

Response to MEMO: 12/21/21

Re: Vineyard Wind Maintenance Building (DRI 81-M3)

3/4/22 MVC follow-ups in red 3/4/2022

3/7/22 DRI 81-M3 follow-up responses below in blue 3/14/2022

## ADMINISTRATIVE

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### 1. Signed DRI application form (PDF).

Shared by email on 12/21/2021.

*MVC Question:* In general, photographs of document pages, incomplete documents, or documents submitted in sections over time are not acceptable for DRI submissions. Future submissions must be complete documents in PDF form.

*Project Response:* Understood.

### 2. Include title block and date on all new plans.

Updated.

## STORMWATER AND FLOODPLAIN CONSTRUCTION

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### 3. Engineered stormwater plan (designed for at least a 25-year storm) and narrative, including the following:

Field Engineering will have the Stormwater Report completed by February 23, 2022.

*MVC Question:* We received the Stormwater Management System Report on 3/4/22. Has an engineered stormwater management plan, showing the subsurface recharge system and infiltration trench, been developed? If so, please provide a copy.

*Project Response:* Please find a copy of the 'Stormwater Report\_Field Engineering' dated 3/4/2022 and 'Drainage Plan and Details' dated 3/9/22.

### 4. Sea-level rise projections and reference (MVC staff recommends the MA Coastal Flood Risk Model and can provide more info if necessary).

The proposed building will comply with present building codes for construction in a FEMA VE zone.

*MVC Question:* Please describe any efforts to project sea-level rise for the project site. Please also be advised that the MVC may require independent review of the project in regard to sea-level rise and floodplain construction.

*Project Response:* The proposed O&M Terminal building will be constructed in accordance with local building code requirements and the latest FEMA VE zone elevations as referenced to 'FIRM Map' 250007C0103J dated July 20, 2016. The building will be located in a VE12 zone, and the proposed design provides for the bottom of the lowest structural member at elevation 14' NAVD88, two (2') above FEMA VE (EL 12') zone.

### 5. How raising the building will allow water to flow through the lower level.

The proposed building will feature an open ground level to accommodate the FEMA VE Zone and parking. The loading dock at the rear of the building will be either be pile-supported or constructed with pre-cast concrete culverts to allow water to flow through the lower level. Please see “Revised Elevations South & West\_02102022”.

***MVC Question:*** Will the lower level be open on more than one side? A diagram would be helpful.

***Project Response:*** The lower parking level will be fully open on the North, South, and West sides. The East side is partially open towards Beach Road. Please note proposed plantings screen supporting building concrete retaining walls, columns, and pilings.

Attached please find a draft ‘Building Section Detail’ prepared by Foth dated March 4, 2022 to support visualization.

