple Method"(2000). This method is a widely used and accepted approach for the estimation of pollutant loads within a watershed associated with stormwater runoff. The Simple Method allows the comparison of alternative land uses, combined with treatment and management options. This empirical method is intended to provide reasonable estimates of annual pollutant loads, from which decisions can be made regarding the appropriate nonpoint source management approaches to be applied, and it is a scientifically reliable and appropriate method for calculating the pollutant loads of Allen Brook, in this instance TSS and other pollutants associated with stormwater.

73. The Simple Method can be used to assess changes in pollutant loading due to proposed development projects, since the loading can be computed for pre- and post-project conditions, reflecting the changes in land uses. The method is also well suited to assessing changes in loading due to offsets from changes to existing land cover.

74. The Simple Method is primarily intended for use on development sites less than a square mile in area. One square mile is 640 acres. The development site associated with the CCCH and adjacent right-of-way areas (post-construction) in the Allen Brook watershed is only 81 acres. Thus, even adding the ten acres described in the Supplemental Offset Plan (Finding 85 below), the total number of acres within the watershed for which land uses will change as a direct result of the Project would only be 91 acres.

75. The Simple Method considers the following variables to calculate total annual loading from a given area: watershed size, annual rainfall amount, land use conditions, and expected pollutant concentrations, which reflect treatment measures in place. Pollutant concentration values were obtained by reference to several technical studies and publications, but the primary source is the New York State Department of Environmental Conservation (NYSDEC) Stormwater Management Design Manual - Draft (NYSDEC 2001a). In developing its calculations, Pioneer used site-specific data related to local rainfall and land use types.

76. The Simple Method predicts the annual load of a pollutant from a particular project area or watershed using expected mean pollutant concentrations associated with particular land uses, as well as other variables. In Pioneer's initial analysis, later expanded, the assigned TSS concentration in stormwater runoff from transportation as a land use was 142 milligrams per liter (mg/L), compared, for example, to 51 mg/L for forested land as a land use.

77. Pioneer calculated and compared pollutant loads under existing conditions, the proposed Project with *no* stormwater treatment, the proposed Project with the proposed stormwater control and treatment measures designed in accordance with the 2002 Manual, and the proposed Project with the proposed stormwater treatment measures plus the Supplemental Offset Plan described below in Finding 85.

78. To provide a watershed-based context for the development site pollutant loading calculations, Pioneer analyzed the Allen Brook watershed that includes or is upstream of the stormwater discharge points for the CCCH. The entire Allen Brook watershed is 14.4 square miles, but that portion of the Allen Brook watershed upstream of the stormwater discharge points has a total drainage area of 6,090 acres (9.5 square miles). This watershed was divided for analysis into a total of 18 subwatersheds, based on existing drainage patterns and tributaries. Pioneer utilized the Town of Williston Tax Map, parcel-based information from the Chittenden County Regional Planning Commission, as well as Geographic Information System (GIS) layers (October 2001), to determine the appropriate land use classification for the existing use of each parcel within the Allen Brook watershed, and the following land use categories were assigned based on the primary land uses identified: commercial, cropland, forest, meadow, open space, residential, transportation, and water.

79. In order to be certain of its analysis, Pioneer undertook an extensive survey of technical literature for values for TSS from highway runoff. Pioneer used a TSS level of 142 mg/L for transportation land uses. Pioneer's 142 mg/L figure is within the generally accepted range. The accuracy and reliability of Pioneer's pollutant concentration levels of sediment for highway uses is confirmed by the comprehensive studies of federally-mandated MS4 programs undertaken by the Appellants' witness, Dr. Robert Pitt. Dr. Pitt examined the pollutant concentration levels for highways described as "mixed highways," which consist of highways with a range of sizes. Dr. Pitt determined that the TSS level for these transportation uses was actually 143 mg/L.

80. Although the 2002 § 303(d) List includes only sediment and pathogens as "pollutants of concern" for Allen Brook, Pioneer used the earlier more extensive 2000 § 303(d) listing for its analysis in order that the results as to prior pollutants of concern would also be available and addressed. Pollutants of concern listed on the earlier § 303(d) List were: Nutrients - Total Phosphorus (TP) and Nitrogen (NO3-N); and Metals - Arsenic, Copper, Lead, Mercury, Zinc; and Total Metals. Pioneer did not do a numerical analysis for pathogens within the watershed; due to highly variable characteristics of pathogen loads, there are no reliable empirical data regarding loading or removal rates. In addition, since there is no source of increased pathogen loading associated with the CCCH, an analysis of pathogen loading was not warranted.

81. Using the 2002 § 303(d) List as a basis for analysis, Pioneer did a pollutant loading

analysis for sediment (TSS) for the operational phase of the Project for discharges into Allen Brook. Pioneer's analysis of the Project, incorporating VTrans' proposed stormwater treatment and control measures, shows that sediment load into the Allen Brook will be *less* after the CCCH is built than it is currently: the total sediment load is predicted to be 974,508 pounds per year, a decrease of 1,260 pounds per year from existing conditions, which is 975,769 pounds per year. See VTrans Exhibits #45 and 47.

82. Pioneer's analyses did not consider the additional sediment load reductions that would likely result from the implementation of the reduced road sanding and supplemental catch basin cleanings on US 2 (Sand Reduction Offset Plan), described in Findings 68 through 70 above**.** Indeed, the Sand Reduction Offset Plan is not necessary to achieve a "no net" increase in sediment load in Allen Brook. As Pioneer's analysis has demonstrated, the permanent stormwater treatment measures that VTrans will employ in the Allen Brook watershed during the operational-phase of its Project are sufficient in and of themselves to result in an actual reduction in TSS from existing conditions.

b. Supplemental Offset Plan

83. According to Pioneer's analysis**,** the existing pollutant load for phosphorus in Allen Brook is 3,810 pounds per year while the predicted load is 3,844 pounds per year for the CCCH with the proposed stormwater and treatment control measures in place. Allen Brook, however, is *not* presently identified as impaired for phosphorus under the 2002 § 303(d) List.

84. The Appellants, nevertheless, alleged in their Notice of Appeal that, among other things, Allen Brook is in fact impaired for phosphorus which, in turn, adds to the phosphorus impairment of Lake Champlain. Therefore, in response, as a precautionary measure, VTrans proposed a Supplemental Offset Plan to address the slight increase in phosphorus that the CCCH is projected to generate as a result of stormwater discharges during its operational phase.

85. The proposed Supplemental Offset Plan consists of the conversion of 10.0 acres owned by the Town of Williston and immediately adjacent to the right-of-ways for both the CCCH and existing I-89 from its current use as tilled cropland (used to grow corn) to untilled meadow. This offset area is in the same subwatershed (SW-2) of Allen Brook as the discharge from the CCCH, and the Town of Williston has provided conceptual approval to the lease of this land to VTrans for purposes of implementing this conversion and offset.

86. Pioneer's analysis of the Supplemental Offset Plan, in addition to the treatment and control measures designed into the Project, yields a total predicted phosphorus load of 3,812 pounds per year, which represents only a slight increase over existing conditions

(3,810 pounds per year) of 2 pounds per year. With treatment and control measures, but no Supplemental Offset Plan, the phosphorus load would be 3,822 pounds per year, a slight increase of 12 pounds per year over existing conditions.

87. The Supplemental Offset Plan, in conjunction with the proposed stormwater treatment and control measures, would reduce other substances below existing levels (again, these other substances were listed as impairments on the 2000 § 303(d) List for Allen Brook, but not on the 2002 § 303(d) List). For nitrate-nitrogen, the load was predicted to be 18,073 pounds per year, a further decrease from existing conditions of 18,241 pounds per year. Finally, for total metals, the load was predicted to be 3,045 pounds per year, a change from existing conditions of 3,010 pounds per year.

3. Pathogens

88. As noted above in Finding 15, other than sediment, pathogens are the only "pollutant of concern" identified in the 2002 § 303(d) list for Allen Brook. The CCCH will not generate wastewater or animal wastes, and thus there will be no significant or measurable and detectable increase in pathogens discharged to Allen Brook.

