STATE OF VERMONT

PUBLIC SERVICE BOARD

Lowell Mountain Wind Project Stormwater Discharge Permit #6216-INDC Stormwater Discharge Permit #6216-INDC.1 Stormwater Discharge Permit #6216-INDS Wetland Permit #2008-364 Water Quality Certification Appeal of Energize Vermont, Inc., et.al.	)	Docket No. 7628A-E

PROPOSED FINDINGS OF FACT AND CONCLUSIONS OF LAW OF THE VERMONT AGENCY OF NATURAL RESOURCES

The Vermont Agency of Natural Resources, by and through its attorney, files the following Proposed Findings of Fact and Conclusions of Law.

Procedural Background

On September 19, 2011, Energize Vermont, Inc., Don and Shirley Nelson, Jim Blair, Kevin McGrath, Robbin Clark, Nancy Warner, and Jack Brooks (collectively, the "Appellants") filed with the Vermont Public Service Board ("Board") appeals of five Vermont Agency of Natural Resources ("ANR") decisions related to the Lowell Mountain Wind Project.

On October 24, 2011, the Appellants filed a Preliminary Statement of Questions on Appeal ("Statement of Questions").

On November 14, 2011, Green Mountain Power Corporation ("GMP") filed a Motion to Strike and to Dismiss Appellants' Statement of Questions ("Motion to Strike").

On November 28, 2011, the Appellants filed a Response to GMP's Motion to Strike ("Appellants' Response") and a Motion to Amend Appellants' Statement of Questions ("Motion to Amend"), including a Revised Preliminary Statement of Questions on Appeal ("Revised

Statement").

In an Order issued January 6, 2012, the Board (1) granted in large part GMP's Motion to Strike, (2) granted the Appellants' Motion to Amend with the condition that the Appellants resubmit their Revised Statement in a manner clearly showing all of the amendments, and (3) revised the schedule for these proceedings.

On January 12, 2012, the Appellants filed an "Amended Preliminary Statement of Questions on Appeal" ("Amended Statement") marked to show the changes from the Preliminary Statement of Questions on Appeal that the Appellants had filed on October 24, 2011.

On January 18, 2012, GMP filed a Motion to Strike and to Dismiss Appellants' Amended Preliminary Statement of Questions on Appeal ("Second Motion to Strike"). Appellant's opposed the Motion.

On January 24, 2012, the Appellant's filed a Response and Objection to the Second Motion to Strike.

On February 3, 2012, the Board granted in part and denied in part GMP's motion.

On July 3, 2012, the Board granted Parties stipulated Motion to the Dismiss the appeals related to the wetlands permit, and the NPDES construction permit, Permit #6216.1-INDC, covering work on the transmission line, and other questions raised on appeal.

On July 6, 2012, Appellants filed a Final Statement of Question on Appeal, further limiting the scope of the issues raised on appeal to questions regarding the operational permit, Stormwater Permit #6216-INDC, the NPDES construction permit for the wind farm, Permit#6216-INDS, and the Water Quality Certification.

The Public Service Board conducted a site visit on July 10, 2012, and held hearings on the appeals on July 11-14, and July 16.

PROPOSED FINDINGS

Permits on Appeal

1. Permit 6216-INDC regulates the runoff of stormwater from the construction phase of the Wind Farm. This permit will terminate once earth disturbance associated with construction activities have been permanently stabilized. Nelson pf. Part 1, at 6-7.
2. Permit 6216-INDS, is an individual operational stormwater permit. It regulates the management of stormwater runoff from impervious surfaces on the Wind Farm. The permit coverage commences upon construction of impervious area on the site and continues after coverage under the construction permit and the project is operational. The permit term is five years. This permit, and subsequent renewals, is required for as long as impervious surfaces are present at the project site. Nelson pf. Part 1, at 7.
3. The Water Quality Certification (WQC) is required pursuant to Section 401 of the federal Clean Water Act (CWA), 33 U.S.C. § 1341, when a project requires a federal permit. The WQC provides a certification by the Agency that the project activity will be conducted in a manner which will not cause a violation of the Vermont Water Quality Standards. Nelson pf. Part 1, at 7; ANR Panel Testimony of 401, at 4-5.

Stormwater Management

4. The state stormwater permit program is a state law based program designed to manage and treat stormwater runoff from impervious surfaces (1 acre or more) such as roadways, driveways and rooftops, prior to discharging to waters of the state. Once the

impervious surface is constructed, stormwater runoff from that surface must be treated and managed in accordance with standards set forth in the Vermont Stormwater Management Manual. Burke pf. at 4.

5. The construction stormwater permit program is an EPA delegated (NPDES-National Pollutant Discharge Elimination System) program managed by Vermont DEC (a NPDES delegated state) for the discharge of stormwater runoff from construction and construction related activities that will have 1 acre or more of earth disturbance. The construction stormwater discharge permit is terminated upon completion of the project construction and final stabilization of disturbed areas. Burke pf. at 4.
6. Both the state stormwater permit program and the construction stormwater permit program are Best Management Practice (BMP) based programs to manage stormwater from precipitation driven discharges. Burke pf. at 3.
7. Stormwater discharges from construction activities can be characterized as temporary in nature, and will vary as construction and construction related activities proceed with clearing, grading and excavation. The short term nature of construction stormwater discharges and the variability based on construction make the approach to management and control a bit more dynamic. Burke pf. at 16.
8. Both the state stormwater permit program and the construction stormwater permit program are Best Management Practice (BMP) based programs to manage stormwater from precipitation driven discharges. Burke pf. at 4-5.
9. Kevin Burke testified on behalf of the State of Vermont Department of Environmental Conservation Stormwater Program. Mr. Burke has over seven years of experience with

the Vermont DEC Stormwater Management Program reviewing EPSC plans and post-construction or operational stormwater management plans. Mr. Burke provides technical review of stormwater discharge permit applications, including construction stormwater permitting (NPDES), operational state stormwater permitting, multi-sector (industrial) stormwater permitting (NPDES) and RDA (Residual Designated Authority under the Clean Water Act) NPDES permitting in Chittenden County stormwater-impaired watersheds. Mr. Burke also conducts compliance inspections and assessments for these permitting programs. Burke pf. at 3.

10. Mr. Burke has reviewed hundreds of stormwater permit applications including both construction stormwater discharge permit applications and state stormwater discharge permit applications for the Sheffield Wind Project, the Georgia Mountain Community Wind. Burke pf. at 3.

11. In reviewing the stormwater permit applications for this project, the stormwater program analyzed the erosion prevention and sediment control (EPSC) plan design and the post-construction stormwater management plan design in the context of how the overall project design, project layout, and associated Best Management Practices (BMPs) would minimize the risk of potential water resource impacts. The review was not limited to discrete stormwater discharge locations in post-development conditions, but encompassed a review of both the pre- and post-development conditions, including water resource crossings, potential groundwater flow, proposed impervious surfaces and the potential stormwater impacts to receiving waters from clearing activities and earth disturbance during construction. Burke pf. at 7-8.

12. The stormwater program further coordinated its review of the project in consideration of the 401 WQC with staff from other Agency Departments to ensure stormwater review and the final permitted plans were inclusive of other applicable programs. Panel pf. at 7-8.

NPDES Construction Permit

13. Construction activity involves earth disturbance, which means that soils are disturbed from their protected, vegetated condition and exposed to erosive effects of precipitation. Nelson pf. Part 1, at 10.

14. Runoff from construction sites occurs during precipitation events and during periods of snowmelt, causing what are known as precipitation-driven discharges. Precipitation-driven discharges are highly variable due to the weather events that cause the discharges (e.g., the length of the precipitation event and its intensity), the weather conditions in the period leading up to a precipitation event, and other environmental factors occurring in the watershed (e.g., the time of year, the conditions of the soil and vegetation). Nelson pf. Part 1, at 11.

15. Precipitation-driven discharges from construction sites can also be highly variable due to the status of the construction activities, including the area of disturbed earth at a given time, and ground slopes within work areas. Exposed soils are subject to erosion during precipitation events, and when erosion occurs, sediment is mobilized and can be transported to receiving waters. If not managed, these conditions can lead to the transport of sediment into receiving waters. Nelson pf. Part 1, at 10-11.

