

Exhibit CS-DB-4

*Interconnection Environmental
Assessment Report*

**Environmental Assessment for:
Interconnection Route
2.0 MW Solar Photovoltaic Generation Facility
Chelsea Solar Project
Bennington, Vermont**

*Prepared by:
Arrowwood Environmental, LLC*

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ARROWWOOD ENVIRONMENTAL

950 BERT WHITE ROAD
HUNTINGTON, VT 05462
(802) 434-7276 FAX: (802) 329-2253

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I. Summary Findings

Arrowwood Environmental, LLC (AE) conducted an environmental assessment for the interconnection route for the proposed Chelsea Solar Project (“Project”) during the spring and summer of 2015. AE concludes that the proposed route has been sited and designed to avoid undue adverse impacts to the following environmental resources: shorelines, floodways, outstanding resource waters, streams, wetlands, rare and irreplaceable natural areas, necessary wildlife habitat, and rare, threatened and endangered species.

In summary, there are no shorelines, outstanding resource waters, floodways, rare and irreplaceable natural areas, or necessary wildlife habitat along the proposed route. Thus, there will be no impacts on these resources.

AE identified, delineated and mapped wetland resources along the proposed interconnection route. For the purposes of this Project, it is assumed that wetland resources are Class 2 and provided a 50’ buffer. The Project will involve placement of three new utility poles within wetland buffer resources with minimal clearing. The Project will involve no direct wetland impacts.

AE identified and mapped stream resources along the proposed interconnection route. The route will result in minimal clearing of trees along Hewitt and Willow Roads. Poles are to be installed within the existing road fill slope resulting in no significant disturbance to stream riparian zones.

AE identified and mapped rare, threatened or endangered (RTE) plant species along the interconnection route. Of particular interest along this route was arrow-leaved American-aster (*Symphyotrichum urophyllum*) since it had been found in the Project area and appropriate habitat was present along the interconnection route.

To avoid impacts to RTE plant species during installation of the interconnection, AE flagged the location of the plant populations and was present during the stake-out of pole locations. AE further recommends site specific construction conditions along Willow Road between Poles 14 and 16 to avoid impacts to RTE plant species from tree clearing.

II. Introduction and Project Description

The focus of this report is the proposed interconnection route. This report outlines AE's findings as related to environmental criteria incorporated by the Public Utility Commission into the review of solar projects, including: shorelines, streams, floodways, outstanding resource waters, wetlands, rare and irreplaceable natural areas, necessary wildlife habitat, and rare, threatened and endangered species.

The environmental assessment involved both a remote review of available digital databases as well as field investigation in the Project site and vicinity. Field investigations were conducted in 2015. AE was present for the staking of pole locations in October 2015.



Figure 1: Resource Assessment Area Map

III. Site Characterization

The proposed interconnection route begins at the intersection of Hewitt Drive and East Road. Poles are proposed for location along Hewitt Dr. in a northwesterly direction to the intersection of Willow Road, at which point, poles continue west along Willow Rd. across its transition to a Class 4 highway and continuing to its terminus at the Chelsea Solar Project site.

IV. Criterion 1(D) Floodways

AE reviewed the FEMA DFIRM (Digital Flood Insurance Rate Map Database) for Bennington County, Vermont. The site of the proposed Project is not located within a 100-year flood hazard area (zone A). The proposed Project is not located within a floodway or a floodway fringe and will not restrict or divert the flow of floodwaters or significantly increase the peak discharge of a river or stream within or downstream from the area of development. The closest FEMA flood hazard zone and ANR river corridor is approximately 0.4 miles to the south of the Project and associated with a tributary to the Walloomsac River. The Project will have no impact on floodways or river corridors.

V. Criterion 1(E) Streams and Outstanding Resource Waters

The stream assessment involved both a remote review of the USGS topographic maps, the Vermont Hydrography Dataset (streams, rivers, waterbodies) and 2' contours derived from FEMA Bennington Lidar (2012) and a field investigation in May 2015. Top of bank of stream resources within the proposed route were surveyed on May 11, 2015. There are two small tributaries to the Walloomsac River within the proposed interconnection route, shown on the Resources Assessment Area Map above.

Pole #9, on Hewitt Drive, is located ~36' from the top-of-bank of an unnamed stream. The line spans between Pole 8 and Pole 10 appear to require some new clearing, which will be within 50' of the stream top-of-bank. There are also two existing poles at the intersection of Willow and Hewitt Roads which will be replaced as part of this Project. The two existing poles span the same small stream. There shall be no additional clearing associated with the pole replacement.

