



7. ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES

REQUIREMENT (SUMMARIZED BY APPLICANT):

7. *In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the department, where relevant, an analysis of the beneficial and adverse impacts of the proposed project on natural resources. The owner or operator shall perform the analyses prescribed in 9VAC15-60-40. [Requirement language is truncated. The full requirement language is long and will be outlined fully in the detailed sections below. The following is a summary of the requirements under 9VAC15-60-40.]*

9VAC15-60-40. Analysis of the Beneficial and Adverse Impacts On Natural Resources. [Summarized by Applicant below]

A. Analyses of wildlife. Including: (1). Desktop surveys and maps, and (2) Desktop map for avian resources in Coastal Avian Protection Zones (CAPZ).

B. Analyses of historic resources. Including: (1) Compilation of known historic resources, (2) Architectural survey and (3) Archaeological survey; conducted by a *qualified professional*.

C. Analyses of other natural resources. Including: a preconstruction desktop survey of natural heritage resources within the disturbance zone.

D. Summary Report. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed Project on wildlife and historic resources identified by these studies and analyses. The summary shall include the findings data and supporting documents of studies A, B and C.

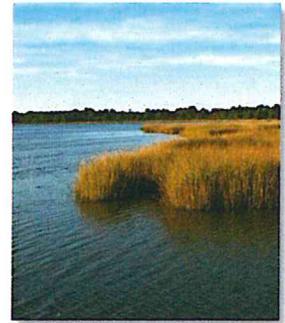
COMPLIANCE ANALYSIS:

This first portion of analysis provides a contextual overview for the Project with respect to beneficial and adverse impacts on natural resources. The latter portions of analysis will detail the full specific PBR requirements, the process entailed to conduct this analysis, the findings and assessment. Analysis has been conducted with respect to Wildlife, Historic Resources and Natural Resources, and we believe the analysis clearly shows this Project will result in a significant beneficial impact.

Contextual summary of some significant benefits include:

- **Clean Energy.** Operation of the Solar Project will produce electricity equivalent to roughly 20,000 homes, without the pollution associate with traditional energy generation.

- **Reduction of Nutrient Runoff to the Chesapeake Bay.** Taking roughly 1,000 acres out of active agricultural production will offer a meaningful reduction to the Chesapeake Bay. “Agriculture is essential to all people: farms provide us with food and fiber, natural areas, and aesthetic and environmental benefits. But agriculture is also the single largest source of nutrient and sediment pollution entering the Bay.” – Chesapeake Bay Program⁵



[Photo Credit – Chesapeake Bay Foundation Website – Jamie Betts]⁶

- **Reduced Stormwater & Sediment runoff.** The grasses used throughout the Project will provide a year-round stabilized ground cover, which will result in a reduction of stormwater runoff and reduced silt/sediment runoff versus the current seasonal crop rotation practices.

[Photo Credit – Prairie Nursery]⁷



- **Soil Structure and Organic Content Enhancement.** Once established the turf-grass cover enhances the soil’s organic content and structure through its annual decay and rebuilding of the root-system.
- **Grass Habitat Improvements Leading to Species Diversity.** With the conversion from crops to turf-grass across ~1,000 acres, with edges that meet woodlands, and the associated very low activity across the Project area, new habitat will emerge for ground nesting birds and small mammals.

⁵ Chesapeake Bay Program. Learn The Issues/Agriculture: Overview. 2/26/15 <www.chesapeakebay.net/issues/issue/agriculture#inline>

⁶ Chesapeake Bay Foundation Website – Jamie Betts/Trust for Public Land <www.cbf.org/how-we-save-the-bay/in-our-communities>

⁷ Prairie Nursery <<http://www.prairienursery.com>>



- **Enhanced Native Vegetation.** Native plant species buffers and clusters will be planted across the Project frontage along roadsides and residential neighboring properties, which will have a meaningful benefit to habitat and wildlife. “Our native plants play a crucial role in our unique ecosystem. They help preserve the diversity, beauty, and function of our natural ecosystems. – Guide to Native Plants of Accomack and Northampton⁸



- **“Solar Walk” – Wildlife/Historic/Solar Education.** The Project will include a “Solar Walk” area to be designed in collaboration with the Accomack County Planning Department, that walks visitors to points along the solar Project exposing them to, and educating them about, clean solar energy generation and the wildlife habitat that the Project operates within and supports. Visitors will also be educated about the history of the region and the ~1,000 acre Project area, connecting it’s history to the current use as a cutting-edge Project representing what is possible now and into the future.