89. VTrans will limit pathogens in highway stormwater runoff by implementing stormwater BMPs, by policing the removal of litter and animal carcasses, and by installing fencing along the right-of-way to reduce wildlife within the highway corridor and minimize human intrusion.

90. The pre-existing situation of the Project right-of-way within the Allen Brook watershed is that of reverting or active farmland. Thus, the potential for livestock waste actually will be reduced once the highway is constructed.

G. Other Possible Operational-Phase Water Quality Impacts to Segment A

1. Groundwater Recharge

91. "Recharge" refers to absorption of surface water into the soil to maintain groundwater levels. Pavement and other impervious surfaces cause stormwater to run off rather than be absorbed, thereby diminishing the recharge of groundwater.

92. The use of sheet flow across vegetated embankments, grass swales and extended detention, described in Findings 52 and 55 above, are all features employed in the design of the CCCH to address recharge in compliance with the standards of the 2002 Manual. Section 3.5 of the 2002 Manual states that "use of a grass channel will automatically meet the minimum recharge requirements regardless of geometry or slope."

93. The CCCH will not reduce groundwater recharge or the base flow of Allen Brook. The Project's new impervious surface area of 17.7 acres represents approximately a 0.2% change in cover type within the 9,280 acre watershed. On a total watershed basis, the percentage of impervious area will change from 6.38% to 6.62% with the addition of the CCCH.

94. The CCCH is a linear project that does not parallel surface and groundwater flows, so that its 17.7 acres of new impervious surface area will not reduce recharge or groundwater flows at a single point; rather, the imperviousness (and any other effects) will be diffused over a large area. Taking this into account, particularly combined with the recharge standards built into the CCCH's stormwater treatment and control measures and the very small change (0.1%) in impervious cover in the Allen Brook watershed, it would be highly speculative to expect any change in base flow or groundwater discharge to Allen Brook as a result of the CCCH.

2. Hydrologic Conditions

95. The CCCH incorporates stormwater treatment and control measures to adequately address a full range of hydrologic conditions and concerns as provided for in the 2002 Manual. These include: channel protection (via design for extended detention storage for the 1 year, 24-hour rainfall), overbank flood protection, and extreme flood protection.

96. Detention ponds have been designed and incorporated so that the post-development discharge rates from the areas to be occupied by the CCCH into the relevant watersheds do not exceed the pre-development discharge rates. This design accomplishes proper channel, overbank, and extreme flood protection.

3. Thermal Impacts

97. Thermal impacts, meaning the warming of receiving waters due to stormwater discharges compared to pre-existing conditions, typically result from rain on hot pavement. This occurs most frequently as a result of late afternoon summer thundershowers. However, the CCCH's use of sheet flow across grassed embankments has an immediate cooling effect on the runoff. Also, the subsequent cumulative measures of grass swales, subsurface piping, and detention basins each have a cooling effect. Where feasible, landscaping has been located so as to shade these measures and enhance their cooling effect. The detention basins for Allen Brook have been designed to a 12-hour standard, limiting the potential for thermal gain.

98. For discharges into Allen Brook, the detention measures are designed to achieve a 12-hour storage cycle, rather than the 24-hour discharge cycle used elsewhere in the Project. This shorter interval protects against thermal impacts so as to protect the cold fish

habitats in Allen Brook.

H. Segments B and part of A Operational-Phase Discharges

99. As noted in Findings 12 through 14 above, the Winooski River, Redmond Creek, and unnamed tributaries thereof are not identified on the 2002 § 303(d) List as water-quality impaired for stormwater or any other pollutants of concern. Accordingly, ANR did not require VTrans to conduct a loading analysis for the watersheds in this portion of the CCCH in connection with its application for Operational-Phase Permit #1-1556. Instead, VTrans relies on the rebuttable presumption in 10 V.S.A. § 1264(e) that if it designs, constructs and implements stormwater treatment and control measures in conformance with the 2002 Manual, this portion of the CCCH will comply with the VWQS.

100. As noted in Findings 21, Muddy Brook is downstream of Allen Brook and Segment A operational phase discharges will not directly discharge into the 300 feet of Muddy Brook that exists between Allen Brook and the Winooski River. Moreover, although Muddy Brook is impaired for aquatic life support due to land development, erosion, and urban runoff and no TMDL or wasteload allocation is in place for the clean-up of this receiving water, Muddy Brook is not principally impaired for collected stormwater discharges. Accordingly, ANR did not require VTrans to conduct a loading analysis for the Muddy Brook watershed in connection with its application for Operational-Phase Permit #1-1557, for Project discharges to Allen Brook. Rather, VTrans relies upon compliance with the 2002 Manual and the rebuttable presumption in 10 V.S.A. § 1264(g)(1)(A) in support of the conclusion that Project operational phase stormwater discharges into Muddy Brook comply with the VWQS.

101. As noted in Findings 22 through 25, Lake Champlain is impaired for phosphorus and a TMDL has been duly adopted to remediate this condition. Accordingly, VTrans relies upon compliance with the 2002 Manual in support of the conclusion that Project operational-phase stormwater discharges for both Segments A and B comply with the VWQS.

I. Anti-Degradation Analysis

102. VWQS, Section 1-03, sets forth the Anti-Degradation Policy for the State of Vermont as required by the CWA. Neither ANR nor the Board have promulgated an anti-degradation policy implementation rule to provide direction concerning how an applicant is to demonstrate compliance with the State Anti-Degradation Policy.

103. Both ANR and VTrans acknowledge that an anti-degradation review is required for the CCCH stormwater discharges for Segments A and B; however, they disagree with the

Appellants regarding what analysis and proof is required.

104. The Secretary of ANR has not specifically designated the existing uses for these receiving waters in accordance with VWQS, Section 1-03(B). Although ANR has collected considerable data about specific aspects of the biological functions of some of the receiving waters in this proceeding, including Lake Champlain, it has never systematically identified or inventoried the existing uses, reference conditions, or chemical, physical, and biological characteristics of the rivers and streams that are likely to receive some discharges of treated stormwater from Segments A and B. ANR also has not required VTrans to conduct an inventory of existing uses in connection with this proceeding nor did VTrans voluntarily include such information in its permit applications.

105. ANR takes the position that design of the CCCH in compliance with the standards in the Manual and adherence to BMPs during the highway's construction, assures that the water quality impacts of the Project will be de minimis and insignificant and that therefore any and all existing and designated uses will be protected.

106. According to ANR, because the CCCH meets the requirements of the Manual, it was not necessary for either ANR staff or the Applicant to inventory specific aquatic biota in the receiving waters of Segments A and B, including threatened and endangered species, in order to satisfy State anti-degradation analysis requirements.

107. During application preparation, VTrans made inquiries of the Nongame and Natural Heritage Program, ANR, and did not receive any comments in response regarding the presence of threatened or endangered species that might be affected by the Project. VTrans, however**,** contacted the Nongame and Natural Heritage Program, just prior to the Board's hearing, and edited a draft letter prepared by ANR to confirm that there were no threatened or endangered species present in the receiving waters near the points of Project discharge.

108. The Secretary of ANR or her designee has not specifically identified which of the receiving waters involved in this proceeding are "higher quality waters" for analysis under the second tier of the State Anti-Degradation Policy, VWQS, Section 1-03(C).

109. Waters that are impaired for one or more pollutants of concern are not "higher quality waters," within the meaning of the State Anti-Degradation Policy, at least with respect to the criteria for which those receiving waters are impaired.

J. Segments A and B Compliance with Lake Champlain TMDL

110. According to the Lake Champlain TMDL, a project that has been designed in full

accordance with the 2002 Manual complies with the TMDL implementation plan. As previously noted in Finding 25, there is no requirement in the Lake Champlain TMDL that the CCCH or any other project than a wastewater treatment plant meet a specific numeric allocation. Moreover**,** if a project meets and implements State standards for erosion control practices during construction, an offset is not required in order to meet the TMDL implementation strategy.