16. Stormwater discharges from construction activities can be characterized as temporary in nature, and will vary as construction and construction related activities proceed with clearing, grading and excavation. The short term nature of construction stormwater discharges and the variability based on construction make the approach to management and control more dynamic. Burke pf. at 16.

17. The Agency regulates stormwater discharges from construction sites under CGP 3-9020 or under an individual construction stormwater discharge permit. The CGP 3-9020 and an individual construction stormwater discharge permit require best management practices (BMPs) to be utilized during construction with the goal of preventing erosion and minimizing and controlling the discharge of sediment from areas of earth disturbance from construction and construction related activities. Burke pf. at 5-6.

18. BMPs are utilized because they are considered the best practices available to manage and control stormwater runoff. BMPs as part of a well-designed EPSC plan can provide a comprehensive strategy for minimizing erosion and sediment transport on a construction site. Burke pf. at 6; Nelson pf. Part 1, at 11.

19. The EPSC plan, though prescriptive in part, should allow for modifications during construction, and should identify specifications for the tools (BMPs) necessary to respond to the dynamic conditions on a construction project, especially related to weather and changing site conditions. The BMPs that are part of an EPSC plan are essentially the tools in the toolkit for appropriately preparing for, managing and responding to precipitation driven discharges. Burke pf. at 6.

20. BMPs utilized on a construction site include both structural practices and non-structural practices, that when put together, make up an erosion prevention and sediment control plan or EPSC plan. Burke pf. at 5.

21. A structural BMP is an installed device or constructed/installed measure that is utilized on site to either minimize/prevent erosion and/or control sediment during precipitation driven discharges from the construction site. Burke pf. at 5.

22. A non-structural BMP is a practice or way of managing construction that either minimizes/prevents erosion and/or controls sediment during stormwater discharges from the construction site. One example of a non-structural practice is prompt stabilization or otherwise limiting the amount of time earth disturbance is left open after initial disturbance prior to mulching/seeding/stabilizing. Other non-structural practices may include limiting total concurrent work areas, stabilization prior to precipitation events, stabilization prior to snow cover, routine inspections, routine maintenance, and stormwater discharge monitoring. Burke pf. at 5.

23. The EPSC plan typically includes other BMPs that deal with preventing non-stormwater discharges from construction activities and BMPs that control potential sediment from dewatering operations that may be occurring on the construction site during dry periods. Burke pf. at 5.

24. The stormwater discharge from construction activities of the wind farm component of the KCW project is covered by an individual discharge permit. Burke pf. at 10-11; GMP-JAN- A3.

25. A project authorized to discharge under an individual permit must develop a project specific EPSC plan. Projects authorized under the construction general permit are only subject to the terms and conditions of the established general permit. Projects authorized under an individual permit are subject to additional terms and conditions and project specific requirements as outlined in an individual permit drafted by the Agency. Burke pf. at 7.

26. To qualify for an individual permit, the EPSC plan and supporting application materials must specify both structural and non-structural Best Management Practices (BMPs) to be implemented during construction of the project designed to (1) prevent erosion (2) control sediment and (3) appropriately respond to dynamic weather conditions and construction site conditions for all aspects of project construction. Burke pf. at 8.

27. The EPSC plan for an individual permit is also developed in the context of the *Vermont Standards & Specifications for Erosion Prevention and Sediment Control*. An individual permit, and by reference the site specific authorized EPSC plan, may contain both structural and non-structural BMPs and permit requirements outside of the standard framework of the *Vermont Standards & Specifications for Erosion Prevention and Sediment Control* (VSS) and the general permit. Burke pf. at 8.

28. The authorized EPSC plan, supporting application materials, and Agency specified permit conditions thus provide for a comprehensive strategy to manage construction stormwater discharges so that they do not cause or contribute to a violation of the Vermont Water Quality Standards of receiving waters. Burke pf. at 8.

29. An individual permit can provide added protections for water quality. The stormwater (SW) program can provide project specific permit terms and conditions under an individual permit. Alternatively, a project permitted under a general permit would only be subject to the standard terms and conditions pre-established by the general permit and the VSS. Burke pf. at 8-9.

30. Under individual construction stormwater permits, additional project oversight is required during construction by a designated EPSC Specialist, a person that is knowledgeable and experienced in the principles and practices of erosion prevention and sediment control and EPSC plan implementation. Burke pf. at 8.

31. The EPSC Specialist requirement under an individual discharge permit is in addition to the standard general permit condition that requires a designated On-Site Plan Coordinator (OSPC) responsible for daily EPSC plan implementation oversight on the construction site. In addition to providing oversight of the On-Site Plan Coordinator for a project, the designated EPSC Specialist is also required to provide periodic detailed reports (e.g. bi-weekly) to the SW program on project progress, and overall compliance with the permit terms and conditions, and by reference the site specific EPSC plan. Burke pf. at 9.

32. The EPSC Specialist designated by the permittee must be pre-approved by the SW program prior to construction to ensure that the person designated has the appropriate experience and knowledge to fill the role. Burke pf. at 9.

33. The individual permit further requires a pre-construction conference that must be attended by the permittees, On-Site Plan Coordinator (OSPC), EPSC Specialist and a

representative of the SW program. The meeting serves as an opportunity for the SW program to meet in person with those responsible for implementing the authorized EPSC Plan, to establish additional contact information as necessary, to ensure that permit terms and conditions are clearly understood by all parties, and to discuss any additional issues, expectations, reporting requirements/formats, construction schedule, etc. Burke pf. at 9.

34. The individual permit provides the SW program with greater flexibility in the types of BMPs that may be incorporated into the EPSC plan, in addition to those standard practices specified in the VSS, that provide for additional stormwater management and erosion prevention and sediment control in light of specific and unique project and site characteristics. Burke pf. at 9.

35. The area of clearing associated with the construction of the Wind Farm component of the project is 135 acres. Nelson pf. Part 1, at 7.

36. The wind farm construction permit requires coordination with earth disturbance along the transmission line and establishes a concurrent earth disturbance schedule that incorporates and requires coordination between the two permits. The following summary provides the schedule of authorized concurrent earth disturbance for the wind farm and transmission line components of the project:

    a. A maximum total area of concurrent earth disturbance of 14 acres for the Lowell Mountain Wind Farm component while conducting earthwork associated with the Access Road only;

b. A maximum total area of concurrent earth disturbance of 7 acres for the Lowell Mountain Wind Farm component while conducting earthwork associated with the Crane Path only;

c. A maximum total area of concurrent earth disturbance of 10 acres for the Lowell Mountain Wind Farm component while conducting earthwork associated with the Access Road and the Crane Path at the same time;

d. A maximum total area of concurrent earth disturbance of 3 acres for the Transmission Line and Substation Upgrade component. Burke pf. at 14

37. The project must comply with a stabilization schedule. The wind farm component requires all areas of earth disturbance associated with the Access Road areas and Crane Path areas be stabilized within 12-days or 10-days (respectively) of the date of initial disturbance. After the initial period, all earth disturbances must be stabilized on a daily basis, except if work will continue in the area in the next 24 hours and there is no precipitation forecast. Stabilization is not required if the work is occurring in a self-contained excavation (e.g. foundation hole). Burke pf. at 14-15.

38. During winter periods, disturbed soil must be stabilized on a daily basis with the same exceptions noted above. The transmission line and substation upgrade component permit is conditioned with a 14-day stabilization schedule with otherwise the same conditions as the wind farm permit. Burke pf. at 14-15.

39. The construction on the wind farm will employ for work crews. The permit requires GMP to designate an on-site plan coordinator (OSPC) for each of the four earthwork

crews, and a fifth OPSC for the EPSC work crew. Each OSPC is responsible for the implementation of the EPSC plans. Nelson pf. Part 1, at 16.

40. The Vermont Standards and Specifications for Erosion Prevention and Sediment Control (VSS) do not provide a specified numeric value on maximum concurrent earth disturbance. The VSS recommends minimizing the area of earth disturbance exposed to erosive forces of precipitation and stormwater runoff. Minimizing earth disturbance minimizes the potential for erosion and sediment transport. Burke rebuttal pf. at 3.