Contextual process for evaluation of potential adverse effects:

The following activities have been undertaken in the evaluation of potential adverse impacts, in addition to following our best practices learned through development of successful solar projects around the country, including our three other projects of similar scale:

- **PBR Informal Project Review Meeting.** On December 2, 2013 an informal meeting was held about this Project with representatives from the Virginia Department of Environmental Quality (DEQ), Department of Game and Inland Fisheries (DGIF), Department of Conservation and Recreation (DCR), Department of Historic Resources (DHR) and Department of Mines Minerals and Energy (DMME). The Project was discussed as well as the process and requirements for reviewing and evaluating potential adverse impacts of this Project within the PBR process.
- **PBR Mock Review.** We attended the PBR Mock Review on August 14, 2014, which included representatives from DEQ, DGIF, DCR, DHR and developers of other potential projects and other interested parties. The process and requirements for reviewing and evaluating potential adverse impacts of projects within the PBR process was discussed at length.
- **WERMS Database Review with DGIF Staff.** Maps were provided to DGIF staff on August 8, 2014 depicting the Project location and the Wildlife Environmental Review

⁸ Virginia Coastal Zone Management Program through its Virginia Seaside Heritage Program. Guide to Native Plants of Accomack and Northampton Guide. 2009. Page 3. PHOTOS by Dot Field, from the same Native Plants of Accomack and Northampton Guide.

Map Service (WERMS) database information (see Attachment 07-A-i-1). We met with DGIF staff in person on August 14, 2014, and we were able confirm that the review map was accurate and did not generate findings of concern. The WERMS were reviewed April 14, 2015 to confirm no new findings of significance. (see Attachment 07-A-i-2)

- **Review with DGIF Staff of Prior Bald Eagle Habitat – “No Nest”.** Areas near the proposed Project showed observations related a prior bald eagles nest. This data was specifically reviewed with DGIF staff in August of 2014 to confirm that DGIF considers this area includes “No Nest” and that the nest was considered by DGIF to be “Not Active” as of 2009. This area is depicted in the maps included in Attachment 07-A-i, as referenced above.
- **DCR Environmental Review Submission.** On August 11, 2014 an Environmental Review request was submitted to DCR to confirm the Project would not impact Natural Heritage Resources/Conservation Areas.
- **CAPZ Map Consultation.** On August 8, 2014 the Coastal Avian Protection Zone Map, from the DEQ’s Coastal GEMS geospatial data system was consulted, at which time it was determined that the Project is located entirely within Area 5 “Regional Importance, No Survey”. The CAPZ Map is included as Attachment 07-A-ii.
- **Avian Assessment.** West, Inc. was consulted to assess site-specific and general risk factors to avian species related to PV solar facilities. West, Inc. is a very experienced natural resources consultant that has studied the impacts of wind and solar facilities on avian species across the United States. A report by West, Inc. dated October 29, 2014 is included as Attachment 07-A-iii, which confirms that due to the location and nature of the proposed solar Project, it is not expected to have a significant impact, if any, on avian species.
- **DHR Meeting.** On December 18, 2014 we, along with Dovetail Cultural Resources Group, (“Dovetail”), a qualified historical professional, met with DHR and DEQ to review historical analysis completed, including: Compilation of known historic resources, Architectural survey and Archaeological survey, as further discussed in section 7(B) below, and in Dovetail’s Report of December 2014 (Attachment 07-B-i).
- **Wetlands Reviewed for Avoidance.** Throughout the course of Project assessment and design, we have reviewed the presence of wetlands. The review has been lead by Alex Dolgus, who is a professional wetland consultant who does wetland related work on the Eastern Shore of Virginia and Maryland; he became a consultant after retiring as wetland reviewer for the U.S. Army Corps of Engineers, where he reviewed wetlands on the Eastern Shore of Maryland. Alex has ensured that our solar array area is located such that it stays out of any area that could be considered a wetland. Please note: that any wires that need to go from one side of a wetland to another, would do so underground via a boring, which is not considered an impact to the wetland.
- **Wetland Determination the U.S. Army Corps of Engineers.** We requested confirmation from the U.S. Army Corps of Engineers (ACOE) that the Project does not



COMMUNITY ENERGY SOLAR

impact ACOE jurisdictional wetlands. The ACOE has evaluated the proposed Project area and confirmed that it would not impact any ACOE jurisdictional wetlands, as referenced in a letter from the ACOE dated January 6, 2015 (see Attachment 07-A-iV).