111. With respect to the design and permitting of new stormwater discharges, the Lake Champlain TMDL states at 60:

> Stormwater controls for new development will be evaluated for four separate criteria, including water quality treatment, channel protection, groundwater recharge, and overbank (10 year) flood protection. Specific onsite practices will be used to address each of these separate concerns. The recommended practices for water quality treatment will generally be capable of an 80% reduction in total suspended solids (TSS). While specific phosphorus loads will not be addressed in each permit, it is expected that a proportional reduction in phosphorus loadings will be achieved as a result of these TSS reductions.

112. An examination of pages 60-64 of the Lake Champlain TMDL reveals that the operational phase stormwater management system contemplated for the CCCH's "new development" complies with the requirements of the 2002 Manual, including addressing the four criteria listed above, and achieves or exceeds the 80% reduction in TSS required in unimpaired receiving waters. In the Allen Brook watershed, the TSS load, after the application of the proposed stormwater treatment and control measures, will be less than existing conditions as noted in Finding 81 above. Further, an examination of pages 65-67 of the Lake Champlain TMDL reveals that the CCCH erosion and sediment control measures conform to the requirements of the Lake Champlain TMDL.

113. Both the construction- and operational-phases of the CCCH comply with the requirements of that Lake Champlain TMDL.

IV. CONCLUSIONS OF LAW

A. Standard and Scope of Review

Appellants filed the present consolidated appeals pursuant to 10 V.S.A. § 1269. Section 1269 requires the Board to hold a de novo hearing and to issue an order "affirming, reversing or modifying the act or decision" of the Secretary of ANR or her designee. Furthermore, "the order shall be binding upon the department."

It is well-settled that in a de novo appeal, the Board does not review ANR's prior decision to determine whether the ANR acted properly. Rather, the Board hears the case "as if there had been no prior proceedings." Re: City of South Burlington and Town of Colchester, Docket No. WQ-03-02, Findings of Fact, Conclusions of Law, and Order at 8 (Dec. 29, 2003) (hereinafter City of South Burlington), citing In re Deerfield Hydroelectric Project, Docket Nos. WQ-95-01 and WQ-95-02 (Cons.), Chair's Evidentiary Rulings at 4 (Feb. 5, 1997) (construing In re Killington, Ltd, 159 Vt. 206, 214 (1992)). Nevertheless, particularly in cases which present matters of first impression, as in this situation, the Board may need to inquire of ANR and other parties concerning what legal and policy considerations were considered or rejected by ANR in the proceeding below in order to obtain guidance about what factual and legal considerations the Board should be governed by in its own proceeding. This is necessary in order to reach the ultimate conclusion whether to affirm, reverse, or modify the act or decision of the Secretary of ANR and also to decide, under the appropriate circumstances, what guidance it should provide ANR concerning the interpretation and application of the statutes and VWQS that govern the management of state water resources within both the Board's and ANR's jurisdictions.

The law governing the stormwater discharges from the proposed CCCH is a patchwork of state and federal law. In 2002, the Vermont General Assembly significantly amended state law respecting the management of stormwater runoff. Act No.109 (2001 Adj. Sess.), eff. May 16, 2002.[3] This legislation gave the Secretary of ANR new authority for the administration of a comprehensive stormwater management program. Of particular relevance to the present appeals are those provisions of Act No.109 that were codified as 10 V.S.A. § 1264(e)-(h).

As the Board recently stated,

> . . . it is a bedrock principle of Vermont law that every discharge into Vermont's waters must conform with the Vermont Water Quality Standards and that a discharge permit cannot be issued for a new or increased discharge of pollutants of concern into impaired waters in the absence of a valid plan reasonably assuring that the receiving waters will be able to assimilate these pollutant loads.

In re Morehouse Brook, Englesby Brook, Centennial Brook, and Bartlett Brook, Docket Nos. WQ-02-04, -05, -06, and -07, Findings of Fact, Conclusions of Law, and Order at 28-29 (June 2, 2003) (hereinafter Morehouse Brook).

With the passage of Act 109, the Secretary was given express authority to issue individual permits approving the discharge of collected stormwater into waters where a TMDL

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[3] In 2004, the General Assembly passed additional amendments to 10 V.S.A. § 1264. H.785; Act 140 (2003 Adj. Sess.) These amendments, however, are not applicable to the appeals under consideration.

or wasteload allocation has *not* been prepared, and the Secretary may use offsets to achieve compliance with the VWQS. 10 V.S.A. § 1064(f). Moreover, in a number of instances discussed below, the General Assembly created a rebuttable presumption in favor of the permittee that a discharge authorized by ANR does not cause or contribute to a violation of the VWQS for the receiving waters with respect to the discharge of collected stormwater runoff.[4]

This presumption applies to permitted discharges into receiving waters that are principally impaired by sources *other than* collected runoff or into receiving waters that are not impaired at all, provided, at a minimum, that the applicant has designed its system for the collection and treatment of collected stormwater runoff so as to comply with the 2002 Manual. 10 V.S.A. § 1264(e), (g)(1)(A) and (h). Also, under 10 V.S.A. §§ 1263 and 1264, a discharge approved under a previously issued general permit may only be challenged on the basis of whether that

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[4] 10 V.S.A. § 1264(h) states:

> The rebuttable presumption specified in subdivision (g)(1)(A) of this section shall also apply to permitted discharges into receiving waters not on the Section 303(d) list of impaired waters, provided the discharge meets the requirements of subsection (e) of this section.

10 V.S.A. § 1264(g)(1) states:

> The secretary may issue a permit consistent with the requirements of subsection (f) of this section, even where a Total Maximum Daily Load (TMDL) or wasteload allocation has not been prepared for the receiving water. In any appeal to the board pursuant to section 1269 of the title:
>
> > (A) an individual permit meeting the requirements of subsection (f) of this section shall have a rebuttable presumption in favor of the permittee that the discharge does not cause or contribute to a violation of the Vermont water quality standards for the receiving waters with respect to the discharge of collected stormwater runoff. This rebuttable presumption shall only apply to permitted discharges into receiving waters on the Section 303(d) list that are principally impaired by sources other than collected stormwater runoff; and
> >
> > (B) the review of an individual discharge seeking coverage under a general permit issued pursuant to the requirements of subsection (f) of this section shall be limited in scope as specified in subsection 1263(b) of this chapter.

discharge is eligible for coverage under that permit, not the actual terms and the conditions of the general permit if coverage is warranted. 10 V.S.A. § 1263(b). These amendments, while intended to clarify the law of stormwater regulation in Vermont, have created new problems of interpretation and application which the Board is asked to address for the first time.

Given this context, and for the reasons set forth below, the Board concludes that VTrans has met its burden of proof and the record as a whole supports the conclusion that the storm-water discharge permits and general permit authorizations issued by DEC, ANR, should be affirmed. The Board is persuaded by the evidence, overall, that VTrans has designed Segments A and B of the CCCH so as not to compromise the existing uses of the receiving waters and any degree of higher water quality that these waters may possess.

B. Burden of Proof

The general rule in administrative proceedings is that the applicant or petitioner bears the burden of proof. City of South Burlington at 8; In re: Town of Cabot, Docket No. WQ-00-04, Findings of Fact, Conclusions of Law and Order at 2 (Sept. 18, 2000); In re Lamoille Hydroelectric Project, Docket Nos. WQ-94-03 and WQ-94-05, Findings of Fact, Conclusions of Law, and Order at 45 (Nov. 5, 1996) (hereinafter Lamoille). VTrans is the applicant in this proceeding and, therefore, it bears the burden of proof.

The burden of proof includes both the burden of production and burden of persuasion. The burden of production in this de novo proceeding means the burden of producing sufficient evidence upon which the Board can make positive findings that the Project complies with the applicable provisions of state and federal law.

