

**STATE OF VERMONT
PUBLIC UTILITY COMMISSION**

Petition of ER Dunsmore, LLC for a
Certificate of Public Good pursuant to 30
V.S.A. § 248, authorizing the installation
and operation of a 4.95 MW solar electric
generation facility off Dunsmore Road in
the Town of St. Albans, Vermont

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Case No. 25-____-PET

PREFILED DIRECT TESTIMONY OF ADAM CRARY

May 5, 2025

Summary: Mr. Crary’s testimony provides an assessment of the Project’s potential impacts to the following 30 V.S.A. § 248(b)(5) natural environment criteria, including: water pollution, 10 V.S.A. § 1424a(d) outstanding resource waters, headwaters, floodways, streams, shorelines, wetlands, rare and irreplaceable natural areas, and necessary wildlife habitat and endangered species.

Exhibit List

DRS-AC-1	Resume of Adam Crary
DRS-AC-2	Natural Resources Assessment Memorandum
DRS-AC-3	Distribution Line Upgrades Natural Resources Assessment Supplemental Memorandum

Introduction

Q1. Please state your name, current employer, business address, and position.

A1. My name is Adam Crary, employed at Vanasse Hangen Brustlin, Inc. (“VHB”), and my business address is 40 IDX Drive, Building 100, Suite 200, South Burlington, Vermont. I am currently the Renewable Energy Regulatory Team Leader for VHB in Vermont.

Q2. What is your education background, qualifications, and work experience?

A2. I have a B.S. in Natural Resources (Natural History and Ecology concentration) from the University of Maine. I have been a Senior Ecologist and then Director of Natural Sciences at VHB since 2009, where I am responsible in part for managing projects, technical staff, and technical work in conduct of various ecological surveys and reporting, typically under the requirements of federal, state, and local environmental regulatory programs. I also manage and coordinate the work of various other VHB services with a particular focus on energy-related projects. I have been a professional environmental consultant since 2001, specializing in natural resources identification and assessments. In addition to assessments conducted for numerous projects under 30 V.S.A. Section 248(b)(5) review, I have prepared and coordinated applications for the acquisition of numerous federal and state environmental impact permits, which involve application of expert ecological and natural resource assessment disciplines. A copy of my resume is attached as *Exhibit DRS-AC-1*.

1
2 **Q3. Have you testified previously before the Public Utility Commission?**

3 A3. Yes. I have testified (through prefiled testimony and/or live hearings) for numerous
4 projects located across Vermont, particularly those related to electric infrastructure
5 upgrades or replacement, or new energy generation, particularly renewables. I have also
6 provided technical support to expert witnesses providing testimony for other projects
7 under PUC review, including utility-scale projects, a sample of which are listed on my
8 resume.

9
10 **Q4. What is the purpose of your testimony?**

11 A4. My testimony supports ER Dunsmore, LLC's ("DRS") Petition for a Certificate of Public
12 Good ("CPG") pursuant to 30 V.S.A § 248 with respect to DRS's proposal to construct
13 and operate an approximately 4.95- megawatt ("MW") alternating-current ("AC") solar
14 electric generation facility to be installed on Single Axis Tracking racking systems within
15 an approximately 30-acre perimeter fence on a portion of a parcel off Dunsmore Road in
16 the town of St. Albans, Vermont (the "Project"). Specifically, I examine whether the
17 construction and operation of the Project complies with the following criteria:

- 18 • Outstanding Resource Waters (10 V.S.A. § 1424a(d));
- 19 • Water Pollution (10 V.S.A. § 6086(a)(1));
- 20 • Headwaters (10 V.S.A. § 6086(a)(1)(A));
- 21 • Floodways (10 V.S.A. § 6086(a)(1)(D));
- 22 • Streams (10 V.S.A. § 6086(a)(1)(E));

- 1 • Shorelines (10 V.S.A. § 6086 (a)(1)(F));
- 2 • Wetlands (10 V.S.A. § 6086(a)(1)(G));
- 3 • Rare and Irreplaceable Natural Areas (10 V.S.A. § 6086(a)(8)); and
- 4 • Necessary Wildlife Habitat and Endangered Species (10 V.S.A. § 6086 (a)(8)(A)).