- **Project Review with DEQ Tidewater Regional Office Staff.** On January 15, 2015 a meeting about this Project was held with DEQ Tidewater Regional Office to discuss this proposed Project, including confirmation of any potential impacts of the Project's operations on attainment of national ambient air quality standards. DEQ Tidewater staff at the meeting included: Water Protection/Permitting, Stormwater/Erosion & Sediment Control and Air Permitting.



Compliance analysis addressing the specific requirements of the PBR:

REQUIREMENT (SPECIFIC PBR LANGUAGE):

7. In accordance with § 10.1-1197.6 B 7 of the Code of Virginia, furnishes to the department, where relevant, an analysis of the beneficial and adverse impacts of the proposed project on natural resources. The owner or operator shall perform the analyses prescribed in 9VAC15-60-40. For wildlife, that analysis shall be based on information on the presence, activity, and migratory behavior of wildlife to be collected at the site for a period of time dictated by the site conditions and biology of the wildlife being studied, not exceeding 12 months;

9VAC15-60-40. Analysis of the Beneficial and Adverse Impacts On Natural Resources.

Please note: As required by the PBR, the analysis is broken into 3 sections:

- 7(A) – Wildlife
- 7(B) – Historic Resources
- 7(C) – Other Natural Resources

7(A) ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES (WILDLIFE)

A. Analyses of wildlife. *To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall conduct preconstruction wildlife analyses. The analyses of wildlife shall include the following:*

1. Desktop surveys and maps. *The applicant shall obtain a wildlife report and map generated from DGIF's Virginia Fish and Wildlife Information Service web-based application (9VAC15-60-120 C 3) or from a data and mapping system including the most recent data available from DGIF's subscriber-based Wildlife Environmental Review Map Service of the following: (i) known wildlife species and habitat features on the site or within two miles of the boundary of the site and (ii) known or potential sea turtle nesting beaches located within one-half mile of the disturbance zone.*

2. Desktop map for avian resources in Coastal Avian Protection Zones (CAPZ). *The applicant shall consult the "Coastal Avian Protection Zones" map generated on the department's Coastal GEMS geospatial data system (9VAC15-60-120 C 1) and determine whether the proposed solar energy project site will be located in part or in whole within one or more CAPZ.*



7(A) SPECIFIC COMPLIANCE ANALYSIS:

As stated above, the following evaluation steps were taken.

- **WERMS Database Review with DGIF Staff.**
- **Review with DGIF Staff of Prior Bald Eagle Habitat – “No Nest”**
- **CAPZ Map Consultation.**
- **Avian Assessment**
- **WERMS Update and Confirmation**

The Wildlife Environmental Review Map Service (WERMS) analysis shows that there are no threatened or endangered species of concern within or adjacent to the proposed Project area.

Review of the most recent WERMS map on April 14, 2015 (data updated by the DEQ 3/15/15) does include additional data within 2 miles of the Project site, none of which reference observations or habitat located on the Project site, or are otherwise likely to be negatively impacted by the proposed Project, thus no related formal mitigation is necessary under the PBR.

The Costal Avian Protection Zone (CAPZ) map analysis shows that the Project is located within “Zone 5 - Regional Importance, No Survey”. Thus the PBR stipulates contribution to a state fund for related research as the appropriate mitigation for any potential impact.

Further analysis indicates that the Project is not expected to have a negative impact on avian species, due primarily to the nature of the Project and the siting of the Project. See below for further detail.