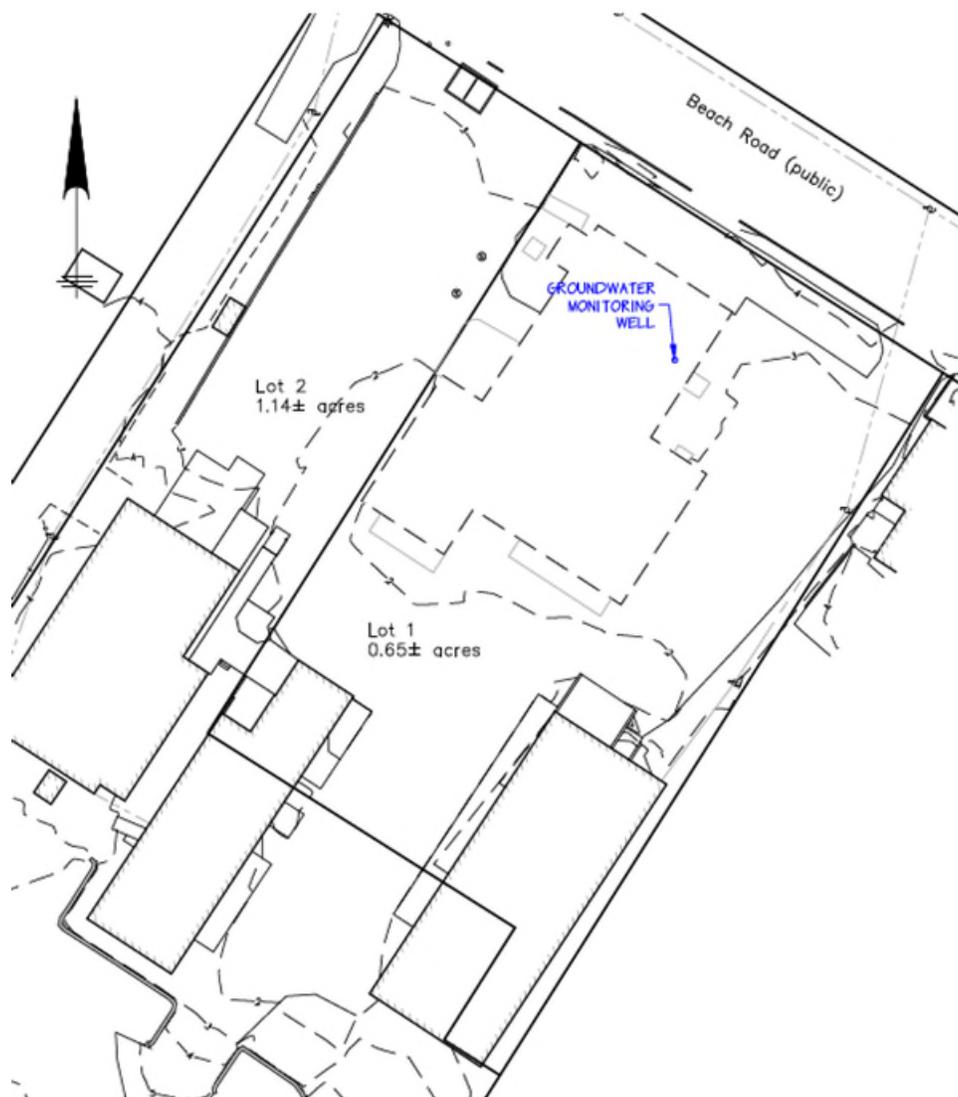
#### **6. How much of the current flooding occurs as a result of runoff and hardscape vs. groundwater.**

At present the project site is lower in elevation than the abutting properties and is 85% covered with impervious surfaces. The impervious areas on the property will be reduced from 24,038± square feet to 13,675± square feet, which is a 43% reduction in impervious area. The lot will be 48.4% impervious and 51.6% pervious. The proposed project will significantly increase the pervious areas on the lot and is proposed to raise the lot to elevation +6.0’ NAVD88 to mitigate against current flooding events and bring the lot into parity with abutting parcels.

Sourati Engineering Group LLC has been monitoring groundwater elevations for the last two years and are currently recording additional periodic readings and updating their groundwater elevation database. Based on the results of their extended groundwater study, groundwater has not been a source of flooding on the property; The impervious areas on the property will be reduced from 24,038± square feet to 13,675± square feet, which is a 43% reduction in impervious area. The lot will be 48.4% impervious and 51.6% pervious. The proposed building and site development designed intends to minimize flooding impacts.

***MVC Question:*** Please provide the data/reports from Sourati Engineering showing that groundwater is not a source of flooding at the site.

***Project Response:*** Please see the attached ‘Groundwater Letter’ and ‘Groundwater Monitoring Well Sketch’ from Sourati Engineering Group. Sourati Engineering Group has monitored the groundwater elevations on the property through well water elevations from Jan 7, 2020 through January 17, 2022. Groundwater records documents groundwater elevations relative to NAVD88 and uniformly below the present site ground topographic elevations. Based on the data collected and notes in the Letter groundwater is not the source of flooding at the site. Since the subject property is shared like a bowl, stormwater from adjacent properties, which are at higher elevations than the subject property discharges onto the site.



**7. How the proposed regrading is allowed or appropriate in the flood zone.**

State building code R322.3.2 Elevation Requirements in a coastal high hazard area states that “minor grading, and the placement of minor quantities of fill, shall be permitted for landscaping and for drainage purposes under and around building for support of parking slabs, pool decks, and walkways.” Additionally, as mentioned in response to questions 5 & 6, the proposed project will significantly increase the previous areas on the lot and is proposed to raise the lot to elevation +6.0’ NAVD88 to mitigate against current flooding events and bring the lot into parity with abutting parcels. The proposed building will feature an open ground level to accommodate the FEMA VE Zone and parking. The loading dock at the rear of the building will be either be pile-supported or constructed with pre-cast concrete culverts to allow water to flow through the lower level.