The burden of persuasion refers to the burden of persuading the Board that certain facts are true. Lamoille at 46. The party with the burden of persuasion must establish the elements of its case by a preponderance of the evidence. That generally occurs when the fact finder is satisfied that a proposition is more likely to be true than not true. Id. The Vermont Supreme Court has provided further guidance with respect to the allocation of the burden of proof, specifically the risk of non-persuasion in an administrative proceeding. "The fact that a party has the burden of proof does not mean that he must necessarily shoulder it alone; it simply means that he, and not the other party, bears the risk of non-persuasion." In re Quechee Lake Corporation, 154 Vt. 543, 553 (1989) (hereinafter Quechee Lakes). Thus, as in the Quechee Lakes decision, the Board may consider all of the evidence, including that provided by parties other than the applicant in determining whether the burden of persuasion has been met.

In this particular proceeding, the Board has been limited in its review by the proscriptions and presumptions set forth in 10 V.S.A. §§ 1263 and 1264. In trying to apply the

Act 109 amendments, the Board has struggled to reconcile the plain language of the statutes with the intent and purpose of the CWA and the VWQS. At the end of the day, the Board is persuaded that VTrans has met its burden of proof that the discharge of operational-phase discharges to Allen Brook will not result in a net increase of pollutants of concern to Allen Brook and that the limited discharge of pollutants attendant to the construction-phase of the Allen Brook portion of Segment A is eligible for coverage under a construction-phase permit with LDA waivers. Moreover, the Board is not persuaded that the Appellants have overcome the rebuttable presumption in favor of issuance of the operational-phase permit for the unimpaired receiving waters in Segments A and B nor is the Board convinced that construction-phase discharges into unimpaired waters are ineligible for coverage under General Permit 3-9001.

C. Discussion

This set of appeals involves the review of permits and general permit authorizations for the discharge of stormwater during the construction- and operational-phases of Segments A and B of the CCCH. These new discharges will occur in the receiving waters of Allen Brook, unnamed tributaries of Allen Brook, Muddy Brook, Redmond Creek, and the Winooski River. These waters drain into Lake Champlain. Only Allen Brook is impaired due to stormwater runoff.

1. The New Stormwater Discharges to Unimpaired Waters Presumptively Comply with the Vermont Water Quality Standards

Part of Segment A and all of Segment B of the Project will discharge stormwater into Redmond Creek, unnamed tributaries of the Winooski River, and the Winooski River. All of these receiving waters are unimpaired for stormwater and are not otherwise included in the 2002 § 303(d) List of impaired waters. New stormwater discharges[5] into unimpaired waters that conform, at a minimum, to the 2002 Manual are afforded a rebuttable presumption that the Project does not cause or contribute to a violation of the Vermont water quality standards for the receiving waters with respect to the discharge of collected stormwater runoff. 10 V.S.A. § 1264(e), (g)(1)(A), and (h).

Subsection 1264(h) states: "The rebuttable presumption specified in subdivision

[5] The term "new stormwater discharge" is defined at 10 V.S.A. § 1264(a)(2) as meaning "a new or expanded discharge of collected stormwater runoff, subject to the permitting requirements of this chapter, which first occurs after June 1, 2002, and has not been previously authorized pursuant to" Title 10 chapter 47. The operational-phase stormwater discharges from the CCCH constitute "new stormwater discharges."

(g)(1)(A) of this section shall also apply to permitted discharges into receiving water not on the Section 303(d) list of impaired waters, provided the discharge meets the requirements of subsection (e) of this section." Subsection 1264(e) requires that any permit issued for a new stormwater discharge by the Secretary of ANR must, *at a minimum*, be consistent with the 2002 Manual, as amended from time to time, by rule. Subsection 1264(g)(1)(A) provides "a rebuttable presumption in favor of the permittee that the discharge does not cause or contribute to a violation of the Vermont water quality standards for the receiving waters with respect to the discharge of collected stormwater runoff."

In a very circular fashion, then, 10 V.S.A. §1264 gives the Secretary of ANR broad discretion to issue operational-phase stormwater discharge permits for new discharges of collected stormwater runoff into unimpaired waters, provided that an applicant demonstrates that it has incorporated into the design and management of the project the BMPs set forth in the 2002 Manual. On appeal to the Board, if the applicant has met its burden of proof that its project complies with the 2002 Manual, the burden of proof shifts to the party challenging the permit to demonstrate that the project discharge will "cause or contribute to a violation of the Vermont water quality standards for the receiving waters with respect to the discharge of collected stormwater runoff.

The term "stormwater runoff" means "precipitation that does not infiltrate into the soil, including material dissolved or suspended in it, but does not include discharges from undisturbed natural terrain or wastes from combined sewer outflows." 10 V.S.A. § 1264(a)(1). The very nature of stormwater runoff makes it difficult to reliably measure numerical pollutant concentrations during a storm event. Accordingly, for new stormwater discharges in unimpaired waters, the General Assembly has decided that compliance with the applicable design standards in the 2002 Manual results in "presumptive compliance with the [applicable] Water Quality Standards," although the Secretary of ANR may impose additional conditions, requirements, or restrictions, if he or she so elects to *assure* such compliance with the VWQS. 10 V.S.A. § 1264(e)(1)[6] and (h). With respect to Operational-Phase Permits #1-1556, the Secretary of ANR

[6] 10 V.S.A. § 1264(e)(1) states:

> Except as otherwise may be provided in subsection (f) of this section, the secretary shall, for new stormwater discharges, require a permit for discharge of collected stormwater runoff consistent with, at a minimum, the agency of natural resources' stormwater management manual dated April 2002, as amended from time to time, by rule. The secretary may issue, condition, modify, revoke or deny discharge permits for collected stormwater runoff, as necessary to assure achievement of the goals of the program and compliance with state law and the federal Clean Water Act. The permit shall require as a condition of approval,

has imposed specific maintenance and maintenance reporting requirements, as well as monitoring requirements.

Rather than effectively rebut VTrans' evidence that the Project fails to comply with the 2002 Manual or that despite compliance with the 2002 Manual, the Project discharges *will* cause or contribute to violations of the VWQS, Appellants' witnesses relied on general references to several studies for the proposition that there are more effective BMPs and other practices for achieving higher sediment removal ratings than those contained in the 2002 Manual and proposed by VTrans. The Board finds this evidence to be unpersuasive in that it does not take into account the *actual* design of the CCCH and its *combination* of measures designed to treat and control stormwater and prevent erosion or widening of the channels in receiving waters during the operational-phase of the Project.

VTrans also has demonstrated that the Project complies with the 2002 Manual's criteria for groundwater recharge and water quality. The evidence suggests that the multiple levels of treatment through overland sheet flow, grass swales, sumps and drop inlets, filter strips, and detention basins actually *exceed* the requirements of the Manual. The Appellants' concern that the swales were not designed to provide adequate residence time were clearly addressed by VTrans' witness, John Benson, in response to questions from Chair Blythe. The Board is satisfied that the swales fully conform with the residence time requirements of the Manual, and that other aspects of the Project design will effectively control and treat stormwater.

Throughout this proceeding, the Appellants have sought to collaterally attack the sufficiency of the Manual itself. ANR promulgated the 2002 Manual as a rule and the General Assembly has expressed its policy choice that compliance with that Manual presumptively demonstrates compliance with the VWQS. Without a clear demonstration that ANR's interpretation of its own regulations is wrong, the Board defers to the ANR's reading of the 2002 Manual and its requirements. See In re 1650 Cases of Seized Liquor, 168 Vt. 314, 319, 721 A.2d 100, 104 (1998).

Given the specific evidence in this case, the Board is satisfied that the Project, as

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proper operation and maintenance of any stormwater management facility and submittal by the permittee of a semiannual inspection report on the system. The permit shall contain additional conditions, requirements and restrictions as the secretary deems necessary to achieve and maintain compliance with the water quality standards, including but not limited to requirements concerning recording, reporting and monitoring the effects on receiving waters due to operation and maintenance of stormwater management facilities.

designed, and with the permit conditions imposed by the Secretary of ANR, at least with respect to the watersheds that are unimpaired, is in compliance with the VWQS. Therefore, the Board affirms the Secretary of ANR's decision to issue Operational-Phase Permit #1-1556, which covers Segment B and part of Segment A of the CCCH, and which authorizes the discharge of stormwater into the Winooski River, unnamed tributaries of the Winooski River, and Redmond Creek.