41. The EPSC plan and permit conditions for this project have minimized earth disturbance and the potential for erosion and sediment transport and conform to the VSS. Burke pf. at 4.

42. The construction and stabilization sequence narrative is sufficient to adequately implement project phasing. This narrative, submitted with the application, (Exhibit GMP-JAN-A12) outlines the sequence of clearing and construction activities, and the schedule for EPSC implementation. This narrative is not a stand-alone document, but is designed to be used in conjunction with the EPSC plan, which provides additional details on the sequence of construction, the timing of EPSC measures, and design specifications. The narrative and EPSC Plan provide the detail necessary to enable the contractor to adequately implement project phasing. Burke rebuttal pf. at 6-7.

43. The EPSC plans contain sufficient detail on how and where to install EPSC measures and comply with the VSS. For this project, the EPSC plan provides an indexed list of EPSC Measures on every site plan sheet, similar to a map legend. Burke rebuttal pf. at 5.

44. Although the level of detail in any given EPSC plan may vary to some degree, it is common for designer's to rely upon typical symbols and typical locations for BMPs such as perimeter control drawn on the plan sheet to be representative of a feature in the plan. A "typical" symbol is an object or character drawn on the plan sheet to be representative of a feature in the plan. A list of symbols and what they represent are generally listed on an index sheet. Along with the symbol, the index provides reference to where in the EPSC plan set additional detail can be found on that EPSC Measure. Burke rebuttal pf. at 5.

45. The project as permitted will not result in a stormwater discharge that will cause or contribute to a violation of the water quality standards The EPSC plans and the associated BMPs included in the plans, in conjunction with the permit terms and conditions specified by the SW program in the permits, provide a comprehensive strategy for minimizing and/or preventing erosion, minimizing and/or preventing sediment transport, and will provide the necessary toolkit for responding to the dynamic conditions of a construction site.

Operational Permit

46. The state stormwater permit program is a state law based program designed to manage and treat stormwater runoff from impervious surfaces (1 acre or more) such as roadways, driveways and rooftops, prior to discharging to waters of the state. Burke pf. at 4.

47. Stormwater discharges from impervious surfaces differ from construction stormwater discharges in that they can be characterized as long-term or in most cases considered a

permanent stormwater discharge that must be managed and/or controlled in perpetuity. Burke pf. direct at 16.

48. The Agency of Natural Resources, Department of Environmental Conservation has developed regulations that apply to the management and treatment of operational stormwater runoff. As specified in Chapters 18 and 22 of the State of Vermont Environmental Protection Rules, a state stormwater discharge permit is required for the discharge of stormwater from new development equal to or greater than one acre. Burke pf. at 16; Nelson pf. Part 2, at 3.

49. Chapter 18 is applicable to regulated stormwater runoff in non-stormwater-impaired watersheds. There are no stormwater-impaired watersheds in the project area. As a result, Chapter 18, §18-306(a)(1) sets the required permitting standards for stormwater discharges from new development of greater than one acre that is associated with the impervious surfaces proposed as part of the wind farm component of the KCW project. The rule requires that the project obtain an individual permit or coverage under a general permit consistent with the treatment standards for new development in the Vermont Stormwater Management Manual (VSMM). Burke pf. at 16.

50. The VSMM sets forth the treatment and control requirements for regulated stormwater discharges in Vermont. The VSMM establishes five treatment standards for the control of water quality and quantity. Burke pf. at 16.

51. The treatment standards outlined in the VSMM include water quality, groundwater recharge, channel protection (1-year 24-hour event - stormwater runoff control), overbank flood protection (10-year 24-hour event – peak discharge/flood control) and

extreme flood protection (100-year 24-hour event – peak discharge/flood control). Burke pf. at 17; GMP-JAN-C2.

52. The VSMM design requirements are intended to manage a broad frequency of storms anticipated over the life of the stormwater management system. These include storms ranging from the smallest, most frequent storm events and are responsible for the majority of groundwater recharge, up to the larger, relatively infrequent storm events that can cause downstream channel instability, downstream flooding, or catastrophic damage. Burke pf. at 17.

53. To comply with the VSMM treatment standards, stormwater management design needs to consider both pre-development and post-development runoff conditions, taking into account on site soils, slopes, receiving waters, existing drainage, and local precipitation data for a range of storm events as defined in the VSMM. The VSMM is essentially a design toolbox that allows the designer to select and develop the most appropriate structural and non-structural stormwater management plan with the intent of meeting the applicable stormwater treatment standards. Burke pf. at 17.

54. The VSMM includes a list of acceptable stormwater treatment practices (STPs) for meeting the applicable treatment standards. STPs are BMPs for post-construction stormwater management. Burke pf. at 18.

55. The stormwater treatment field is rapidly evolving and new stormwater management technologies and approaches are constantly emerging. The VSMM anticipates and encourages the use of new stormwater treatment designs through the Alternative Stormwater Treatment Practices (STPs) Designs standard of Section 2.5. Designers

relying on alternative STPs other than those listed in the VSMM, must comply with Section 2.5.

56. Compliance with Section 2.5 requires that the Applicant designer "demonstrate to the Agency's satisfaction that the proposed alternative STPs will attain the applicable treatment performance standards for water quality, groundwater recharge, channel protection, overbank flood protection and extreme flood protection." GMP-JAN C-2, at 2-5.

57. Any proposal for use of an Alternative treatment system requires consideration of the design through the use of the individual permit application process. GMP-JAN C-2, at 2-5.

58. New-design alternative systems that are new for use in Vermont must also adhere to the requirements of Section 2.5.2 of the Vermont Stormwater Management Manual. GMP-JAN C-2, at 2-5.

59. Section 2.5.2 establishes the requirements for compliance with The New-Design Alternative Systems standard. The Vermont Stormwater Management Manual provides that an alternative design system must include a designer's certification of a reasonable level of surety of details that the proposed alternative STPs will attain the applicable treatment performance standards for water quality, groundwater recharge, channel protection, overbank flood protection, and extreme flood control. Burke pf. at 18; GMP-JAN-C2, at 2-6.

60. The Section 2.5.2 New-Design standard also requires a robust plan of study under field conditions of the new-design STP to ensure that the STP meets the treatment performance standards. JAN-C2, at 2-6.

61. Proposals for the use of alternative treatment systems require consideration of the design through the use of the individual permit application process. Burke pf. at 18.

62. Pursuant to VSMM Section 2.5.2, DEC has the authority to reject a proposed alternative design if an applicant cannot demonstrate to DEC's satisfaction that the STP will achieve the applicable treatment standards. Nelson rebuttal pf. at 17.

63. By allowing for the authorization of alternative designs under Section 2.5.2 of the VSMM, DEC provides an opportunity for applicants and designers to take advantage of the fact that the field of stormwater management is rapidly evolving and new and innovative technologies are continuously becoming available. Nelson rebuttal pf. at 17.

64. The goal of stormwater management is to get closer to the source of pollutants and capture and control them there, "[b]ecause the end-of-pipe solution which is the ponds, they don't always do a great job." Lake, Tr., July 16, 2012, at 61.

65. The VSMM provides an approach for designing and sizing stormwater treatment practices that will protect water quality. A project that applies stormwater treatment practices for stormwater collection and treatment that comply with the VSMM ensures that the stormwater runoff from impervious surface will be managed to assure compliance with the VWQS. Burke pf. at 18.

66. GMP has proposed and the operational stormwater permit provides a study plan that encompasses all of the elements required for a study plan under the new-design alternative section of the SWMM, Section 2.5.2. Nelson, pf. Part 2 at 11-12.

Level Spreaders

67. The alternative design component of this project includes level spreaders and associated vegetated buffers of 150 feet in length located below the lip of the level spreader structure. Burke rebuttal pf. at 12.

68. A level spreader is a constructed feature which is used to convert concentrated runoff to sheet flow and release it in a non-erosive manner across a slope. Vegetated buffers describe the land areas immediately downslope of the level spreader which provide for the "disconnection" of runoff within undisturbed natural vegetated terrain. Nelson, pf. Part 2 at 9.