*MVC Question:* The proposed site plan shows that the lot will be between 4 and 9 feet higher than existing conditions and 4 feet higher than the parcel to the west. Please specify any local or state standards by which the proposed regrading would be considered minor.

Project Response: State building code R322.3.2 Elevation Requirements in a coastal high hazard area provides for grading of the majority of the site to an elevation of 6 feet NAVD88 in parity with abutting parcels. The proposed ramp to access the first (1<sup>st</sup>) floor will be supported by concrete retaining walls and will be constructed perpendicular to storm flowage and provide for suitable groundwater separation for storm infiltration trenches designed to mitigate for the 25-year storm. The proposed ramp orientation does not prevent coastal storm flowage or divert coastal flood waters to abutting parcels and provides vehicular and pedestrian access to the site, and suitable location for the infiltration trenches.

Please find a copy of the 'Stormwater Report\_Field Engineering' dated 3/4/2022 and 'Drainage Plan and Details' dated 3/9/22.

**8. How impacts on neighboring properties and Beach Road, including as a result of the grade changes, will be minimized.**

As stated in Response 6 above, the minimal proposed grading of the site will reduce the impacts of flooding events and will not divert floodwaters to abutting parcels. Field Engineering will have the Stormwater Report completed by February 23, 2022, to demonstrate these details.

MVC Question: See response to question 7 above.

Project Response: See above response to Question 7.

**9. Grading plan, including existing and proposed grade changes, and the grade of abutting properties.**

Please see "Existing Conditions Site Plan dated February 11, 2022" with the existing topography and "Proposed Site Plan dated February 11, 2022" including the proposed topography.

**10. Clarify whether the project would be able to accommodate any elevation of Beach Road in the future.**

The proposed project begins at the elevation of Beach Road and then gently slopes upwards towards the back of the site. The site could likely be accommodated if Beach Road is raised. The parking under the structure might have to accommodate a small downward ramp depending on the chosen revised elevation of Beach Road.

Proposed site grading to an elevation of +6.0' NAVD88 will be approximately two (2') feet higher than the present Beach Road +4.0 NAVD88 grades. Any future elevation of Beach Road can be readily accommodated up to +8.0' NAVD88.

MVC Question: How would this affect flooding of the parking area, and ability of water to flow through the site?

Project Response: The raised and open parking area provides for the ability of storm-generated flood waters to flow through the building and into the adjacent FEMA AE (EL 10) zone.

**11. Housing proposal and employment narrative (to be discussed with staff in January).**

Please see the 'Economic Narrative' attached.

*MVC Question:* In regard to Table 4, what assumptions or data was used to determine how many people would be "living locally" and not need housing?

*Project Response:* We have evaluated each job based on the skills necessary and have determined how many could be reasonably filled with local workforce. These are estimates utilizing the best information to date. When it comes to the start of year 1 of operations these numbers will be converted to actuals and updated periodically. As one example, the project estimates it will need up to seven highly skilled technicians (with 3 to 4 years of wind technicians experience) at the start of operations and the project does not anticipate this skill to be currently available on Martha's Vineyard. However, the project expects to hire warehouse managers in which the probability that this position could be sourced locally is much higher.

*MVC Question:* Does Table 4 apply only to the year 5 local content target? In other words, is the housing proposal to provide 21 employee beds by year five? How will this be rolled out in years 1-5?

*Project Response:* Table 4 refers to year 1 of operations. The project anticipates needing to provide 21 employee beds at year 1. The project will reevaluate needs on years 3, 5 and periodically thereafter.

*MVC Question:* Explain how "The number of beds needed is expected to decline as local residents are staffed [and] the project retains more local residents."

*Project Response:* As workforce efforts continue and experience is being developed on Martha's Vineyard, we expect to fill more jobs locally.

**12. Economic narrative – direct and indirect jobs, and other benefits to the island economy.**

Please see the 'Economic Narrative' attached.