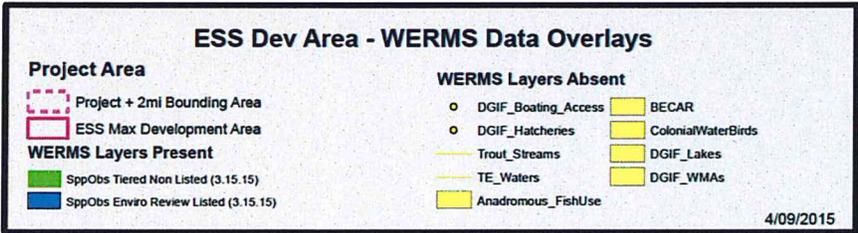
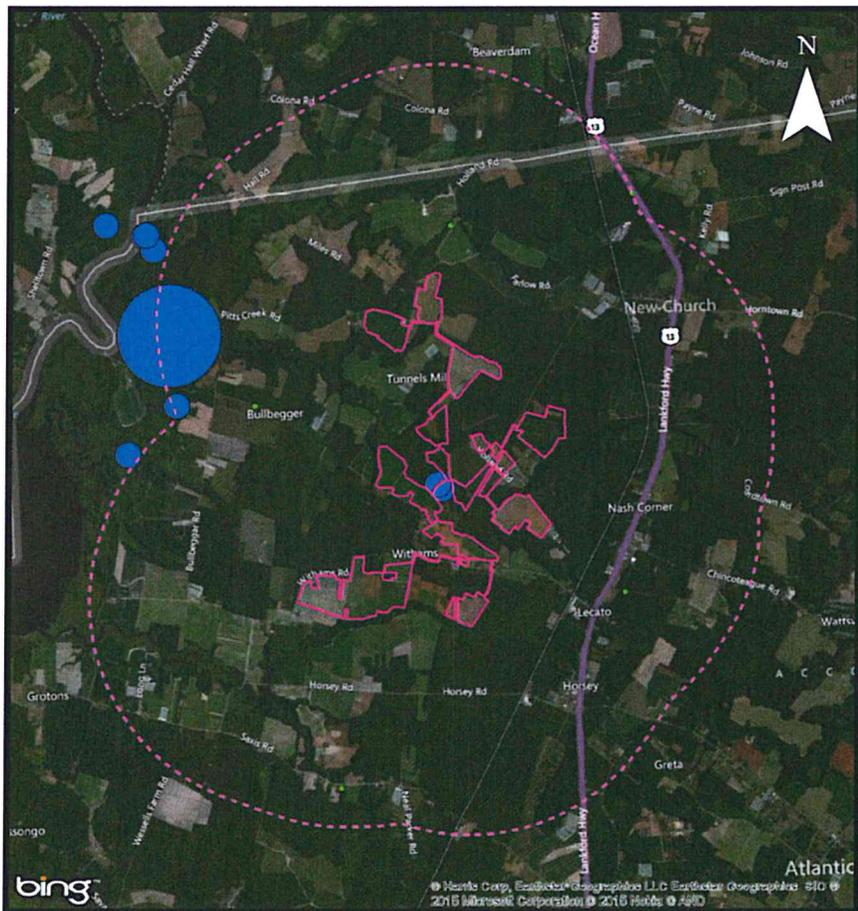
LATEST DGIF WERMS DATA MAP: No wildlife species of concern.

Below is a map (as of April 9, 2015) depicting the Project area and the Wildlife Environmental Review Map Service (WERMS) data. That map shows (i) no known wildlife species and habitat features on the site or within two miles of the boundary of the site and (ii) no known or potential sea turtle nesting beaches located within one-half mile of the disturbance zone.

Please note: The only wildlife feature found on, or in close proximity to, the site represents an outdated sightings of a Bald Eagle nest, from 2004. By 2009 DGIF recognized this former nest to be Not Active, and by 2011 DGIF recognized this location to contain No Nest.

WERMS MAPPING

No Known Species or habitat on Site and No Known or Potential Sea Turtle Nesting Breaches