69. The level spreaders and their associated vegetated buffers are designed to achieve "disconnection" of stormwater runoff prior to discharge to receiving waters. Disconnection refers to stormwater runoff directed over a pervious area, in this case a vegetated buffer in forested conditions, where it can infiltrate into the soil, temporarily pool in shallow forest floor undulations, and be taken up by forest vegetation or absorbed by forest cover, and flow over the vegetated buffer at a minimal flow dept and velocity for filtering. Burke rebuttal pf. at 12.

70. Maine provides the use of level spreaders with a maximum slope of 30%, except for water quality treatment standards where the maximum slope is 15%. Lake, Tr. at 25-26.

71. Fourteen of the slopes for the vegetated buffers connected to the level spreaders are 15% or less GMP-Jan-Reb-1

72. As part of its permit application, GMP provided ANR with the details regarding how the Level Spreaders and vegetated buffers will achieve the requisite Treatment Standards. See GMP-JAN-C10; GMP-JAN-C3; Nelson pf. Part 2 at 11.

73. GMP has also provided a study plan, GMP-JAN-C10, which contains all of the elements required under the New-Design Alternative standard. Burke rebuttal pf. at 13; Nelson pf. Part 2 at 11.

74. These processes will provide for reasonable surety that the design will meet the objectives of the Water Quality Treatment Standard and Groundwater Recharge Treatment Standard as set forth in the VSMM. Burke rebuttal pf. at 12-13.

75. In addition, the ongoing monitoring plan of study and subsequent certification and inspection requirements referenced in the individual stormwater discharge permit will ensure that the alternative STP design meets the treatment standards set forth in the VSMM and will ensure long-term performance in the field. Burke rebuttal pf. at 13; Nelson pf. Part 2, at 5.

76. GMP's use of level spreaders complies with the VSMM requirement for new-design alternative systems. Burke pf. rebuttal, at 12-13.

<u>CN values</u>

77. The hydrologic curve number (CN) is a factor that is used in predicting the amount of runoff from a specific area of land, considering the soil type and land use conditions. In general, when surfaces are assigned a higher CN that reflects the fact that more water is

expected to run off the surface; with little water being absorbed into the underlying soil. For a comparatively lower curve number, less water will run off the surface, and more will be absorbed. Nelson rebuttal pf. at 3; Nelson pf. at 8-9.

78. The surface runoff from different types of land cover varies along a continuum from more impervious surfaces to more permeable surfaces and there is no specific CN value that is generally accepted as the cut-off point between "impervious" and "pervious" surfaces. Nelson rebuttal pf. at 32.

79. Runoff curve numbers (CNs) for the project were determined based on guidance provided by NRCS (formerly SCS) Technical Release-55 (TR-55). For those project areas that corresponded directly with a particular NRCS cover type and hydrologic condition (e.g., woods in good condition on HSG C), the associated CN value was used. GMP-JAN-Reb-3; Nelson rebuttal pf. at 32.

80. Project areas that did not correspond directly with a particular NRCS cover type and hydrologic condition (e.g., pervious shot rock roadways and turbine pads), were treated as non-standard cover type areas, and conservative CN values were developed based on professional judgment in consultation with DEC and were confirmed based on the direction provided by HydroCAD for establishing CN values for non-standard, "special" conditions. See Exh. GMP-JAN-Reb-4; Nelson rebuttal pf. at 32.

81. GMP designers have assigned different curve numbers for the different surfaces on the project site. For the access road below the substation (below station A80+50), the curve number assigned to the road surface is 98, which represents a high curve number based

on the type of gravel being used and anticipating that the access road to the substation will continue to be traveled after construction. Nelson Tr. at 45-46.

82. Continuing along the access road, the area above the substation and continuing onto the crane path, the road was modeled as having a small degree of permeability, corresponding to a runoff curve number of 89 to 91 depending upon the underlying soil type. Nelson Tr. 7/12/12, at 46; GMP-JAN-Reb-6.

83. GMP consultants conducted on-site testing of the road surface materials to determine the void ratio of the materials in order to calculate a runoff curve number for the actual material installed at the Kingdom Community Wind access road. The test results yielded a curve number of 77.5 well below the curve number used in the modeling for the Kingdom Community Wind project for the access road and crane path. GMP-JAN-Reb-6.

84. GMP would be willing to accept a condition in the permit to conduct void space testing on the upper access road and crane path following completion of construction. The purpose of the testing would be to verify that the road surfaces were constructed in a manner that was consistent with the design specifications. Nelson, Tr. 7/12/12, at 113-114.

85. The certification would occur at a time after completion of construction and heavy traffic has ceased on the project site. Nelson, Tr. 7/12/12, at 113-114.

86. The turbine pads do not meet the definition of an impervious surface that would subject them to the jurisdiction of the operational stormwater permit. Burke Tr. at 126; Nelson rebuttal pf. at 33.

87. Although not jurisdictional, the turbine pads were modeled as surfaces that contribute to drainage in the receiving waters and therefore must be modeled appropriately in the operational stormwater models. The CN values chosen to model the turbine pads were based on the construction specifications of the turbine pads and experience with similar surfaces in Vermont. Nelson rebuttal pf. at 33.

88. The chosen CN values reflect the porosity of the materials used in construction and the provision in the construction detail for the turbine pads that require post-construction testing to ensure that the areas perform as pervious, not impervious surfaces. Nelson rebuttal pf. at 33.

89. If the curve numbers are inaccurate, it would result in a different peak flow rate and would result in more water entering the basins than had been modeled.

90. The use of a lower curve number will not result in a catastrophic failure of the stormwater treatment practices that will result in water quality issues. Burke Tr. at 160-61.

91. The CN values utilized by the designers in post-construction hydrologic modeling for the coarse surfaces are appropriate for characterizing anticipated stormwater runoff and will be reflective of the stormwater runoff from the project. Burke rebuttal pf. at 11.

92. The curve numbers used in the KCW project are similar to those used for the surfaces on the Sheffield wind site. Nelson rebuttal pf. at 41.

93. There has been no evidence of excessive or unexpectedly high runoff from any of the surfaces on the Sheffield site. Nelson rebuttal pf. at 41.

94. The detention basins on the Sheffield wind site are oversized and are receiving less water than they were designed to hold. Burke Tr. at 168.

95. The basins on the Kingdom Community Wind site are receiving less water than they were designed to hold. Burke Tr. 159.

96. After large rain events, the level lip spreaders on the Kingdom Community wind site were either not discharging any flow over the level lip or were discharging minimal flows onto the vegetated buffers. Burke Tr. at 159, 166.

97. The proposal to construct a more porous surface also meets the overall strategy of the VSMM to reduce/minimize impervious cover. By proposing a more pervious surface in these areas, the design reduces the need for larger structural treatment practices, thereby reducing the amount of additional clearing on the project site, and ultimately provides the opportunity for retention and/or detention of stormwater within the matrix of the surface proposed. Burke rebuttal pf. at 11.

Channel protection

98. The Channel Protection Treatment Standard is one of the treatment standards established by the VSMM. The goal of the Channel Protection Treatment Standard is to protect stream channels from degradation. This is typically accomplished by capturing stormwater runoff from the 1-year 24-hour storm event (i.e. channel protection volume – CPv) and for cold water fish habitat providing hours of extended detention. However, under the standard established in the VSMM, site designers only need to provide the

detention time provided by the one-inch minimum sized orifice. Some drainage areas on a project may in fact provide less than 12-hours extended detention, if the outlet structure design has been reduced to the one-inch orifice. Burke rebuttal pf. at 11.

99. For projects that have disconnected a majority of impervious surfaces, the VSMM provides for an alternative design standard for channel protection. Burke pf. rebuttal at 10; Burke Tr. at 137.

100. To meet the alternative design standard a designer must ensure the post development peak discharge from the disconnected portion of the site is no greater than the peak discharge from the same portion of the site as modeled as if 12 hour detention were provided. Burke Tr. at 144; Burke rebuttal pf. at 10; GMP-JAN-C2.