*MVC Question:* Is it known what specific jobs and salaries will be created for this facility? If not, why? When would that information be available?

*Project Response:* The jobs and salaries listed are indicative of what will be expected. Table 1 is the best information that can be provided. Actual salaries will only be known after employees are hired as these are individually negotiated and a case-by-case basis.

*MVC Question:* Would all non-local workers be employed only on a temporary basis? How would this be handled?

*Project Response:* All non-local employees will be employed on a permanent basis though they may spend only a portion of their time on Martha's Vineyard. If they do not live locally, these persons have and will be included in the bed count estimates above.

## TRAFFIC

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### 13. Any updated traffic generation data.

Please see “MVC Traffic Excel\_EXT\_DRI81\_M3” which was reviewed with Mike Murrow 1/12/2022.

### 14. Traffic narrative (to be discussed with staff in January).

Please see “MVC Traffic Excel\_EXT\_DRI81\_M3” which was reviewed with Mike Murrow 1/12/2022.

## WASTEWATER AND NITROGEN

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### 15. Clarify existing and proposed impermeable surface area on the site.

Please see “Existing Conditions Impermeable Surface Map” attached and “Proposed Conditions Impermeable Surface Map” Please refer to the Existing Impervious Areas Sketch dated February 11, 2022 and the Proposed Impervious Areas Sketch dated February 11, 2022.

The proposed O&M Support Building in DRI 81-M3 will significantly improve the permeability of the site. Please find the supporting quantities in the below table.

Total Area of Lot 1	28,274± S.F.
Existing impermeable surface area	24,038± S.F.
Proposed impermeable surface area in DRI 81-M3	13,675± S.F.

The proposal includes reducing the impermeable surface area on the site by 43%, from 24,038± S.F. to 13,675± S.F.

### Total square footage of lawn and other landscape areas (for nitrogen calculation).

Being drafted and will be provided in advance of LUPC.

### 16. Written confirmation from the town Wastewater Department that there is adequate flow for the project.

The project has 2900 sf of office space and will require 75 GPD per 1000 SF, or a total of 218 GPD. The only other water use is from the locker room area which is used by techs returning from the wind farm. These techs will take approximately 10 showers per day using 16 gallons each for a total of 160 GPD, total 378 GPD. There are 525 GPD available. The plans and calculations have been sent to the wastewater department for verification.

**MVC Question:** Please provide written confirmation from the town. This will be needed prior to scheduling LUPC.

**Project Response:** Please see email from Jared Meader dated 3/4/2022. The project is working with Jared Meader with Tisbury Sewer department.

## LANDSCAPE

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### 17. Provide any alternative proposals for the lawn areas – shrubs and other strongly rooted salt-tolerant plants, etc.

**MVC Question:** This will be needed prior to scheduling LUPC.

*Project Response:* Below is a plant list prepared by the landscape architect for Boch Park, a nearby low-lying area. The planting was approved by the Tisbury Conservation Commission and is now completed. The attachment also contains a soil mix appropriate for the situation. It is interesting to note that even this area, (which is immediately adjacent to the beach) has a pedestrian-friendly lawn area.

Botanical Name	Common Name
<b>Perennials:</b>	
<i>Artemesia 'Powis Castle'</i>	Silver Mound
<i>Limonium latifolium</i>	Sea Lavender
<i>Solidago sempervirens</i>	Seaside Goldenrod
<b>Grasses</b>	
<i>Ammophila breviligulata</i>	American Beachgrass
<i>Eragrostis spectabilis</i>	Purple Love Grass
<i>Panicum 'Cape Breeze'</i>	Cape Breeze Switchgrass
<i>Panicum 'Shenandoah'</i>	Shenandoah Switchgrass
<i>Schizocyrium scoparium</i>	Little Bluestem
<b>Shrubs and Groundcovers</b>	
<i>Arctostaphylos uva-ursi</i>	Bearberry
<i>Comptonia peregrina</i>	Sweetfern
<i>Gaylussacia baccata</i>	Huckleberry
<i>Hudsonia ericoides</i>	Rock Rose
<i>Ilex verticillata</i>	Winterberry
<i>Myrica pensylvanica</i>	Northern Bayberry
<i>Prunus maritima</i>	Beach Plum
<i>Rosa rugosa 'Frau Dagmar Hastrup'</i>	Rugosa Rose - Pink
<i>Rhus aromatica 'Gro Low'</i>	Gro Low Sumac
<i>Vaccinium angustifolium</i>	Lowbush Blueberry
<i>Viburnum dentatum 'Autumn Jazz'</i>	Arrowwood Viburnum
<b>Trees</b>	
<i>Gleditsia triacanthos 'Skycole'</i>	Honey Locust
<i>Juniperus virginiana (Island Grown)</i>	Eastern Red Cedar