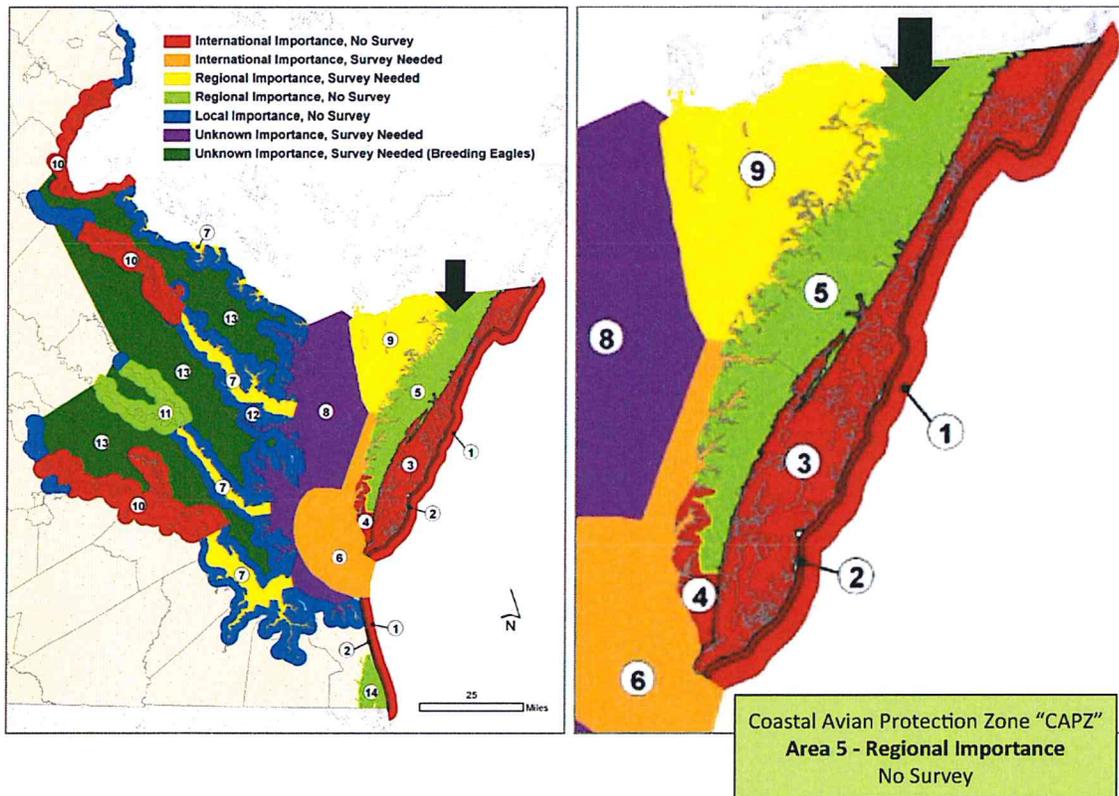
Larger size WERMS maps are included in Attachment 07-A-i.

Coastal Avian Protection Zones (CAPZ) Map:

ZONE 5 – Regional Importance, No Survey

Below is a map of the Coastal Avian Protection Zones generated on the department's Coastal GEMS geospatial data system. The map shows the Project location to be in “Zone 5 Regional Importance, No Survey” as depicted below.

Coastal Avian Protection Zone (CAPZ) Map



Please note: The PBR prescriptively determines the mitigation for any project in Zone 5, to be \$1,000 per Megawatt (\$80,000 cumulative for this proposed Project) to be contributed to a fund designated by the Department in support of scientific research. This contribution satisfies all requirements related to the CAPZ under the PBR approval process (see 9VAC15-60-60 B 3).

A larger size CAPZ map is also included as Attachment 07-A-ii.

Beyond the specified requirements of the PBR, we understand and appreciate the importance of the Delmarva Peninsula to avian migration. We consulted with West, Inc., Natural Resource and Scientific Consultants (“West Consultants”), who has likely done the most in depth study to date of potential impacts of solar on avian species. We did not expect any issues caused by projects like the one proposed here, but we are comforted that West Consultants has reported that they too do not see reason to expect an impact. This is largely due to the benign nature of the technology itself and the plentiful attractive habitat in the region. The only solar projects that



have seen potential impact are located in vast desert locations where birds do not have good actual water bodies and wetlands to visit in the vicinity. The West Consultants report is included at Attachment 07-A-iii.

There has also been confusion with recent media attention related to concentrated solar Projects, also located in desert conditions, singeing birds with high temperature concentrated light beams. The proposed Eastern Shore Solar Project utilizes traditional photovoltaic technology, not concentrated solar, and thus the concerns about concentrated solar are completely unrelated to the Eastern Shore Solar Project.

The findings by West Consultants are consistent with our experience from operating projects along the east coast, which are successfully operating without impacts to avian species.

7(A) Analysis Summary:

The specific requirements of the PBR are directly accomplished, and based upon the specific rules of the PBR as (1) there are no WERMS identified species within the Project area, and (2) any potential impact to the coastal avian species is prescriptively mitigated within Zone 5. Furthermore our analysis beyond the PBR specific rules give us additional understanding that the larger intent of the PBR is being met by this Project, and that we are not expected to have an adverse effect on avian species. We also expect the Project to have a beneficial impact on wildlife and wildlife habitat as a result of energy generation without pollution, reduction of nutrient runoff to the Chesapeake Bay, reduced stormwater and sediment runoff, enhanced grassland habitat and enhanced native vegetation.



7(B) ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES (HISTORIC)

7(B) REQUIREMENT:

9VAC15-60-40. Analysis of the Beneficial and Adverse Impacts On Natural Resources.