101. The project proposes to disconnect the majority of the impervious surfaces in a similar way to the disconnection that appears in the credits of Section 3. Burke Tr. at 111. The level spreaders and vegetated buffers on the project are disconnected from the impervious surfaces. Burke Tr. at 110.

102. The language of the alternative design standard was changed to encourage disconnection. The Agency and Stormwater program realized that the language was discouraging disconnection because it required designers to recollect the dispersion of stormwater runoff, then detain it, then release it in a less environmentally beneficial manner. Burke Tr. at 111.

103. Compliance with the Channel Protection Treatment Standard is evaluated at a point along the receiving water(s). In selecting this compliance evaluation point the designer may consider the amount of contributing impervious area to the receiving

water(s) and/or the pre-routed post-development peak discharge from the site to the receiving water. For this project, the alternative design standard for Channel Protection was evaluated at a downstream confluence. Burke rebuttal pf. at 10.

104. It conflicts with the purpose of the manual and does not make sense to require that designers recollect discharges from small drainage areas into large basins. Burke Tr. at 135-136.

105. The alternative design standard provides an opportunity to return the stormwater flow where it falls and maintaining the subwatersheds that exist before the project. By sending the stormwater to a vegetated area of disconnection provides treatment and infiltration. Burke Tr. at 143.

106. The alternative design standard allows designers to diffuse stormwater runoff into smaller drainage areas rather than recollecting the runoff into a large basin further down the hill. Burke Tr. at 144.

107. The Agency interprets the manual to ensure that it makes sense to the overall purpose and intent of the manual. Burke Tr. at 135-136.

Post construction certification

108. The operational permit includes a condition requiring the permittee to provide a written report that includes an inspection and designer's certification that the project has been built in compliance with the approved project design. Nelson Tr. at 201; GMP-JAN-21, at 7. The certification condition requires the designer to certify that the surfaces are operating according to the design which encompasses the selected curve number. Nelson Tr. at 201.

109. The operational permit imposes maintenance and inspection reporting requirements. Stormwater collection, treatment and control systems including the level spreaders and vegetated buffers shall be maintained in good operating condition at all times and shall be inspected annually and cleaned as necessary to maintain design specifications. Operational Permit #6216-INDC, at 7, Condition 12 (GMP-JAN-C21).

110. The operational phase stormwater permit requires GMP to monitor the performance of the level spreaders and vegetated buffers to ensure they are performing as designed and modeled. #6216-INDC, at 7, Condition 14 (GMP-JAN-C21); Nelson Tr. at 119.

111. If the monitoring required under condition 14 shows that the level spreaders are not performing as anticipated and not meeting the water quality volume treatment standard, GMP must modify the system to correct or address the deficiency to the satisfaction of the Agency. GMP-JAN-C21.

112. The terms and conditions of the permit along with the monitoring and study plan required under the new-design treatment practice minimizes the risk and controls for any risk that might be associated with using a new treatment practice. Burke Tr. at 153.

113. The level of oversight and monitoring that is required under the permit is substantial. Burke Tr. at 154.

114. The monitoring and oversight on the project will ensure that if the level spreaders are not performing as modeled and designed, any deficiency will be identified early, and GMP will be required to repair or modify as appropriate the stormwater management systems on site to continue to protect water quality. Burke Tr. at 154.

115. Replacing all or a critical number of level spreaders with detention basins or some other form of acceptable STP identified in Section II of the VSMM would not be a reasonable alternative to the level spreaders. Burke Tr. at 155.

116. Experience and observations at the Sheffield wind project site demonstrate that the use of detention basins and wet ponds in high elevation wind farm sites is not a reasonable alternative to collecting and treating stormwater. Burke Tr. at 155-56.

117. Level spreaders with vegetated buffers provide a better opportunity to maintain existing hydrology which is the goal of the stormwater management. Burke Tr. at 156.

Water Quality Certification

118. In support of its Water Quality Certification decision, the Agency presented the testimony of its panel of experts, Shannon, Morrison, Rich Langdon, Kevin Burke, and Mike Kline.

119. Mike Kline has served with the Vermont Agency of Natural Resources for twenty-three years. In his current role, he manages Programs that regulate water withdrawals, flow divisions, hydropower, stream alterations (i.e., activities that alter the course current or cross-section of perennial streams). Mr. Kline also manages the river corridor and floodplain management section. Panel at 2-3; ANR-Panel-1.

120. Rich Langdon has worked with the Agency for thirty-two years. He supervises a staff of four Aquatic Biologists and two Environmental Technicians. The primary responsibility of the section is to assess the ecological health of Vermont surface waters as it relates to the Vermont Water Quality Standards (VWQS). Mr. Langdon and his team design and carry out studies that determine environmental impacts to aquatic biota from permitted and unpermitted activities. The resultant assessments are used to determine compliance with

VWQS as well as various state permit conditions. Mr. Langdon also consults on the issuance of permits for direct and indirect discharges and Aquatic Nuisance Control Permits. Panel at 3; ANR-Panel-3.

121. After consideration of an application for a §401 water quality certification and public comments, the Secretary may issue a certification if the Secretary determines that there is reasonable assurance that the activity will be conducted in a manner which will not cause a violation of Vermont Water Quality Standards. The Secretary may include limitations or conditions in a certification as necessary to ensure compliance with applicable federal Clean Water Act requirements, Vermont's Water Quality Standards, and other appropriate requirements of state law. ANR Panel at 4-5.

122. The 401 WQC is one of a suite of permit reviews, including the Vermont Wetlands Permit, the state stormwater operational permit and the NPDES construction stormwater permit, that evaluate the project for potential water quality impacts from the Kingdom Community Wind project. ANR Panel at 5.

123. The project's potential water quality impacts fall into four broad categories: (1) construction-related stormwater discharge impacts; (2) operational stormwater discharge impacts; (3) wetlands impacts; and (4) stream impacts (associated with culverts and crossings). ANR Panel at 5.

124. Impacts to Class III wetlands and impacts associated with stream crossings are the only project-related aquatic impacts that were not specifically addressed by separate ANR/ DEC permits. Impacts to those resources were evaluated by USACE during the federal 404 permitting process, and have been considered by the Agency during its review of the project application for a §401 Water Quality Certification. Panel pf. at 5.

125. In review of the project's stream crossings and buffer impacts on perennial streams, the streams should not experience erosion beyond that associated with natural conditions. The standards being met for perennial stream crossings give reasonable assurance that they will not create stream instability. Outside of the immediate stream crossing area, vegetated buffers are being maintained on perennial streams. Panel pf. at 13.

126. The Agency conducted an anti-degradation review of the project. The anti-degradation policy in the Vermont Water Quality Standards (VWQS) (section 1-03 of the VWQS) exists to ensure the maintenance and protection of water quality, and existing and designated uses. There are several tiers of anti-degradation review. Tier 1 anti-degradation review protects existing uses of waters. Under Tier 1, the level of water quality necessary to maintain and protect all existing uses as well as applicable water quality criteria shall be maintained. Tier II review protects and maintains water quality in high quality waters. Tier III review protects Outstanding Resource Waters (ORW).

127. In addition to the anti-degradation policy of the VWQS, the Agency has adopted an Interim Anti-Degradation Implementation Procedure (Procedure). Pursuant to Tier 2 of the anti-degradation policy, a limited reduction in existing quality of high quality waters may only be allowed when the limited reduction satisfies a socioeconomic justification (SEJ) analysis set forth in the policy. Under Tier 1, the anti-degradation policy does not allow an elimination of existing uses. The anti-degradation policy allows only a temporary reduction in the quality of an Outstanding Receiving Water. The receiving waters for the KCW project are Class A and B waters. None of the receiving waters are an Outstanding Resource Water (ORW). Therefore, the Agency's review of

impacts from this project consisted of a Tier 1 and Tier 2 anti-degradation review. Panel pf. at 16.

128. The Agency evaluated the expected biological, physical, and chemical condition of streams within, and immediately downstream, from the project area. Panel pf. at 14.