**Grow in 50/50 mix of sand and weed-free compost**

In addition, the applicant has consulted the University of Massachusetts Center for Agriculture, Food and the Environment. The Center has published a list of recommended ground covers, shrubs and trees to be used in Coastal Massachusetts. This list is seen below:

COASTAL PLANTING

Ground covers, grasses and forbs:

*Ammophila breviligulata*\* - American Beach grass  
*Arctostaphylos uva-ursi*\* - Bearberry  
*Carex pennsylvanicum* - Pennsylvania Sedge  
*Coreopsis lanceolata* - Lance-leaf Coreopsis  
*Coreopsis verticillata* - Thread-leaf Coreopsis  
*Deschampsia flexuosa* - Tufted Hairgrass  
*Limonium nashii*\* - Sea Lavender  
*Panicum virgatum* - Panic Grass  
*Parthenocissus quinquefolia*\* - Virginia  
*Schizachyrium scoparium* - Little Bluestem  
*Festuca ovina* - Sheep Fescue  
*Festuca ovina* var. *longifolia* - Hard Fescue

*Festuca rubra* - Red Fescue  
*Hibiscus moscheutos* - Marsh Hibiscus  
*Hudsonia tomentosa*\* - False Heather  
*Juniperus horizontalis*\* - Creeping Juniper  
*Kosteletzkya virginica* - Seashore Mallow  
*Solidago sempervirens* - Seaside goldenrod  
*Spartina alterniflora* - Smooth cordgrass  
*Spartina patens* - Saltmarsh cordgrass

Shrubs:

*Amelanchier canadensis*\* - Shadbush  
*Aronia arbutifolia* - Chokeberry, Red  
*Aronia melanocarpa* - Chokeberry, Black  
*Baccharis halimifolia* - Groundsel Bush  
*Clethra alnifolia* - Sweet Pepperbush  
*Comptonia peregrina*\* - Sweet Fern  
*Ilex glabra* - Inkberry  
*Ilex verticillata* - Winterberry  
*Itea virginica* - Sweetspire  
*Iva frutescens* - Marsh elder  
*Leucothoe axillaris* - Coast Leucothoe  
*Myrica pennsylvanicum*\* - Bayberry  
*Physocarpus opulifolius* - Eastern Ninebark

*Prunus maritima*\* - Beach Plum  
*Rhus aromatica* - Sumac, Fragrant  
*Rhus copallina* - Sumac, Shining  
*Rhus glabra* - Sumac, Smooth  
*Rhus typhina* - Sumac, Staghorn  
*Rosa virginiana* - Virginia Rose  
*Sambucus canadensis* - Elderberry  
*Vaccinium corymbosum* - Highbush Blueberry  
*Viburnum cassinoides* - Northern Wild Raisin  
*Viburnum dentatum* - Arrow-wood

Trees:

*Acer rubrum* - Red Maple  
*Chamaecyparis thyoides* - Atlantic White Cedar  
*Fraxinus pennsylvanica* - Green Ash  
*Ilex opaca* - American Holly  
*Juniperus virginiana*\* - Eastern Red Cedar  
*Magnolia virginiana* - Sweet Bay Magnolia  
*Nyssa sylvatica* - Tupelo

*Picea glauca* - White Spruce  
*Picea pungens* - Colorado Spruce  
*Pinus rigida*\* - Pitch Pine  
*Prunus serotina*\* - Black Cherry  
*Quercus* spp.\* - Oak, various species  
*Thuja occidentalis* - Eastern Arborvitae

If the MVC decides that the proposed lawn area at this project should require the use of different plant material, plants would be selected from these lists and used, along with limited lawn areas, in a final landscape plan to be submitted to LUPC following project approval.