A second unnamed tributary crosses Willow Road ~1000' from the Willow and Hewitt Road intersection. This stream is culverted under Willow Road and then again under Route 279. Pole 18 will be located along Willow Road, within the existing fill slope of the road.

The proposed interconnection route will result in minimal clearing of trees along Hewitt and Willow Roads. Poles are to be installed within the existing road fill slope resulting in minimal

clearing in stream riparian zones. For these reasons, the Project will have no undue adverse impact on stream resources.

The Water Resources Panel has listed four waterways as Outstanding Resource Waters: Batten Kill River in towns of East Dorset and Arlington; Pike's Falls/Ball Mountain in the town of Jamaica; Poultney River in the towns of Poultney and Fair Haven; and Great Falls, Ompompanoosuc in the town of Thetford. There are no Outstanding Resource Waters in the Project Area and therefore, the Project will have no impact on Outstanding Resource Waters.

VI. Criterion 1(F) Shorelines

AE reviewed USGS topographic maps, the Vermont Hydrography Dataset (streams, rivers, and waterbodies), and digital orthophotography. The route of the proposed interconnection is not located near a shoreline of a river, pond or lake. The closest shoreline is that of the Walloomsac River, approximately 0.9 miles to the west of the proposed route. The proposed interconnection route will result in no impact to shorelines.

VII. Criterion 1(G) Wetlands

The wetland assessment involved both a remote review of available maps (including Vermont Significant Wetland Inventory Maps (VSWI 2010) and the NRCS Soil Survey) and a field assessment on May 11, 2015. Five wetlands were identified, delineated, and mapped along the proposed route. There are no vernal pools along the proposed route.

For the purposes of pole layout, each of the five wetlands is assumed to be Class 2 and has been provided a 50' buffer (as shown on the Resource Assessment Area Map above). The proposed placement results in three poles in areas of road shoulder that are classified as wetland buffer zones of three wetlands. The Vermont Wetland Rules (Section 6.22) allow for the installation of a new overhead utility line that only involves minimal tree clearing, with three poles or fewer in the wetland or buffer zone. The Project has been designed to avoid direct wetland impacts. The poles are to be installed within the existing road fill slope resulting in minimal disturbance to the

three wetland buffer areas. For these reasons, the Project will have no undue adverse impact on wetland resources.

VIII. Criterion 8 Rare or Irreplaceable Natural Areas

The Rare or Irreplaceable Natural Areas (RINA) assessment involved both a remote review of available digital maps for the Project area and a field assessment on May 11, 2015. AE reviewed digital orthophotography, the Bennington County Soil Survey, the 2011 Bedrock Geologic Map of Vermont and the Natural Heritage Inventory (NHI) Rare, Threatened and Endangered Species digital database. In reviewing the NHI digital database, there are no records or occurrences of significant natural communities in or near the interconnection route.

Pole placement for the proposed interconnection route will be approximately 10' from the travelled edge of Willow and Hewitt Roads. This area is characterized as mowed road shoulder and existing fill slope. No Rare or Irreplaceable Natural Areas are present within the proposed route and therefore, the Project will have no impact on Rare or Irreplaceable Natural Areas.

IX. Criterion 8(A) Wildlife Habitat and Rare, Threatened and Endangered Species

The wildlife habitat assessment involved both a remote review of available digital maps for the Project area and a field inventory component. A remote review of available digital databases was conducted to identify and map necessary wildlife habitat within the proposed interconnection route and the general vicinity of the project.

A. Necessary Wildlife Habitats

1. White-Tailed Deer Wintering Habitats

There are no mapped VT Fish and Wildlife Department white-tailed deer (*Odocoileus virginianus*) winter habitats (DWAs) in the area. The closest State mapped deer wintering area is approximately 2.8 miles to the northwest of the Project site. AE confirmed the lack of DWA resources along the interconnection route.

2. Black Bear Habitat

The nearest “productive” black bear habitat (*Ursus americanus*) mapped by the Vermont Fish and Wildlife Department is approximately 6,000’ to the east of the Project and separated from the Project by well-traveled paved roads. Pole placement for the proposed interconnection route will be approximately 10’ from the travelled edge of Willow and Hewitt Roads. This area is characterized as mowed road shoulder and existing fill slope which does not provide necessary wildlife habitat for the black bear.