5

6 Under my direction, VHB prepared a Natural Resource Assessment Memorandum

7 (“NR Memo”) provided as *Exhibit DRS-AC-2*, on which I rely when making my

8 assessments per these criteria. As described in the NR Memo, assessments were

9 conducted within an approximately 85-acre overall “Study Area,” which includes the

10 Project components (e.g., the array, access, perimeter fence, staging, and interconnection,

11 etc.). In making my assessments, Project support staff at VHB and I have relied upon the

12 Project plans developed by VHB using information provided by Petitioner and its

13 design/consultant team. In making my assessments, I also rely on Ms. Taegen Kopfler’s

14 Project description, which is also summarized in *Exhibit DRS-AC-2*. Project support

15 staff and I have also reviewed the site plans for the Project (*Exhibit DRS-TK-2*), which

16 incorporate VHB’s suggestions to avoid and minimize natural resource impacts as well as

17 best management practices and details. The results of VHB’s specific assessments of the

18 proposed solar project are included in detail in the above-referenced memorandum and

19 generally summarized below. VHB’s evaluation of potential natural resources impacts

20 from the Project’s required upgrades to the existing Green Mountain Power (“GMP”)

21 distribution system is also generally summarized below, following the evaluation of the

22 solar project.

SECTION 248 CRITERIA

Outstanding Resource Waters
(10 V.S.A. §1424a(d)(2) & (13))

Q5. Is this Project located on any segment of the waters of the state that have been designated as outstanding resource waters by the Water Resources Board, former Water Resources Panel, or the Agency of Natural Resources?

A5. No. As described in *Exhibit DRS-AC-2*, the Project is not located in the vicinity of waters that have been designated as outstanding resource waters.

Water Purity, the Natural Environment
and Public Health, Safety, and Water Pollution
(30 V.S.A. § 248(b)(5) & 10 V.S.A. § 6086(a)(1)-(8))

Q6. Will this Project result in undue water pollution?

A6. No, for the reasons enumerated under the specific water-related criteria discussed below, and as also discussed further in the prefiled testimony of Stephanie Wyman.

Headwaters
(10 V.S.A. § 6086(a)(1)(A))

Q7. Is the Project located in a Headwaters area, and if so, will it reduce the quality of ground or surface water?

A7. While the Project meets subcategory (ii) for a headwater under 10 V.S.A. § 6086(a)(1)(A) (drainage areas of 20 square miles or less), it is my opinion that the Project area should not be considered a headwaters area given the Project's position low in the landscape and proximity to Lake Champlain. Regardless, as described in Exhibit

1 DRS-AC-2, the Project will meet the requirements for a Project located within a
2 headwater area in that it will not adversely impact ground or surface water quality and
3 will meet applicable health and Vermont Department of Environmental Conservation
4 (“DEC”) regulations regarding reduction of the quality of the ground or surface waters
5 flowing through or upon the Project area.

7 **Floodways**

8 (10 V.S.A. § 6086(a)(1)(D) & 1424a(d)(3))

9 **Q8. Is the Project within a floodway, floodway fringe, or river corridor, and if so, will it**
10 **have an undue adverse effect on such areas, or endanger the health, safety, and**
11 **welfare of the public or riparian owners during flooding?**

12 A8. Yes, portions of the Project are located within a FEMA Flood Zone A [100-year
13 floodplain, also termed the floodway fringe or special flood hazard area (“SFHA”)] as
14 well as River Corridor associated with Jewett Brook. The Project array entirely avoids
15 floodway, floodway fringe, and river corridor areas, but the Project’s proposed access to
16 the array will require upgrades to an existing access road and crossing of Jewett Brook,
17 which also crosses through the FEMA mapped SFHA and ANR mapped River Corridor.
18 The Project’s necessary access road upgrades involve the replacement of two crushed
19 culverts under the existing farm road that crosses Jewett Brook with a bridged span.

20 VHB understands that the replacement bridge will meet the Exemption to the No
21 Adverse Impact Standard required under the Flood Hazard Area and River Corridor
22 (“FHARC”) Protection Procedure General Permit. The Project requires a FHARC
23 Registration due to the replacement of a bridge or culvert within a Flood Hazard Area,

1 which the Project has applied for and has received permit authorization from DEC for the
2 upgrades. As confirmed with this authorization of the Project plan, the Project will not
3 restrict or divert the flow of flood waters (floodway or floodway fringe), or endanger the
4 health, safety, and welfare of the public, or of riparian landowners during flooding or
5 from potential erosion.
6

7 **Streams**

8 (10 V.S.A. § 6086(a)(1)(E))

9 **Q9. Please describe any streams or waterways in the Project vicinity.**

10 A9. As described in *Exhibit DRS-AC-2*, VHB delineated a reach of one perennial stream
11 feature, Jewett Brook, in the Study Area.
12