The Board expresses concern, however, that given that the stated objective of the 2002 Manual is to achieve only 80% reduction in TSS and 40% removal of phosphorus, there is the danger that water quality in these now *un*-impaired waters may be incrementally degraded over time if the Secretary of ANR relies solely on the 2002 Manual to authorize additional new discharges of collected stormwater into these waters. Therefore, as discussed later in this decision with regards to the State Anti-Degradation Policy, The Board urges the adoption of an anti-degradation implementation procedure that could help clarify when careful inventory and assessment of a receiving water's existing uses and the imposition of additional terms and conditions to monitor and modify projects to *assure* compliance with all provisions of the VWQS, not just numerical criteria, is required.

2. The New Stormwater Discharges Will Not Increase Pollutant Loading to Impaired Waters

Segment A of the CCCH will discharge stormwater into Allen Brook, which is included on the 2002 § 303(d) List as impaired for sediment and pathogens due to stormwater. As noted in Findings 88-90, the Project is not expected to be a source of pathogens. However, any new sediment loading that might be generated by the Project is a matter of concern. Operational-Phase Permit #1-1557 covers that segment of the CCCH which will discharge stormwater into Allen Brook during the operational-phase of the Project.

Stormwater discharges from this or any project must achieve reasonable compliance with federal and state law, including the VWQS. To achieve this goal, proposed stormwater discharges into stormwater-impaired waters must, *at a minimum*, comply with the 2002 Manual and, depending on the circumstances, any additional requirements that the Secretary of ANR may impose to achieve no net increase in the pollutants of concerns for that particular receiving water.

ANR has not approved a TMDL for Allen Brook. ANR concluded that the recommenda-tions contained in a draft proposed TMDL for Allen Brook were inadequately supported and unreliable. Because there is no TMDL for Allen Brook, VTrans, in order to prevail in this appeal, must demonstrate that the Project will not result in an increase in the load of sediment to Allen Brook beyond existing conditions. See In re Hannaford Bros. Co., Docket No. WQ-01-01, Findings of Fact, Conclusions of Law, and Order (Jan. 18, 2002); aff'd, Re: Hannaford Bros. Co. and Lowe's Home Centers, Inc., No. 280-02 CnCv Apr. 30, 2003); appeal

docketed VT No. 2003-539 (Dec. 4, 2003) (hereinafter Hannaford-Lowes). Pursuant to 10 V.S.A. § 1264(f)(3), the Secretary of ANR may approve an offset to achieve this "no net increase in load" standard if it is not possible to achieve compliance with this standard "on site."[7] The Board, however, is convinced by the evidence, especially Pioneers' data, that the operational-phase of the Project will result in cleaner water than presently exists, without the proposed Sand Reduction Offset Plan, given the combination of treatment and control measures that VTrans is committed to implementing.

a. FHWA Method

VTrans has demonstrated that the Project, as designed, will not result in a measurable and detectable increase in sediment to Allen Brook. VTrans' witness, Mr. Benson of Dubois & King, prepared a loading analysis using the FHWA Method, which looks at the runoff that will come off the highway. Mr. Benson's analysis reflects a conservative assessment of the potential sediment load coming off the highway during Project operations. It takes into account only the removal resulting from one method of treatment, the grass swales. However, the highway's design involves *multiple additional* methods of treatment including sheet flow, overland flow, filter strips, catch basins and sumps, and finally extended detention. Additionally, winter maintenance practices are designed to reduce the amount of sand entering the stormwater treatment and control system.

b. Sand Reduction Offset Plan

VTrans offered a Sand Reduction Offset Plan for operational-phase discharges into Allen Brook, in the event that the Board were not to adopt the sediment loading calculations of its expert witnesses. According to VTrans, the Sand Reduction Offset Plan would include reduced winter sanding along a portion of US 2 and aggressive maintenance of catch basins along US 2 and the Williston I-89 rest areas, all within the Allen Brook watershed.

Appellants argue that VTrans has a pre-existing legal obligation to reduce sanding on US 2 under the federal MS4 permit regulations, and therefore the offset is not valid. The Board notes that while VTrans submitted its permit application in July 2002, those regulations were in full force and effect even though ANR did not issue General Permit 9014 governing the small MS4s in Chittenden County, including US 2 in Williston, until March 2003. Therefore, in the Board's opinion, VTrans has a pre-existing obligation to reduce winter sand use on Route 2.

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[7] 10 V.S.A. § 1264(f)(3) states:

> In addition to any permit condition otherwise authorized under subsection (e) of this section, any permit issued pursuant to this subsection, the secretary may authorize pollution offsets as necessary to ensure the discharge does not cause or contribute to a violation of the Vermont water quality standards. Pollution offsets, where utilized, shall incorporate an appropriate margin of safety to account for the variability in quantifying the load of pollutants of concern.

Moreover, the evidence supports the Board's finding that VTrans is *already* engaged in winter sand reduction for this segment of highway. See Finding 71. Accordingly, the Sand Reduction Offset Plan proposed by VTrans is not a credible offset.

Even if the Board were to conclude that a sand reduction offset plan is an appropriate method for reducing sediment loading, the Board has found that such an offset is not necessary, given the additional information gleaned from the Simple Method analysis offered by VTrans.

c. Simple Method

VTrans' witness and consulting geologist, Jeffrey A. Nelson, conducted a sediment loading analysis of the Project within the Allen Brook watershed using the "Simple Method," a method previously recognized by the Board as a credible method. See Hannaford-Lowes at 8-9, Finding 25. In conducting his analysis, Mr. Nelson first determined the sediment load contribution under existing conditions, then determined the sediment load with the addition of the highway project, both with and without the proposed treatment measures. With the treatment measures in place, and excluding the proposed US 2 Sand Reduction Offset Plan, the Board is persuaded that the Project will actually result in a reduction in sediment load from the existing condition of Allen Brook, given the change in land use attendant with the construction of the highway and the treatment and control measures proposed by VTrans.

Appellants argue that the Board should not be persuaded by Mr. Nelson's analysis for the following reasons: (1) the Simple Method is an inappropriate analysis for a project the size of the CCCH; (2) Mr. Nelson relied on unreasonable assumptions about the effectiveness of the BMPs in removing pollutants; and (3) there is allegedly a large degree of uncertainty regarding the inputs selected by Mr. Nelson. The Board is unpersuaded by these arguments for the following reasons.

The Simple Method is an appropriate and scientifically reliable means for assessing sediment loading, "intended for use on development sites less than a square mile in area." See Finding 74. The Project site associated with the CCCH and adjacent right-of-way areas within the Allen Brook watershed is only 81 acres, considerably less than the 640 acres which comprise one square mile. Id. Therefore, the "Simple Method" was an appropriate tool for assessing the sediment loading generated by the operational-phase of the Project.

Mr. Nelson relied on the removal efficiencies set forth in the 2002 Manual to assess the Project's stormwater treatment measures. The 2002 Manual, based on a literature search of technical studies, states that the use of grass swales or open channels should result in a removal rate of 80%. VTrans Exhibit # 36. The 2002 Manual includes an environmental matrix indicating limitations for various environmental factors. For cold climates, grass channels have low limitations and are instead ranked as having a high benefit in cold climates. The removal percentages utilized by Mr. Nelson were intended to represent annual pollutant load figures, developed as a result of detailed scientific studies which are representative of a wide range of conditions, including studies performed in areas of cold climates.