B. Rare, Threatened and Endangered Species

The RTE species review involved a remote review of available digital maps for the Project area. AE reviewed digital orthophotography, the Bennington County Soil Survey, the 2011 Bedrock Geologic Map of Vermont and the Natural Heritage Inventory (NHI) Rare, Threatened and Endangered Species digital database.

The Northern Long-eared Bat (*Myotis septentrionalis*) became a federally listed endangered species in May of 2015. The State of Vermont has determined that project clearing constituting greater than 1% of the total forested area within a 1 square mile radius of a project triggers review for habitat loss of this endangered species. AE utilizes the most recent NAIP 2016 aerial photos (leaf-on) and runs a custom GIS based image classification for a 1-mile circle around the Project area. In this analysis, custom training samples are generated for different cover types and using an Interactive Supervised Classification routine, the computer classifies the imagery into forest cover, open land, developed land, and often some other categories to correctly isolate features such as water and shadows. This provides a custom landcover dataset for the 1-mile circle at the resolution of the NAIP imagery (0.6 meters). The proposed Project interconnection will result in minimal clearing of less than 1% of the available forestland within 1 square mile of the Project. According to VT Fish and Wildlife Department standards, the proposed clearing is minimal in nature and acoustic bat surveys and restrictions on time of year of tree cutting are not necessary.

The Project is not in an area known to provide summer roosting habitat for Indiana bat, no old or abandoned buildings potentially providing roosting habitat for little brown bat are proposed for demolition, and there are no known bat hibernacula or maternity roosts within 1 mile of the Project site.

On July 10, 2015, Arrowwood Environmental (AE) conducted an inventory for rare, threatened or endangered (RTE) plant species along the interconnection route for the Chelsea Solar Project. A complete list of species recorded during this inventory is presented below.

Of particular interest along this route was arrow-leaved American-aster (*Symphyotrichum urophyllum*) since it had been found in the Project area and appropriate habitat was present along the interconnection route. This species was located and mapped along the route in five separate locations as shown on the map above.

The data associated with the rare plant populations is presented in Table 1.

Table 1. Populations of *Symphyotrichum urophyllum* along proposed interconnection route.

Pop ID	Number of Plants	Notes
A	1	A single basal rosette in shaded roadside.
B	50	Approximately 50 plants along a disturbed roadside within 15' of road. With Chervil, honeysuckle and buckthorn. Includes basal rosettes and flowering culms.
C	25	Along field edge. Currently mowed, may be more plants away from the road.
D	1	Single plant in roadside, adjacent to proposed new pole.
E	15	Mowed road shoulder below guardrail. 10 basal rosettes and 5 plants with flowering culms.

A closely related, common species, heart-leaved American-Aster (*Symphyotrichum cordifolium*) was also found along the interconnection route. Though neither of these species was flowering during the time of the inventory, they could be confidently distinguished based on vegetative characteristics such as the shape of the leaf base, leaf dentation and nature of the petiole.

In order to avoid impacts to RTE plant species during installation of the interconnection, AE flagged the location of the plant populations and recommended being present during the stake-out

of pole locations. Mr. Bob Popp was contacted on July 21, 2015 and provided his concurrence with these measures on July 28, 2015.

On October 26, 2015, AE was present for the stake-out of proposed utility pole locations conducted by Ray Page from Vt. Survey Consultants (VSC) of Rutland, Vt. Pole locations were provided by Chelsea Solar, LLC and wooden stakes were driven at the pole and guy anchor locations by VSC. Pole locations were numbered 1-23 starting in the east and moving west as shown on the map above.

All pole locations as staked in the field on October 26, 2015 avoid impacts to RTE resources as intended. Pole #22, the second pole from the west end of the route is located 10' from a newly identified RTE population for which precise mapping was not previously available. AE placed a stake approximately 15' southeast of the proposed pole location and labeled it as P22-alternate. If possible, this pole should be shifted to the alternate location to ensure no impact to the RTE population.

A portion of the road shoulder along Willow Road between Poles 14 and 16 will require some clearing. Clearing in this location would occur at a previously identified RTE plant population. AE confirmed with Green Mountain Power that clearing in this location would cover a width approximately 25' on either side of the pole line, and would entail cutting the trees at ground surface with no earth disturbance. Since the RTE plant species present at the site grows in open conditions, no impact to the population is anticipated because of tree clearing alone. AE recommends the following steps to avoid adverse impacts to the RTE plant population present at the site:

- Conduct clearing after the first killing frost and prior to March 15
- Maintain native understory vegetation as possible
- Do not place wood chips or other fill within the RTE plant population boundary
- No earth disturbance within RTE population boundary

With these measures, it is our opinion that the Project interconnection will not have an undue adverse impact on RTE plant species.