13 **Q10. Will the Project maintain the natural condition of streams?**

14 A10. As noted above, the Project includes replacing the existing crushed culverts crossing
15 Jewett Brook with a new bridge. The associated work includes the removal of the
16 existing two crushed culverts and associated road embankment, widening of the existing
17 access road to a width of up to 16 feet, installation of a 45-foot modular steel bridge, and
18 precast concrete abutments. Keyways and side slopes will be stabilized with Stone Fill,
19 Type II. In-stream work will include placement of a layer of streambed material (E-
20 Stone, Type I or native streambed material if feasible) at least 1.5 feet in depth to restore
21 the streambed through the crossing. The design for the proposed bridge that meets
22 requirements in 10 V.S.A. § 1023(a), achieves the aquatic organism passage where the
23 current culverts do not, lowers existing flood elevations upstream of the existing

1 structure, and has been designed to not increase the risk of fluvial erosion to any
2 surrounding infrastructure. The Project will obtain a Stream Alteration General Permit
3 (“SAGP”) prior to construction, and has submitted the permit application to DEC. DEC
4 provided a response that the crossing as designed could be permitted and suggested that
5 the SAGP will be issued closer to the timeline of the Project’s CPG petition, as the
6 authorization to construct the Project is only valid for one year.

7 In addition to the SAGP from the DEC, a Section 404 Permit from the USACE
8 will be required prior to the Jewett Brook culvert replacement. It is anticipated that the
9 Section 404 regulated Project work will qualify under the USACE’s Vermont General
10 Permit requiring Pre-Construction Notification, and the written authorization request for
11 the General Permit will occur subsequent to the Project’s submittal of a CPG petition.

12
13 **Q11. Will the Project impact stream buffers?**

14 A11. In addition to the bridge replacement, access road expansion is necessary to widen the
15 road for construction vehicles within the 50-foot riparian buffer, including approximately
16 3,506 square feet of tree and brush clearing. There will also be permanent impacts within
17 the riparian buffer as a result of a gravel wetland outlet control structure and associated
18 tree clearing required as part of the control structure installation, which are depicted in
19 the Project’s site plans. Simple disconnection, an additional stormwater treatment
20 practice adjacent to the access road, is also proposed within the riparian buffer. This
21 practice will be constructed by densely planting native vegetation with a slope of no more

1 than eight percent. Grading has been designed to use existing topography as practicable
2 and minimize existing vegetation impact.

3
4 **Q12. Will the Project have an undue adverse impact on streams or stream buffers?**

5 A12. No. As described in *Exhibit DRS-AC-2*, all necessary permits will be obtained prior to
6 Project construction to maintain the natural channel condition as feasible and not
7 endanger the public or adjoining landowners. As the Project's impact to riparian buffers
8 is minor and has been minimized to only those necessary to access and interconnect the
9 Project, and the crossing upgrades will have a net benefit to downstream water quality in
10 Jewett Brook, the Project is maintaining the natural condition of the stream to the degree
11 feasible and will not endanger the health, safety, or welfare of the public or of adjoining
12 landowners. The Project's minor impacts to the riparian buffers will not result in a
13 reduction in existing buffer functions. For these reasons, VHB concludes that there will
14 be no undue adverse effect on streams or their 50-foot riparian buffer as a result of the
15 Project.

16
17 **Shorelines**
18 **(10 V.S.A. § 6086(a)(1)(F))**

19 **Q13. Does the Project involve the development of any shorelines?**

20 A13. No. As described in *Exhibit DRS-AC-2*, the Project is not located on or adjacent to any
21 shoreline areas, including lakes or ponds greater than 10 acres in size, and therefore there
22 will be no impacts to shorelines as defined under this criterion.

Wetlands

(10 V.S.A. § 6086(a)(1)(G))

Q14. Will the Project comply with the rules of the Secretary of the Agency of Natural Resources relating to significant wetlands?

A14. Yes. As addressed in *Exhibit DRS-AC-2*, VHB conducted wetland investigations within the Study Area and delineated several wetland complexes, which were reviewed and confirmed with ANR Wetland Program staff. With the exception of one wetland delineated around Jewett Brook, the wetlands are presumed to be Class III. The wetland delineated on both sides of Jewett Brook (2021-1) is a Categorical Class II wetland. The Project has been designed to first avoid and then minimize activity within wetlands and associated Class II wetland buffers to the extent practicable.