129. The biological criteria of the Vermont Water Quality Standards, unlike the water chemistry criteria of the VWQS, result from the direct measure of an existing use. Aquatic biota is an existing use. The VWQS were designed to maintain and protect existing uses. If an existing use is being maintained, the water quality necessary to sustain that existing use is also being maintained. Panel pf. at 14

130. The chemical and other physical criteria in the VWQS serve as surrogates for the aquatic health of streams. Measuring aquatic biota provides a direct measure of the aquatic health of a stream. Biological communities reflect the overall ecological integrity (i.e. chemical, physical and biological integrity) of a stream. Biological communities integrate the effects of environmental stressors, thereby providing a consistent ecological measure of fluctuating environmental conditions. An evaluation of aquatic biota then, represents the product or aggregate of specific ambient physical and chemical parameters. Panel pf. at 14.

131. The project will not result in a degradation of the aquatic biota of the receiving streams. The required stormwater controls and measures to address potential impacts to wetlands and streams in place will result in no change in physical and water quality conditions that would result in habitat degradation and therefore there will be no reduction in the overall biological integrity of perennial streams in or downstream from the project area. Panel pf. at 16.

132. The protection afforded the aquatic biota will also conform to the anti-degradation policy and procedures for the maintenance of "high quality waters". Panel pf. at 19.

133. Based on available baseline data, taking into account the conditions imposed in the stormwater discharge and wetlands permits, and based on the considerations outlined in the Interim Procedure, the Agency has concluded that the project will protect existing high-quality waters, and will maintain and protect all existing and designated uses. Panel at 19.

134. The Agency has determined that there is reasonable assurance that the construction and operation of the Kingdom Community Wind Project as proposed and under the conditions imposed by the Agency will not cause a violation of the Vermont Water Quality Standards. Panel pf. at 19; GMP-JAN-E7.

135. The Agency has imposed a robust monitoring plan as a condition of the WQC. The objective of the monitoring plan is to provide ANR with key water quality data in order to evaluate the status of surface waters associated with the Project, with respect to the VWQS specific criteria. GMP-JAN-E6; GMP-JAN-E13; Nelson pf. Part 4, at 18-19.

136. As part of its obligation under the 401 WQC GMP has conducted chemical, physical, and biological monitoring of the receiving waters associated with the Project. The monitoring GMP has conducted on the project site demonstrates that water quality on and around the site has not been negatively impacted by project construction activities. Nelson rebuttal pf. at 54.

CONCLUSIONS OF LAW

GMP and ANR have demonstrated that the terms and conditions of the stormwater operational and construction permits issued for the project are sufficiently robust and stringent to ensure protection of the quality of the receiving waters. The project complies with the Vermont Standards and Specifications for Erosion Prevention and Sediment Control and the Vermont Stormwater Management Manual. In reviewing the issues on appeal, therefore, the Public Service Board should apply the presumption that the project will protect water quality. Because Appellants have failed to rebut this presumption, the Board should affirm the permits. Assuming arguendo, the Board finds that the presumption has been rebutted, the volumes of prefiled testimony and exhibits by GMP and ANR's experts qualified and experienced in the area of stormwater and Vermont stormwater regulations demonstrate that the proposed project with the controls and conditions required under the permits will protect water quality.

The scope of the issues on appeal is limited to those issues remaining in Appellants' statement of questions. As the Board properly held in ruling on GMP's motion for summary judgment, the scope of the appeal is not an analysis and review of every issue under consideration by the Agency in reaching its permit decision. Rather, the scope of the appeal is limited to the issues that have been appealed.[1] Accordingly, the scope of the appeal, and the scope of the jurisdiction of the Board in conducting its de novo review, is limited to the issues remaining after the stipulation and the rulings of the Board.

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[1] Decision and Order, January 6, 2012 at 8. the runoff of stormwater is different from the discharge of sanitary and industrial wastes because of the influence of natural events of stormwater runoff, the variations in characteristics of those runoffs, and the increased stream flows and natural degradation of the receiving water quality at the time of discharge

Stormwater Management

In Vermont, stormwater discharges are regulated under two separate but related permit programs. The first regulates discharges from impervious surfaces through the operational permit program. Under the second, Vermont regulates disturbed surfaces during construction activities under the State's delegated NPDES authority.

Operational Permit

The management of stormwater in Vermont is governed by the Vermont stormwater statute, 10 V.S.A. § 1264. The statute recognizes that "the runoff of stormwater is different from the discharge of sanitary and industrial wastes because of the influence of natural events of stormwater runoff, the variations in characteristics of those runoffs, and the increased stream flows and natural degradation of the receiving water quality at the time of discharge."[2] To control and treat for stormwater runoff, the statute requires the use of BMP based stormwater treatment practices that comply with the Vermont Stormwater Management Manual[3]. The Vermont Stormwater Management Manual has been developed and drafted by the Vermont Agency of Natural Resources.[4] In any appeal of an operational stormwater permit, a project that complies with the Vermont Stormwater Management Manual 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. [5]

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[2] 10 V.S.A. §1264(b).
[3] 10 V.S.A. 1264(e)(1).
[4] 10V.S.A. § 1264 (a)(1)
[5] 10 V.S.A. § 1264(h).

The project complies with the Vermont Standards and Specifications and on appeal should be afforded the benefit of the presumption that the project complies with the Vermont Water Quality Standards. Appellants have failed to present site-specific data or analysis to demonstrate where and how the permits and their associated conditions are not adequate to protect water quality in the receiving waters. Instead, Appellants have raised general questions about modeling inputs and the decision to approve the level spreader as a new-design alternative system. Appellants have failed to demonstrate how these modeling decisions will lead to discharges that will violate the Vermont Water Quality Standards.

Level Spreaders

Appellants challenge the decision to approve level spreaders as a New-Design Alternative System under Section 2.5 of the Manual. The stormwater treatment field is rapidly evolving and new stormwater management technologies and approaches continue to emerge.[6] The VSMM establishes the standard for approval of a new stormwater treatment practice that has not been specifically listed in Tables 2.1 and 2.2 of the VSMM. The VSMM anticipates and encourages the use of new stormwater treatment designs through the Alternative Stormwater Treatment Practices (STPs) Designs standard of Section 2.5. Designers relying on alternative STPs must comply with Section 2.5.

Compliance with Section 2.5 requires that the Applicant designer "demonstrate to the Agency's satisfaction that the proposed alternative STPs will attain the applicable treatment performance standards for water quality, groundwater recharge, channel protection, overbank flood protection and extreme flood protection." GMP-JAN C-2, at 2-5. Any proposal for use of

[6] GMP-JAN-C2, at 2-5.

an Alternative treatment system must also undergo review through the individual permit application process. GMP-JAN C-2, at 2-5.

New-design alternative systems that are new for use in Vermont must also adhere to the requirements of Section 2.5.2 of the Vermont Stormwater Management Manual. GMP-JAN C-2, at 2-5. A project that implements level spreaders can comply with the VSMM through the New-Design Alternative Systems standard. The requirements for compliance with the New-Design Alternative Systems standard includes compliance with all five treatment standards and that the practice will achieve long-term performance in the field.[7] To satisfy the New-design alternative system, the Applicant designer must "demonstrate to the Agency's satisfaction that the proposed alternative STPs will attain the applicable treatment performance standards for water quality, groundwater recharge, channel protection, overbank flood protection and extreme flood protection." The project must provide reasonable surety that the use of the alternative STP will achieve the requisite performance standards. A plan of study must also be provided will result in the project.

The GMP designed level spreaders satisfy the New-design alternative standard of the VSMM and as the Project should be afforded the benefit of the presumption of compliance. GMP provided ANR and the Board with sufficient detail to demonstrate that the level spreaders will attain the applicable performance standards. The testimony and exhibits demonstrate that level spreaders have been designed consistent with the technical criteria developed by ANR/DEC for level spreaders.[8] In addition, GMP has proposed a study plan to monitor the performance of

[7] *See* Section 2-6 of VSMM, GMP-JAN-C2.
[8] See Nelson Rebuttal pf. at 18. See GMP-JAN-C1, Section 2.3.7.

the level spreaders in the field. The study plan, which has been incorporated into the Permit, will ensure that the level spreaders meet the performance standards.