The Simple Method calculations include variables for the mean pollutant concentration levels for various land uses. The higher the number, the higher the level of pollutant for that

land use. The pollutant concentration levels selected by Mr. Nelson are supported by an extensive technical literature search and by the work performed by the Appellant's witness, Dr. Pitt. As demonstrated by his rebuttal testimony, Mr. Nelson's use of a mean highway TSS of 142 mg/L is conservative and represents a higher value than the mean of the range of values he found in the literature. Indeed, this figure is just one mg/L less than the mean TSS value identified by Dr. Pitt for mixed land uses, which consist mostly of highways, in his study based on actual MS4 permit data. The pollutant concentration levels selected and applied in Mr. Nelson's load analysis are scientifically reliable and accurate and support his conclusion that the Project will not result in a measurable and detectable increase in the load of sediment to Allen Brook.

In conclusion, the Board is persuaded that the Simple Method was an appropriate tool for assessing the Project impacts, Mr. Nelson's assumptions concerning the effectiveness of the BMPs in removing pollutants was reasonable, and the Board is satisfied with the quality of his analysis. As a consequence, the Board concludes the Project will not result in a net increase in sediment (TSS) loading to Allen Brook, but rather a *decrease*, given the proposed stormwater treatment and control measures planned for the operational-phase of Segment A.

d. Supplemental Offset Plan

In conducting the Simple Method analysis, Mr. Nelson also prepared a loading analysis for phosphorus, because at the time he conducted his work for VTrans**,** EPA had not yet approved the 2002 List and the 2000 § 303(d) List had included phosphorus as a pollutant of concern. As a precautionary measure, especially since the Appellants had raised the concern that the Project would contribute additional phosphorus to Lake Champlain, Mr. Nelson conducted a phosphorus loading analysis to determine whether the Project discharges would conform to the Hannaford-Lowes "no measurable and detectable increase in load" standard.

Mr. Nelson determined that the load of phosphorus to Allen Brook before the Project (existing conditions) was 3,810 pound per year, while the predicted load with the completion of the Project – that is, with its stormwater treatment measures in place – will be 3,822 pounds per year. This is a slight increase of .03 percent or 12 pounds per year.

To compensate for this small increase in phosphorous, VTrans proposed for the first time, in the course the Board's proceeding, a Supplemental Offset Plan to convert ten acres of tilled cropland owned by the Town of Williston to untilled meadow. While it is assumed that this conversion would result in the added benefit of further reducing the sediment load, as well as phosphorus, from existing conditions, Mr. Nelson has not performed any calculations to actually quantify the amount of phosphorus reduction that could be achieved from this offset.

The Board applauds VTrans for offering a Supplemental Offset Plan to further reduce the potential discharge of phosphorus into Allen Brook. While the Board might wish to accept VTrans' offer to implement the proposed conversions of tillable cropland in order to achieve greater reductions in phosphorus, the Board has no authority to impose such a requirement in this case.

First, Allen Brook is no longer listed as impaired for phosphorus on the current § 303(d)

List. Second, the Board is not prepared to approve a Supplemental Offset Plan that hasn't undergone a public review process before the ANR. Third, even if the Board were to determine that such an offset were necessary, there is insufficient information in the record to assess the effectiveness of such an offset. For a proposed offset to be meaningful, the Board would need to know more about existing conditions, expected reductions in loads from the conversion of land use type, and be able to determine "an appropriate margin of safety to account for the variability in quantifying the load of pollutants of concern." 10 V.S.A. § 1264(f)(3). That information, along with more detailed information regarding any long-term lease arrangement with the Town of Williston, covenants, and other particulars concerning the management of this converted real property, would be necessary before such an offset could be approved as a condition of an operational-phase permit.

3. Construction-Phase Stormwater Discharges Comply with the Vermont Water Quality Standards

VTrans asserts that the NPDES Individual Permit No. CP102 and two other authorizations under the Stormwater General Permit 3-9001 (2002), NOI Nos.1030 and 1031, all comply with the requirements of applicable state and federal law. It asks the Board to affirm the two authorizations under the General Permit, as properly adhering to the terms and conditions of that permit. It also asks the Board to affirm the ANR Individual Permit No. CP102 on the basis that the construction-phase of the Project in the Allen Brook watershed has been designed with the best BMPs and any technical non-compliance with the VWQS will be as short and minimal as possible in accordance with the Limited Duration Activities provisions of standards.

a. General Permit NOIs

Pursuant to 10 V.S.A. § 1263(b), appeals of authorizations to discharge under a previously issued general permit shall be limited to whether the discharge complies with the terms and conditions of that permit. Kim Greenwood, ANR's water quality engineer and administrator of the NPDES permit program, as well as VTrans' own witness, provided ample evidence to support the conclusion that through phasing, sequencing, and implementation of BMPs, the construction-phase of the Project in the areas covered by NOI-1030 and NOI-1031 comply with the terms and conditions of the General Permit.

The Appellants have challenged the *eligibility* of these construction-phase discharges for coverage under General Permit 3-9001, because they allege that stormwater runoff from the construction sites "will cause, or have reasonable potential to cause or contribute to, a violation of water quality standards or constitute a significant contributor of pollution as defined in the General Permit Rules." General Permit 3-9001 (2002), Part I.(C)(7). The Appellants, however, have offered little evidence to support their allegation.[8]

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[8] The Appellants recently persuaded the Board that a project was ineligible for coverage under General Permit 3-9001 (2003), because the applicant could not demonstrate that its construction discharge into a stormwater-impaired receiving water would not likely cause or contribute to a VWQS violation. Re: Lowe's

With regard to all construction-phase work on the CCCH, VTrans has worked closely with ANR to integrate that agency's recommendations into phasing plans to include soil stabilization, erosion-control matting, and specific locations for construction work and erosion control measures, all to reduce the runoff of sediment from the Project. This is consistent with the testimony of the Appellants' expert, Dr. Pitt, and other stormwater experts with regard to the use of phasing and sequencing as a way to control erosion and limit the source of construction-phase stormwater runoff.

VTrans has designed Segments A and B of the CCCH to include a detailed Erosion and Sediment Control Plan in conformance with the Vermont Handbook. This plan began with the planning and design of the highway itself with due regard of how best to fit the Project into its physical environment. This process took into account how to minimize the quantities of material needed to be excavated and placed to build the embankments to support the highway and, for river and stream crossings, "every effort was made to locate the highway in a manner that would have the least impact on the water body." The design and location preserve natural drainage ways to the greatest extent possible and make use of these natural drainage ways to collect stormwater. The Plan has also been developed to address the other design principles for a Plan. See General Permit 3-9001 (2002), Part III.(B).

Without persuasive evidence in the record that the Project is ineligible for coverage under General Permit 3-9001 (2002), the Board is limited in its review to whether the discharges comply with the terms and conditions of the General Permit. The Board is persuaded that the Project discharges do comply.

b. Individual Permit

For construction-related activities in the Allen Brook watershed, VTrans applied for and was granted by ANR an Individual NPDES Permit No. CP102. An Individual Permit was required because Allen Brook is already impaired for stormwater and the potential exists that the Project will contribute to that impairment due to short-tem construction activities within the Allen Brook channel or in close proximity.

The VWQS § 2-03(B)(1) recognizes that "[c]onstruction . . . may result in unavoidable short term non-compliance with the turbidity or aquatic biota, wildlife, and aquatic habitat criteria." Such activity may be authorized as being in compliance with the VWQS, provided that the following requirements are met, pursuant to § 2-03(B)(1):

a. Any required permit specifically identifies one or both criteria for which a waiver is being granted, specifically cites this provides of these rules, and requires full compliance with other criteria;

b. Any required permit contains terms and conditions designed to limit adverse impacts

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Home Centers, Inc., Docket No. WQ-03-15, Findings of Fact, Conclusions of Law, and Order (Aug. 26, 2004). The facts in this proceeding, however, do not support the same conclusion.

to water quality as a result of the non-compliance to the greatest extent possible including, but not limited to, the use of best management practices;

c. The non-compliance is limited to the turbidity and aquatic biota, wildlife and habitat criteria, in unavoidable and occurs for the shortest period of time necessary; and

d. All existing uses are maintained and protected.