The array and its perimeter fence entirely avoid Class II wetlands and buffers and will not result in USACE-regulated impacts to Class III wetlands. However, a portion of the existing access road extends through a Class II wetland buffer. The road and Jewett Brook crossing improvements will therefore necessarily result in Class II wetland buffer impacts. Anticipated Class II wetland impacts will consist of tree clearing/grubbing and grading associated with widening the existing gravel access road, as necessary, to accommodate construction and delivery vehicles. Permanent impacts to Class II wetlands and buffers include replacing the existing culverts with a 45-foot modular steel bridge as well as achieving the necessary grade for a stormwater practice outfall structure that cannot be sited beyond the wetland buffer. In total, the unavoidable impacts to Class II wetland consist of approximately 2,364 square feet of permanent impact and approximately 2,018 square feet of temporary impact. Total unavoidable impacts to Class

1 II wetland buffer areas consist of up to 10,270 square feet permanent and 3,734 square
2 feet of temporary impacts are proposed. It is VHB's understanding that the Project will
3 require a Vermont Wetland Permit ("VWP"), and final impact numbers will be confirmed
4 in the permit application that will be prepared subsequent to this petition.

5 Although there are wetland and buffer impacts proposed, the design has avoided
6 and minimized impacts to the extent feasible: there would be a notably larger proposed
7 area of impact and greater areas of woody vegetation removal if the Project were to
8 propose creating a new access road and crossing, and the existing diminished function of
9 the access road and culverts would remain unaddressed. By using the existing road and
10 crossing and implementing the proposed upgrades, the Project will not only improve the
11 hydrologic conditions of the Jewett Brook riparian wetland system but will also improve
12 wildlife and aquatic habitat and minimize the limits of tree clearing and overall
13 disturbance by conducting work within the existing road corridor to the extent feasible.

14 In addition to a VWP, the Project will also require a Section 404 Vermont
15 General Permit ("GP") from the USACE. The Section 404 GP would include coverage
16 for not only impacts from dredge and fill within wetlands (less than approximately 1,000
17 square feet within Class III wetlands for installing underground conduit within the array)
18 but also within the channel of Jewett Brook as described under the Streams criterion
19 above.

20 All necessary wetland permits will be obtained before construction. As such, the
21 Project will comply with the Vermont Wetland Rules and will not result in undue adverse

1 impacts to wetlands, significant or otherwise. See *Exhibit DRS-AC-2* for additional
2 details and discussion regarding the delineation and VHB's analysis.

3
4 **Rare and Irreplaceable Natural Areas,**
5 **Necessary Wildlife Habitat, & Endangered Species**
6 **(10 V.S.A. § 6086(a)(8) & 1424a(d)(4)-(9))**

7 **Q15. Is the Project located in any significant natural communities or rare and**
8 **irreplaceable natural area ("RINA"), or will it have any impact on any such areas?**

9 A15. No. As described in *Exhibit DRS-AC-2*, there are no areas that could be considered
10 RINA within the Project Study Area.

11
12 **Q16. Will the Project destroy or significantly imperil any necessary wildlife habitat**
13 **("NWH")?**

14 A16. No. As described in *Exhibit DRS-AC-2*, the only potential NWH within the Study Area is
15 an approximately 2.5-acre portion of hayfield, which in its full extent beyond the Study
16 Area, could be considered potentially suitable habitat for grassland bird species. In order
17 to mitigate for the direct impacts to the potential grassland bird habitat as well as the
18 potential secondary impacts (per the Vermont Fish & Wildlife Grassland Bird Habitat
19 Guidance), the Project proposes to make annual mitigation payments to the Vermont
20 Audubon Bobolink Project or another ANR-approved mitigation fund throughout the
21 lifespan of the Project based on a set rate per acre of impact (direct and secondary) and at
22 a ratio of two-to-one for mitigation-to-impact. With this mitigation, the Project will offset
23 the impacts to the potential grassland bird habitat and will not destroy or significantly
24 imperil any NWH. *Exhibit DRS-AC-2* provides more detail behind the grassland habitat

determination and the proposed direct/indirect impacts and possible mitigation credits required.

Q17. Will the Project have an undue adverse effect on any endangered species?