The VSMM provides certain standards and safeguards that an applicant must meet to implement a New-design alternative STP. GMP has met those standards and is implementing the safeguards. GMP's use of level spreaders for the Project complies with the VSMM.

Replacing all or a critical number of level spreaders with detention basins or some other form of acceptable STP identified in Section II of the VSMM would not be a reasonable alternative to the level spreaders. Experience and observations at the Sheffield wind project site demonstrate that the use of detention basins and wet ponds in high elevation wind farm sites is not a reasonable alternative to collecting and treating stormwater. Level spreaders with vegetated buffers provide a better opportunity to maintain existing hydrology which is the goal of the stormwater management.

The Vermont Stormwater Management Manual does not require adherence to the watershed hydrology protection credit for designs that rely on level spreader treatment practices. The watershed hydrology protection credit is voluntary. There is no requirement that a project that implements level spreaders must adhere to the requirements that would qualify a project for a waiver of one or more of the treatment standards. The incentive or reward for implementing the WHPC or some other credit is relief from adherence to a treatment standard. Indeed, the recent Amendment to the Vermont Stormwater Management Manual provides the following admonition:

> In an effort to apply a more comprehensive site-design approach to stormwater management, seven non-structural practices are set forth in this chapter which, if used properly, can result in the granting of a *stormwater credit to a site designer. A stormwater credit can reduce the required water quality, recharge, and channel*

protection volumes, thereby reducing the size and cost of structural STPs. **The use of the practices set forth in this section to obtain stormwater credits is strictly optional and voluntary.**

Page 39-40 (italics and emphasis in original).

Curve Numbers

GMP's choice of curve numbers, between 89-91, for the upper access road and the crane path is appropriate. Appellants claim the curve numbers are too low and this will result in more water reaching the basins and level spreaders. The curve numbers represent a conservative estimate of the porosity of the shot rock material to be used on these surfaces. GMP's testing of the actual emplaced materials on these surfaces demonstrates that the CN value for these materials is 77.5. The numbers used by GMP in its HydroCAD modeling, therefore, are conservative and would tend to over-predict runoff.

The curve numbers used on the KCW site are comparable to those used on the Sheffield wind project. The lower curve numbers on the Sheffield site have not resulted in undersized or overflowing detention basins. On the contrary, the detention basins in Sheffield appear to be oversized and the amount of runoff entering the basins is significantly less than that for which they were modeled. Similarly, on the KCW project site, the basins, although not yet certified as complete, appear to be receiving less water than modeled. Had the curve numbers been as inaccurate as Appellants feared, the basins would have been too small for the summer storm event.

Channel protection

The use of level spreaders complies with the Channel Protection Volume Standard. The VSMM provides an alternative method for calculating compliance with the Channel Protection Volume Standard. The GMP design complies with the alternative design standard for Channel Protection Volume.

The alternative design standard provides the following:

> For projects that have disconnected the majority of impervious surfaces per use of the credits in Section 3 such that routing to a detention facility is not achieved, the designer may use an alternative design standard. In these cases, the designer shall demonstrate that the postdeveloped peak discharge from the disconnected portion of the site for the one-year storm is no greater than the peak discharge from the same portion of the site as modeled as if 12-hour detention were provided.
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> VSMM 1-6, GMP-JAN-C2

The purpose of this section is to provide an alternative method for determining compliance with the channel protection standard for projects that implement disconnection. The first sentence allows an alternative method for calculating channel protection where the majority of impervious surfaces has been achieved through disconnection to avoid routing to a detention facility. GMP and ANR's experts, along with Mr. Lake testified regarding the benefits and advantages of disconnection over the end-of-pipe to a detention pond strategy. Disconnection allows stormwater to flow over a vegetative buffer and infiltrate into the soil. Disconnection eliminates the need to construct and maintain an artificial detention system to achieve channel protection.

Water quality is protected and the treatment standards are maintained through the alternative design standard because it requires that the post developed peak discharge from the disconnected portion of the site must be no greater than the peak discharge from the same portion of the site as if detention were provided.

Mr. Burke testified that the Agency interprets the alternative design standard as applying to designs that have disconnected the majority of impervious surfaces to avoid routing to a detention facility.

The Agency does not interpret the phrase "per use of the credits in Section 3" as requiring compliance with the voluntary management credits specifically listed in Section 3 of the Manual. Adherence to this interpretation would preclude the use of the alternative channel protection standard for projects that do not seek or otherwise use a credit that waives the requirement to adhere to the treatment standards. The only reasonable interpretation of the standard is the one applied by the Agency. It would be inconsistent to create a new standard for projects that disconnect and avoid recollection, if the only way they could apply the alternative CPV standard, is to apply a credit that might waive CPV.

The Public Service Board should adopt the Agency's interpretation of its manual and apply the alternative design standard for channel protection. The Vermont Stormwater Management Manual is a rule promulgated by the Vermont Agency of Natural Resources.[9] When construing the meaning of a regulation, the Board must endeavor to discern the intent of

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[9] See 10 V.S.A. §1264 (a)(1) ("2002 stormwater management manual" means the agency of natural resources' stormwater management manual dated April 2002, as amended from time to time by rule.).

the regulations' drafters, and must do so by viewing the regulation as a whole. [10] The Agency has the expertise and familiarity with the VSMM and the stormwater program to interpret and apply the manual in a way that accomplishes the goals of the stormwater statute and VWQS. The Board should defer to the decision and interpretation of ANR, the Agency the Legislature has expressly authorized to execute the VSMM. The Board should avoid an interpretation of the provision that would render the alternative design standard ineffective or superfluous.[11]

Application of the ANR interpretation is consistent with the principles and goals of the Vermont Stormwater Management Manual. Use of the alternative design standard allows GMP to implement disconnection methods that allow for natural infiltration that avoids end of pipe detention. The alternative design standard does not release GMP from any of the treatment standards required under the VSMM. In addition to the channel protection volume standard, GMP must adhere to the other treatment standards required under the manual.

The alternative design standard of requiring a designer to compare the diffuse disconnection treatment to a traditional model with basins provides assurance that the project will meet the CPV standard while meeting the goal of maintaining existing hydrology as much as possible. Appellants' interpretation of the alternative design standard would preclude the ability to use new and evolving methods of treatment, under the new-design standard, and apply disconnection under the alternative design standard. As Mr. Lake admitted, the field of stormwater management is evolving and moving away from end of pipe designs, that don't work. The goal of stormwater management is to address stormwater at its source and to allow it to

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[10] *Conservation Law Foundation v. Burke,* 162 Vt. 115, 121 (1993);
[11] *See, e.g., In re Miller*, 2009 VT 36, ¶ 14, 185 Vt. 550; *Murdoch v. Town of Shelburne*, 2007 VT 93, ¶ 5, 182 Vt. 587.

infiltrate naturally without the use of large artificial basins and structures. New designs that take advantage of the emerging science and advances in stormwater technology would never be allowed to use the disconnection or alternative treatment standard unless they voluntarily used the limited credits that would allow them to waive the treatment standards. Such an interpretation would render the alternative standard or the New-design standard (Section 2.5) or both superfluous and is inconsistent with the goals of the VSMM.

NPDES Construction permit

Vermont relies on the use of best management practices (BMPs) for the prevention of erosion and the control of sediment transport. The use of BMPs is consistent with the approach adopted by the Environmental Protection Agency in its oversight of NPDES permits in non-delegated states.[12] Vermont is the Agency charged with the implementation and development of

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[12] *In re Sheffield Wind Project*, Docket No.252-10-08 Vtec, slip op., at 10 (Vt. Envtl. Ct., Aug. 26, 2010) ("*Sheffield Wind*") (*citing In re: Stormwater NPDES Petition*, No. 14-1-07 Vtec, slip op. at 17 (Vt. Envtl. Ct. Aug.28, 2008) (Durkin, J.) (citing 40 C.F.R. § 122.44(k)(2)).