As noted in Finding 47, VTrans has sought LDA waivers for turbidity and aquatic habitat standards in connection with its request for an individual construction-phase permit. The anticipated period of nonconformance with these VWQS standards is unavoidable. The record is replete with testimony and exhibits as to VTrans' goal and efforts to minimize the impact to the physical environment, including the receiving waters, to the greatest extent possible. In particular, the footprint and location of the highway were chosen to minimize earth disturbance and impact to Allen Brook.

For the Allen Brook crossing, the period of potential nonconformance with the turbidity standards will be limited to a couple of days, while the entire period of non-conformance over a four-year period is expected to be eleven days. VTrans has demonstrated by a preponderance of the evidence that the Project is designed to minimize to the greatest extent possible any adverse impact on water quality, through, among other things, the use of BMPs. VWQS § 2-03(B)(1)(b). The Board is persuaded by the testimony of ANR's witnesses, Kim Greenwood and Tom Willard, that, with the particular safeguards imposed by the Secretary of ANR, any discharge of sediment to Allen Brook during the construction phase will have a short-term and de minimis impact on water quality and therefore the specific limited duration activity will maintain and protect existing uses.

Appellants have challenged the proposal to relocate Allen Brook from its natural channel at the Allen Brook crossing. Relocation of this short segment is needed in order to minimize the elevation and scope of the CCCH's embankments in the vicinity of Allen Brook. As the Appellants' witness Wendi Goldsmith has acknowledged, relocation can, in fact, have beneficial impacts. In any event, it is not the Board's role to redesign a Project for an applicant, but rather to approve, deny, or modify the permit on appeal which authorizes a particular discharge.

The Appellants have challenged the authority of the ANR and Board to grant exceptions to compliance with specific water quality standards for limited duration activities. They assert that such exceptions are contrary to federal policy under the CWA and unenforceable because the EPA Administrator has allegedly not approved it. ANR asserts that it has the authority to apply and enforce the EPA-approved 1997 limited duration activity provision or to elect to implement the 2000 provision**.** See FWPCA sec. 303(C)(3); see also, Alaska Clean Water Alliance, et al. v. Clark, 1997 WL 446499, 2-3 (W.D. Wash.). The Board concludes that the 2000 amendments to the VWQS were duly adopted under state law and were reviewed as part of the package of amendments approved by EPA. Even if this specific provision were not approved by EPA, the 2000 Limited Duration Activity provision is more protective of the receiving waters than the earlier 1997 provision. Therefore, as a matter of sound public policy, the more protective 2000 provision should apply.

In conclusion, the Project in Segment A complies with the requirements for the limited duration activity exception to the VWQS § 2-03(B)(1) and Individual Permit No. CP102 should be affirmed.

4. The Project Stormwater Discharges Comply with Federal and State Anti-Degradation Requirements

CLF/FOE argue that VTrans has failed to demonstrate that the Project complies with federal and state anti-degradation requirements. ANR and VTrans acknowledge that an anti-degradation review is required for the Project; however, they disagree with the Appellants regarding what analysis and proof is required.

Federal regulations define "water quality standards" as "... provisions of State or Federal law which consist of a designated use or uses for the waters of the United States and water quality criteria for such waters based upon such uses." 40 CFR 131.3(I). Federal regulations also require that an anti-degradation policy be included in a state's water quality standards as a minimum and essential element of those regulations. 40 CFR 131.6(d).

Consistent with federal law, the Vermont Water Quality Standards include designated uses, water quality criteria, *and* a state anti-degradation policy, among other elements. Vermont's anti-degradation policy, found at VWQS, Section 1-03. VWQS 1-03(A), sets forth a general policy that "[a]ll waters shall be managed in accordance with these rules to protect, maintain, and improve water quality." VWQS § 1-03(B)-(D) establish three tiers of protection for Vermont's waters. Tier One protection is designed to protect existing uses and the level of water quality necessary to protect those existing uses. VWQS 1-03(B). Tier Two is designed to protect and maintain "[waters] the existing quality of which exceeds any applicable water quality criteria." VWQS § 1-03(C). Tier Three is intended to protect specific Outstanding Resource Waters, none of which are applicable in this proceeding. See 10 V.S.A. § 1424a.

VWQS § 1-03 does not include an implementation procedure explaining how and under what circumstances anti-degradation review of a proposed discharge shall be undertaken. Thus, for example, VWQS § 1-03(B)(1) provides that the Secretary of ANR shall make determinations of what constitute existing uses and it describes two avenues for making such determinations: "[d]eterminations of what constitute existing uses of particular waters shall be made either during the basin planning process or on a case-by-case basis during consideration of an application." See also, In re: Town of Cabot, Docket No. WQ-00-04, Findings of Fact, Conclusions of Law and Order at 16 (Sept. 8, 2000). VWQS § 1-03(B)(1) does not explain, however, whether it is part of an applicant's burden of proof to conduct field surveys and present evidence of existing uses so that the Secretary of ANR can make a finding of what constitutes existing uses for the receiving waters, or, whether the Secretary of ANR, based on prior research and analysis by her staff, is charged with making such a determination as the first step in assessing the impacts to those uses of the applicant's proposed discharge. Furthermore, there is no implementation procedure which explains whether all discharges must undergo an anti-degradation analysis under at least the first two tiers of the VWQS 1-03, or whether a distinction can be drawn between construction-phase and operational-phase discharges or

between impaired and unimpaired receiving waters.[9]

The Board has considered these questions and concludes that with respect to the receiving waters not listed on the 2002 § 303(d) List, such as the Winooski River, unnamed tributaries thereof, and Redmond Creek, compliance with the Manual as required by 10 V.S.A. § 1264(e)(1) was sufficient to create a rebuttable presumption under 10 V.S.A. § 1264(h) that the Project discharges from the operational phase of the Project do not cause or contribute to a violation of the VWQS, including the state anti-degradation policy in VWQS § 1-03.[10] Had Appellants successfully rebutted this presumption with credible evidence that Project discharges would in fact cause or contribute to a violation of the VWQS, through, for example, exceedences of numeric standards or actual risks to habitat that support existing aquatic biota, wildlife, or plant life, the Board likely would have remanded this matter to ANR for further inventory work and analysis of the receiving waters under Tiers One and Two and consideration of the impacts of discharges of sediment upon both "existing" and "designated" uses. Limited

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9 The Board notes that an Anti-Degradation implementation procedure could greatly clarify when and how the anti-degradation policy should be applied. For example, such a procedure could clarify who has the burden of producing inventory data in support of "existing use" determinations for water bodies that have not been the subject of recent basin planning. Such a procedure could also clarify what type of analysis is needed for certain classes of discharge permits. Although ANR has initiated the drafting of such a procedure, neither ANR nor the Board has adopted such a procedure since the VWQS were last approved by EPA.

10 As previously noted, 10 V.S.A. § 1264(g)(1)(A) and (h) provide, in certain circumstances applicable to this proceeding, a rebuttable presumption "in favor of the permittee that the discharge does not cause or contribute to a violation of the Vermont Water Quality Standards for the receiving waters with respect to the discharge of collected stormwater runoff." Since the VWQS incorporate, as required by federal law, the state's anti-degradation policy, application of the plain meaning doctrine suggests that the presumption extends to compliance with VWQS § 1-03, unless the presumption is successfully rebutted on appeal. While the Board believes that there could be instances where, despite the application of the best control and treatment practices set forth in the 2002 Manual, a party could successfully rebut the presumption of compliance with the VWQS by demonstrating increases in sediment and other pollutants attributable to a project's collected stormwater discharges into unimpaired waters to the detriment of existing aquatic biota and wildlife or the habitat that supports such biota and wildlife, the Appellants have failed to make such a demonstration here.

evidence of the historical presence of certain rare, threatened and endangered species in the Winooski River, alone, without facts to support a finding that Project operational discharges would actually result in a new or increased discharge causing or contributing to a violation of the VWQS, was not enough to convince the Board that Operational-Phase Permit #1-556 should be remanded to the Secretary of ANR for further proceedings to determine whether those species constitute "existing uses" in need of protection, as the term "existing uses" is defined in VWQS § 1-01(B)(18).[11]

Given that the Board has concluded that the construction-phase stormwater discharges authorized by NOI No. 1030 and 1031 are eligible for coverage under General Permit 3-9001 and that they comply with the terms and conditions of the General Permit, an anti-degradation analysis under VWQS § 1-03 is not required for those permits under 10 V.S.A. § 1263(b).