A17. No. As described in *Exhibit DRS-AC-2*, based on database and field reviews, there are no rare, threatened, or endangered (“RTE”) plant species known to occur within the Project site. There is an EO record for an eastern meadowlark (*Sturnella magna*) occurrence less than approximately 1,000 feet north of the Project. The eastern meadowlark is a state listed-threatened bird species which utilizes suitable grassland habitats. As discussed above, the Project will mitigate impacts to the small portion of the Project area that could be considered grassland bird habitat. With this mitigation and the understanding the eastern meadowlark has not been documented within the Project site, it is VHB’s opinion that a Vermont Takings Permit is not necessary. Additionally, it is VHB’s understanding that the Project’s tree clearing is not enough to warrant additional study or conservation measures regarding protected bat species known from the vicinity. For these reasons, the Project will not have an undue adverse impact on any RTE species.

Distribution Line Upgrades

Q18. Have the potential natural resource impacts of the distribution line upgrades required for the Project been evaluated?

A18. Yes. VHB conducted a database and preliminary field review within an approximately 4.5 mile long and 150’-wide distribution line corridor study area along an existing GMP

1 roadside distribution line that requires upgrades to interconnect the Project (“Distribution
2 Upgrade Study Area”) and prepared a supplement to its NR Memo as ***Exhibit DRS-AC-***
3 **3**. Information on the location of Distribution Line Upgrades was provided by Petitioner
4 after review of the interconnection studies conducted for the Project (see ***Exhibit DRS-***
5 ***TK-5***). As described in this supplemental memo and indicated in the photos provided in
6 Attachment 2, the existing line passes through residential lawns, the edge of agricultural
7 fields, roadside conditions, and more naturalized areas that are still nonetheless exposed
8 to a certain amount of disturbance from their location within the road and overhead line
9 corridor. The primary distribution line improvement is the reconductoring of the existing
10 three-phase distribution line and associated voltage upgrades that are not ground
11 disturbing. In connection with this work, in-kind pole replacements and structure removal
12 will occur where necessary to meet the reconductoring needs. No excavation or grading
13 will be required with the exception of limited soil disturbance associated with individual
14 pole removal and installation.

15 The distribution line upgrade will not involve any of the assessed Section 248
16 natural resource criteria except for wetlands, streams, and floodways. Within the
17 Distribution Upgrade Study Area, wetland and surface water resources were
18 approximately field mapped using the methodology described in VHB’s supplemental
19 memo (Exhibit DRS-AC-3) to identify areas where line upgrade techniques would be
20 recommended to avoid and minimize impacts or adhere to applicable best management
21 practices (“BMPs”). These resources and associated buffers along with existing pole
22 locations are depicted on Attachment 1 to Exhibit DRS-AC-3. Other natural resources

1 reviewed by VHB were not found during desktop or field review within the Study Area
2 including: outstanding resource waters, shorelines, rare and irreplaceable natural areas,
3 endangered species, or necessary wildlife habitat.
4

5 **Q19. Will the distribution line upgrades result in any undue adverse impacts on natural**
6 **resources?**

7 A19. No. Based on the review of the distribution line upgrades, VHB has concluded that the
8 Project will not result in any undue adverse impacts to natural resources. The Project
9 does not propose any stream crossings, impacts within stream channels, new
10 infrastructure within River Corridors or Floodways or Flood Hazard Areas, and will
11 minimize all work within riparian buffers and other stream resource areas to the extent
12 feasible. With respect to wetlands and wetland buffers, once the upgrade design plan is
13 finalized by GMP and the identification of new and replacement poles is confirmed,
14 which does not happen until after the CPG is issued, Petitioner will include the
15 distribution line impacts to water resources in the Project permit authorizations to the
16 extent necessary. More specifically, the proposed distribution line upgrades alone are not
17 anticipated to trigger the need for permit authorization under the state VWR or a Pre-
18 Construction Notification under the federal USACE Section 404 Vermont General
19 Permit. However, if there are jurisdictional activities associated with the distribution line
20 upgrades, they would be reviewed and, if necessary, included in the Project's applications
21 for VWP and 404 authorizations as a single and complete project. No separate collateral

1 permit authorizations (for example stormwater) are otherwise anticipated to be required
2 prior to conducting the distribution line upgrade work described above.

3 As Petitioner will obtain permits as required for the proposed impacts to wetlands
4 or wetland buffers that are not “Allowed Uses” under the Vermont Wetland Rules, the
5 Project will not result in new natural resources impacts, and no other separate
6 environmental permits are necessary for Project interconnection upgrades beyond what
7 the Project is already required to obtain, the distribution line upgrades will not result in
8 any undue adverse impacts to the wetlands and surface waters within the study area.

9
10 **Q20. Does this conclude your testimony?**

11 **A20. Yes.**