X. References

1. Argentine, Cindy Corlett. Vermont Act 250 Handbook. Putney Press. 2008.
2. Natural Resources Board. Vermont Wetland Rules. Effective August 1, 2010.
3. Natural Resources Conservation Service. Soil Survey Maps. Bennington County
4. Ratcliffe, N.M., Stanley, R.S., Gale, M.H., Thompson, P.J., and Walsh, G.J., 2011, Bedrock geologic map of the Vermont: U. S. Geological Survey Scientific Investigations Map 3184, scale 1:100,000.

Plant Species List from October 2015 Survey

<i>Acer negundo</i>	<i>Equisetum arvense</i>
<i>Achillea millefolium</i>	<i>Equisetum variegatum</i>
<i>Alnus incana</i>	<i>Erigeron philadelphicus</i>
<i>Ambrosia artemisiifolia</i>	<i>Euphorbia cyparissias</i>
<i>Anemone virginiana</i>	<i>Euthamia graminifolia</i>
<i>Antennaria neglecta</i>	<i>Fragaria sp.</i>
<i>Anthoxanthum odoratum</i>	<i>Frangula alnus</i>
<i>Asclepias syriaca</i>	<i>Fraxinus americana</i>
<i>Athyrium filix-femina</i>	<i>Galium mollugo</i>
<i>Berberis vulgaris</i>	<i>Geum canadense</i>
<i>Betula alleghaniensis</i>	<i>Glechoma hederacea</i>
<i>Betula papyrifera</i>	<i>Hypericum punctatum</i>
<i>Betula populifolia</i>	<i>Juncus tenuis</i>
<i>Brassica rapa</i>	<i>Juniperus virginiana</i>
<i>Bromus inermis</i>	<i>Knautia arvensis</i>
<i>Calamagrostis canadensis</i>	<i>Lapsana communis</i>
<i>Calystegia fraterniflora</i>	<i>Larix laricina</i>
<i>Carex cf blanda</i>	<i>Linaria vulgaris</i>
<i>Carex rosea</i>	<i>Lonicera tatarica</i>
<i>Carya cordiformis</i>	<i>Lotus corniculatus</i>
<i>Celastrus orbiculatus</i>	<i>Lysimachia ciliata</i>
<i>Centaurea cf nigra</i>	<i>Malus pumila</i>
<i>Cichorium intybus</i>	<i>Medicago lupulina</i>
<i>Cornus racemosa</i>	<i>Melilotus albus</i>
<i>Cornus sericea</i>	<i>Mollugo verticillata</i>
<i>Dactylis glomerata</i>	<i>Oenothera biennis</i>
<i>Dasiphora floribunda</i>	<i>Onoclea sensibilis</i>
<i>Dianthus armeria</i>	<i>Origanum vulgare</i>
<i>Dichanthelium acuminatum</i>	<i>Oxalis stricta</i>
<i>Doellingeria umbellata</i>	<i>Parthenocissus quinquefolia</i>

Pastinaca sativa
Persicaria maculosa
Phalaris arundinacea
Phleum pratense
Pilosella caespitosa
Pinus strobus
Plantago lanceolata
Plantago major
Platanus occidentalis
Poa compressa
Poa pratensis
Populus balsamifera
Prunella vulgaris
Prunus serotina
Pycnanthemum tenuifolium
Quercus rubra
Ranunculus acris
Rhamnus cathartica
Ribes glandulosum
Rosa multiflora
Rubus idaeus
Rudbeckia hirta
Rumex crispus
Salix discolor
Salix petiolaris
Satureja hortensis
Schedonorus pratensis
Scirpus pendulus

Scorzonerioides autumnalis
Silene vulgaris
Solanum dulcamara
Solidago canadensis
Solidago gigantea
Solidago juncea
Solidago rugosa
Sonchus arvensis
Symphyotrichum cf
lateriflorum
Symphyotrichum cordifolium
Symphyotrichum novae-
angliae
Symphyotrichum pilosum
Symphyotrichum puniceum
Symphyotrichum urophyllum
Taraxacum officinale
Tilia americana
Toxicodendron radicans
Tragopogon dubius
Trifolium pratense
Tussilago farfara
Ulmus rubra
Vicia cracca
Viola cf canadensis
Vitis riparia
Zanthoxylum americanum