With respect to Operational-phase Permit #1557, covering discharges of treated stormwater from the operational-phase of Segment A of the CCCH into Allen Brook, the Board is persuaded by the analysis performed by VTrans' consultant, Pioneer, that the Project will not result in an increased discharge of pollutants of concern. This finding obviates the need for a remand to ANR for an inventory of "existing uses" and an anti-degradation analysis under Tiers One and Two of VWQS § 1-03.

With respect to the construction-phase discharges to Allen Brook under ANR Individual Discharge Permit No. CP102, the Board concludes that an anti-degradation analysis under

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[11] Throughout this proceeding, ANR has argued that by protecting "designated uses" through application of the requirements of the 2002 Manual, "existing uses" will be protected, as though the two were interchangeable concepts. The Board notes, however, that VWQS § 1-03(B)(1) states, in relevant part: "Existing uses of waters and the level of water quality necessary to protect those existing uses shall be maintained and protected *regardless* of the water's classification." (Emphasis added.) An "existing use" is defined at VWQS § 1-01(B)(18) as "a use which actually occurred on or after November 8, 1975, in or on waters, whether or not the use is included in the standard for classification of the waters and whether or not the use is presently occurring." Thus, determination of what constitutes an "existing use" requires both a factual and a legal determination by the Secretary of ANR. A "designated use," on the other hand, means "any value or use, whether presently occurring or not, that is specified in the management objectives for each class of water as set forth in [section 3] of these rules." The Board determines "designated uses" in adopting classifications for particular waters under the VWQS. Therefore, "existing uses" are not the same as "designated uses," and merely achieving the water quality classification goals for Class B waters is not necessarily sufficient to assure protection of existing uses in all receiving waters.

VWQS § 1-03 is not required. For eleven days, it is expected that construction activities will result in unavoidable non-compliance with the VWQS turbidity and aquatic habitat standards; nevertheless, the impacts on water quality will be de minimis and temporary given the particular safeguards imposed by the Secretary of ANR under VWQS § 2-03(B). Accordingly, while the Board could envision a set of facts where "existing uses" of Allen Brook might be placed at risk by construction-phase stormwater discharges, if not carefully controlled and monitored, the Board concludes that the safeguards in place for this Project under ANR Individual Discharge Permit No. CP102 are adequate.

5. The Project Stormwater Discharges Comply with the Lake Champlain TMDL

Lake Champlain is impaired for phosphorus and is the subject of an EPA-approved TMDL developed by ANR to reduce the Lake's phosphorus levels and to bring it into compliance with the VWQS. The CCCH will not discharge directly into Lake Champlain. Discharges from Segment A will enter Allen Brook, then Muddy Brook, then the Winooski River, and finally, some miles later, they will reach Lake Champlain. Although these discharges are indirect, VTrans has demonstrated that its stormwater management plan, and the specific measures it has incorporated to control and treat TSS, comply with the Lake Champlain TMDL for phosphorus reduction.

ANR's witness, Eric G. Smeltzer, the primary author of the Lake Champlain TMDL, testified that the implementation plan for new development, like the CCCH, only requires that the project comply with the BMPs contained in the 2002 Manual. Mr. Smeltzer testified that the TMDL does not require a specific load allocation for the operational-phase of such projects. Kim L. Greenwood, the author of the sections of the Lake Champlain TMDL dealing with erosion and sediment control at construction sites, testified that the CCCH complies with the implementation plan for construction sites. Accordingly the Board concludes that the Project stormwater discharges comply with the requirements of the Lake Champlain TMDL.

Rather than challenge whether the Project complies with the implementation plan for the Lake Champlain TMDL, the Appellants attempt to collaterally attack the requirements of the Lake Champlain TMDL's implementation plan. They argue that the CWA and federal implementing regulations require that the TMDL include effluent limits and pollutant load allocations for new discharges.

In approving the Lake Champlain TMDL, EPA agreed to ANR's approach for achieving reduction in phosphorus and compliance with the VWQS for point and nonpoint sources. Although the EPA approved the use of allocations for point sources such as wastewater treatment facilities, it did not require allocations for stormwater discharges from new developments such as the CCCH. Rather, the EPA approved the use of BMPs and the 2002 Manual.

The Board agrees that a clean-up plan should be specific to ensure reasonable attainment of the VWQS. However, EPA implicitly rejected the Appellants' interpretation of federal law when in 2002 it authorized the use of BMPs for new development to achieve phosphorus reduction goals. Therefore, based on the facts in this proceeding, the Board

concludes that the Project stormwater discharges, whether for the construction- or operational-phase, conform with the Lake Champlain TMDL.

V. ORDER

Based on the Findings of Fact and Conclusions of Law set forth above, the decision of the DEC, ANR, to issue five stormwater discharge permits and general permit authorizations is hereby affirmed. It is further ordered:

1. ANR Stormwater Discharge Permits #1-1556 and #1-1557, ANR Individual Discharge Permit No. CP102, and Stormwater General Permit, NOI Nos.1030 and 1031 remain in full force and effect.
2. Jurisdiction is returned to ANR.

Dated at Montpelier, Vermont, this 4th day of October, 2004.

Water Resources Board

_/s/David J. Blythe____

David J. Blythe, Acting Chair

Concurring:

Michael J. Hebert

John D. E. Roberts

Lawrence H. Bruce, dissenting.

After reading the prefiled testimony and pleadings, and after four days of hearings, I am not convinced that, as proposed, the Project will protect water quality. More than ever, I hear former member Potvin's constant admonition that our goal should be not to merely maintain the status quo, but to *improve* the quality of Vermont's waters. This application falls short of that goal; the applicant has failed to meet its burden in several respects. More distressing is the failure of ANR to conduct an adequate review of the application to assure that Project discharges will not only result in further degradation of impaired waters, but will not result in the further degradation of waters not presently listed on the § 303(d) List.

The parties seem to agree that at least a "Tier One" anti-degradation analysis is appropriate in this case. However, although VTrans has been planning the CCCH for approximately twenty years, neither this agency nor the ANR has conducted the necessary field and inventory work to assist the Secretary in making a determination of what constitute "existing uses" of the receiving waters. For example, how do we know what the "existing uses" are for the waters at issue in this proceeding? What are the reference conditions? What are the chemical, physical and biological characteristics of the receiving waters? The letter "edited" by VTrans for and submitted as a report of the Non-game and Natural Heritage Program, can hardly be considered as evidence of any probative value.

The sanding reduction proposal could be a positive step at reducing sediment loading to Allen Brook, but it seems clear that the proposed reductions are already in place and, if they were not, they'd be required to achieve compliance with federal MS4 regulations. But who knows how much sand has been and is being used along the segment of Route 2 proposed for reductions and also how much reduction in discharges of sediment is feasible? The "evidence" presented by the applicant was not credible, and was completely non-responsive to the Board's request.

The ten-acre phosphorus offset proposed for Allen Brook may or may not be essential, but the applicant is willing to do it. It may well help, and it can't hurt, reducing the level of phosphorous ultimately discharged into Lake Champlain. Why not do it?

I would return the application to ANR and require:

(1) an appropriate anti-degradation analysis, supported by field work; and

(2) a thorough analysis of existing and potential sedimentation concerns, including a review of existing winter sand use, and previously required and proposed sand reduction on roads in the Allen Brook watershed.

This is a large and significant project by any standard. It has been in the planning stages

for over twenty years, which is certainly more than enough time for the application and supporting information to be fully developed. Everyone, from the Governor on down, has identified improving the water quality of Lake Champlain and its tributaries as a crucial concern and goal. We should expect, and must require, an applicant (especially a state agency) to thoroughly and completely comply with all policies and standards contained in the VWQS.

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