**18. Show the location of existing and proposed trees on the site plan.**

Two honey locust trees are existing. The proposed project will add four more. The honey locust trees will be aligned parallel to Beach Road.

*MVC Question:* Please show the location of the trees on the site plan.

*Project Response:* Please see the below annotated site plan. The applicant would like to make the correction that two honey locust trees will be added marked as 'Proposed' below.



**BUILDING AND USES**

**19. Full elevations of each side of the building, including loading dock and parking entrance/exit.**

Please see "Revised Elevations South & West\_02102022".

*MVC Question:* Why are there no windows on the majority of the south side of the building?

*Project Response:* The East side of the building abuts the Tisbury Marketplace and therefore would have limited views. It is anticipated that there will be warehouse shelving along this exterior wall, and it cannot be seen from Beach Road. Once the project evaluates the solar panel layout and warehouse shelving layout the project may consider skylights, or some form of transom eave of windows along the roofline.

**20. Rendering of building from east (Tisbury Marketplace side) and south.**

See elevation view mentioned in Question #20.

**21. Breakdown of square footages for each use inside the building, including parking.**

Please find below the approximate breakdown of square footage.

O&M Building	Approximate square footage <sup>1</sup>
Footprint	11200
Lower Floor Parking	11200
Main Floor Interior Area	10800

Warehouse	5900
Support Areas	2450
Locker Rooms	1250
Meeting Room/Canteen	1200
Upper Floor Interior Office Area	2900

<sup>1</sup>Approximate square footages are preliminary and subject to change upon final building design.

**22. How will the additional offshore wind procurement involving Vineyard Wind (announced on 12/17/21) affect the proposed uses of the maintenance building?**

There is no impact. The announcement on 12/17/2021 is related to a separate proposed project called Commonwealth Wind being developed by Avangrid Renewables. The O&M Building will be utilized for the Vineyard Wind 1 project.

**23. Would GE potentially be involved in the project?**

GE is one of the subcontractors of Vineyard Wind 1 and will abide by all decisions by the MVC as a result of this DRI.

**24. Clarify proposal for EV charging stations, including how many will be installed.**

The current plan includes EV charging stations in the parking lot.

*MVC Question: How many stations are included?*

*Project Response: The number of EV charging stations is being evaluated to comply with electrical code. We anticipate 3 to 5.*

**25. Show where on Lot 2 the existing storage building will be reconstructed.**

Final location on Lot 2 is to be determined. Lot 2 is not a part of this DRI application.

**26. Show solar panels on the renderings and provide approximate output.**

The project estimates the installation of approximately 50 kW of solar capacity. This will produce the order of 62,600 kWh of renewable electricity on the site per year and is dependent on final design.

**27. Update the existing conditions plan to exclude the building at the front of the site.**

Existing conditions plan has been updated.

**28. List of materials to be stored in the building, including anything classified as waste or hazmat.**

All maintenance materials and spare parts will be stored according to the appropriate maintenance procedures and best management practices. Any waste classified as regulated will be handled and disposed of in compliance with the applicable Massachusetts regulation.

Typical materials in the O&M Building may include minor spare parts and consumables such as bolts, nuts, washers, pins, safety wire, spare safety equipment, minor repair kits, switch units, luminaires, oil level gauges, greases for hinges commissioning tools, electrical extensions leads, mechanical and

electrical tools, impact adapters and sockets, torque wrenches, sandpaper, grinding saws, cable cutters, joint inserts, grating clamps, grate pins & latches, spare life lines, LED drivers, light arms, paints, adhesives, LED drivers, antennas, spare ladders, lifting equipment, caulking guns, power tools and mounting brackets. Major spares parts may include various replacement parts for within the turbine including motors, rotor brakes, coils, magnets, transformers, gearboxes fans, locking pins, bearing grease pumps with weights up to 1 ton.

**29. What is the expected lifespan of the building?**

Commercial buildings have an average useful life of 39 years according to the IRS depreciation guidelines.

***MVC Question:** What is the expected lifespan of this particular building?*

***Project Response:** At least 40 years. With proper maintenance we anticipate the building will last beyond 60 years.*