> Because stormwater discharges are so highly variable, the standard for their control is to apply a suite of best management practices or techniques (BMPs) tailored to the particular topography of the project and circumstances of the receiving waters, rather than to measure physical or chemical water quality during the storm event. [T]he highly variable conditions associated with stormwater discharges—including the intensity and duration of rainfall, the fluctuation of pollutants, and the varying property uses and space limitations within the sub-watersheds—make the application of a numeric [water quality-based effluent limitation] or [technology-based effluent limitation] standard complex and nearly unfeasible. Fortunately, EPA regulations, guidance and persuasive case law provide a simplified approach for regulating stormwater through NPDES permits: the use of "best management practices" ("BMPs").

the NPDES permit program in Vermont.[13] The Vermont Department of Environmental Conservation of the Vermont Agency of Natural Resources has developed the Vermont Standards and Specifications for Erosion Prevention and Sediment Control (Vermont Standards and Specifications) to assist designers in creating Erosion Prevention and Sediment Control (EPSC) Plans that protect water quality.[14] In addition, projects that apply for an individual construction permit require additional oversight and evaluation of the EPSC plans.

The Department of Environmental Conservation conducted a complete and thorough review of the substantial application materials submitted in support of the individual NPDES construction permit for the Kingdom Community Wind project, as well as public comments. During the application process, the Department through the stormwater program inspected the site, provided technical guidance and recommendations. The Department, relying on its expertise and in fulfilling its duty to ensure the protection of Vermont's water quality, concluded that the BMPs and associated EPSC plan and project layout, in conjunction with permit terms and conditions, would be sufficient to maintain the Vermont Water Quality Standards. The Board should defer to the expertise of the Agency and affirm the individual NPDES stormwater permit for the wind project.[15]

Appellants claim that the amount of concurrent earth disturbance is a departure from acceptable practices and is not sufficiently protective of water quality. The Vermont Standards

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[13] 10 V.S.A. 1258, 1263. *See also In re Entergy Nuclear Vermont Yankee Discharge Permit*, 2009 VT 124, ¶46, 187 Vt. 142 (recognizing that in a delegated role, ANR implements both state and federal water quality laws).
[14] GMP-JAN-A3, at 1-4.
[15] *See Gasoline Marketers of Vt., Inc. v. ANR*, 169 Vt. 504, 510 (1999); *Stormwater NPDES Permit Petition*, 2006 VT 91, § 3, n.2 (observing that Court may defer to ANR's decision on whether to grant or deny a [NPDES] permit).

and Specifications for Erosion Prevention and Sediment Control (VSS) do not provide a specified numeric value on maximum concurrent earth disturbance. The VSS recommends minimizing the area of earth disturbance exposed to erosive forces of precipitation and stormwater runoff. Minimizing earth disturbance minimizes the potential for erosion and sediment transport. The EPSC plan and permit conditions for this project have minimized earth disturbance and the potential for erosion and sediment transport and conform to the VSS.

Appellants also claim that there is insufficient information in the EPSC plans for a contractor to know how or where to install the EPSC measures. Appellants claim is misplaced. For this project, the EPSC plan provides an indexed list of EPSC Measures on every site plan sheet, similar to a map legend. Along with the symbol, the index provides reference to where in the EPSC plan set additional detail can be found on that EPSC Measure. The EPSC plan sheets clearly identifies when and how to install perimeter controls and other BMPS. In addition, there are several levels of oversight to ensure that the BMPs are properly installed and functioning, including the daily presence and oversight of the OSPCs, at least weekly (if not more frequent) inspections and oversight by the EPSC Specialist, and periodic inspections and input by DEC staff.

Appellants next suggest that the EPSC plan is deficient because it lacks a "phasing plan," and therefore, fails to conform to Section 3 of the VSS. The construction and stabilization sequence narrative is sufficient to adequately implement project phasing. This narrative, submitted with the application, outlines the sequence of clearing and construction activities, and the schedule for EPSC implementation. This narrative is not a stand-alone document, but is designed to be used in conjunction with the EPSC plan, which provides additional details on the

sequence of construction, the timing of EPSC measures, and design specifications. The narrative and EPSC Plan provide the detail necessary to enable the contractor to adequately implement project phasing.

Further support for a ruling that the individual NPDES construction permit for this project is sufficiently protective of water quality and complies with the Vermont Water Quality Standards can be found in the decisions of the Environmental Division of the Superior Court in *In re Sheffield Wind Project*, 252-10-08Vtec.[16] Many of the claims raised by Appellants in the present action mirror those raised and found unavailing in the *Sheffield* docket.

Appellants claim that the EPSC plans for the project and the use of typicals on the EPSC plan sheets fails to conform to the Standards and Specifications. Appellants in *Sheffield*, through their expert witness, Andres Torizzo, similarly asserted that the EPSC plan sheets were deficient because they relied on details. In *Sheffield*, the Environmental Court found that it was the customary practice to use typicals on the EPSC plan sheets. Because all the information necessary to construct or install the actual BMP at any given location can be found in the instructions or instruction notes for the detail, the Court found that the EPSC plan sheets and all its details comply with the Vermont Standards and Specifications.[17]

The Environmental Court in *Sheffield* also found unavailing the claim to limit the amount of concurrent earth disturbance. The Court reasoned that the permit requirements for prompt and

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[16] See 10 V.S.A. § 8506(e). In transferring jurisdiction of appeals of Agency permits to the Public Service Board, the Legislature provided that the "board shall give the same weight and consideration to prior decisions of the environmental division . . . as the board gives to its own decisions."

[17] *In re Sheffield Wind Project*, Docket No.252-10-08 Vtec, slip op., at 21 (Vt. Envtl. Ct., Aug. 26, 2010) ("*Sheffield Wind*").

immediate stabilization, the oversight provided by the OSPC, EPSC specialist, and ANR, were adequate to ensure compliance with the EPSC Plan, the Permit and the Vermont Water Quality Standards.[18]

The *Sheffield* Court also ruled that the presumption of compliance required by the Legislature in 10 V.S.A. 1264(g) (1) applied to the NPES construction permit.[19] The presumption of compliance mandates that "[i]n any permit under this chapter an individual permit meeting the requirements of [10 V.S.A. § 1264(f), providing for, among other things, best management practices or BMPs], 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 regulated stormwater runoff."[20] The Court specifically held that the presumption of compliance includes the anti-degradation policy of the Vermont Water Quality Standards.[21] Accordingly, under the Court's ruling and as directed by the Legislature, where a project complies with the BMPS the discharges will not result in a violation of the Vermont Water Quality Standards.

The *Sheffield* Court also ruled that Appellants "bear the burden of rebutting the presumption that compliance with the permit will ensure that all VWQS standards have been

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[18] *Id.* at 21-22.
[19] *In re Sheffield Wind Project*, Docket No.252-10-08 Vtec, slip op., at 10 (Vt. Envtl. Ct., Sept. 29, 2009) (Decision on Summary Judgment).
[20] *Id.* at 9-10, citing 10 V.S.A. § 1264 (g) (1).
[21] *Id.* at 11.

met, including the anti-degradation policy's requirements that existing uses and water quality of the receiving waters will be maintained and protected.[22]

As outlined above, Appellants have failed to rebut the presumption of compliance. There has been no presentation of reliable and credible evidence that the BMPs, EPSC Plan, inspection, monitoring, and oversight of the project will result in discharges from the project that will cause or contribute to a violation of the VWQS including the anti-degradation policy.

Although Appellants failed to demonstrate that the project would result in discharges that would violate the Vermont Water Quality Standards, ANR presented additional evidence by its 401 Panel that the project would not degrade the water quality of the receiving waters.

CONCLUSION

For the reasons stated above and in the testimony and exhibits provided by GMP and ANR, the Public Service Board should affirm the stormwater permits and water quality certification issued by the Vermont Agency of Natural Resources for the Kingdom Community Wind Project.

Respectfully submitted this 17th day of August, 2012, at Fayston, Vermont.

VERMONT AGENCY
OF NATURAL RESOURCES

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[22] *Id.* at 11, (citing, In *re CCCH* Nos. WQ-02-11 and WQ -03-05, -07 at 40.RE CCCH at 40, n.10 (Oct 4, 2004).

Judith L. Dillon