B. Analyses of historic resources. *To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a preconstruction historic resources analysis. The analysis shall be conducted by a qualified professional meeting the professional qualification standards of the Secretary of the Interior's Standards for Archeology and Historic Preservation (9VAC15-60-120 B 2) in the appropriate discipline. The analysis shall include each of the following:*

- 1. Compilation of known historic resources.*** *The applicant shall gather information on known historic resources within the disturbance zone and within one-half mile of the disturbance zone boundary and present this information on the context map referenced in 9VAC15-60-70 B, or as an overlay to this context map, as well as in tabular format.*
- 2. Architectural survey.*** *The applicant shall conduct a field survey of all architectural resources, including cultural landscapes, 50 years of age or older within the disturbance zone and within one-half mile of the disturbance zone boundary and evaluate the eligibility of any identified resource for listing in the VLR.*
- 3. Archaeological survey.*** *The applicant shall conduct an archaeological field survey of the disturbance zone and evaluate the eligibility of any identified archaeological site for listing in the VLR. As an alternative to performing this archaeological survey, the applicant may make a demonstration to the department that the project will utilize nonpenetrating footings technology and that any necessary grading of the site prior to construction does not have the potential to adversely impact any archaeological resource.*

7(B) SPECIFIC COMPLIANCE ANALYSIS:

The Unique Nature of this Project. A very relevant consideration is the nature of the Project itself. The Project involves the installation of low profile solar arrays measuring approximately 8-10 feet in height; shorter than a 1-story building. Each array will be fastened to the earth by narrow metal foundations and require relatively little ground-disturbing activities during installation. Since this Project has very limited ground penetration when compared to a traditional construction project, it is unlikely that any penetrations would impact a potential historic resource. The ground penetration is limited to driven posts (or screwed in helical piles) and cable trenches, and the Project does not include foundations for larger permanent structures like housing or big box retail. It is likely that the majority of any intact archaeological sites would not be disturbed and would likely remain intact throughout the Project period. If any archeological feature of historic significance were encountered through the installation of the Project array, it could be worked around to avoid an impact.



Regarding architectural resources, the low height of the arrays would not be visible from any NRHP-eligible buildings or structures in the Project vicinity.

Furthermore the Project is temporary, as it will be removed at the end of the Project life, which is expected to be 30 years (however the life may be extended). It has been agreed with the county and landowners that the Project will be removed and the land restored to a condition suitable for its prior use (primarily agricultural), supported by a decommissioning plan including security funds, to ensure end of Project-life removal of equipment. Thus the land will be returned to the landowner in a condition substantially similar to how it exists today, with the land available for farming, development or archeological evaluation as appropriate prior to any future projects.

Dovetail Cultural Resources Group (“Dovetail”) was retained to conduct the analysis of potential impacts on historic resources as outlined above. Dovetail’s staff working on this Project includes qualified professionals meeting the Secretary of the Interior’s Standards for Archeology and Architectural History. Dovetail is a very experienced and well-respected historical consulting firm based in Fredericksburg, Virginia who has completed many historical studies throughout Virginia and neighboring states.

Dovetail has prepared an extensive 110 page report, which includes the analysis of:

- (1) Compilation of known historic resources – As referenced in the “Background Review” section (page 15).
- (2) Architectural Survey – As referenced in the “Phase IB Architectural Survey” section (pages 16 & 37).
- (3) Archeological Survey – As referenced in the “Phase IB Archeological Survey” section (pages 16 & 45), with respect to 20 acres considered higher probability to contain historical resources as determined by an archeological resource predictive model.

The report is included as Attachment 07-B.

Compilation of Known Historic Resources. Dovetail conducted a background review, including searching the DHR site and survey file records, as well as examining the Civil War Sites Advisory Commission (CWSAC) maps for the area to assess the potential of the Project area to contain significant cultural resources. This research included an investigation of records on previous cultural resource investigations and previously recorded archaeological sites and architectural properties within a 0.5-mile radius of the Project area. The background review also included a review of archaeological sites recorded in Accomack County.

During the background review, it was determined that no formal cultural resource surveys have been completed within 0.5 miles of the Project area, and there are no previously recorded properties within or immediately adjacent to the current Project footprint.

Architectural Survey. Dovetail conducted a Phase IA architectural preliminary study and a Phase I reconnaissance-level architectural survey within the Project area and surrounding potential view shed of the Project area. Architectural survey was completed for structures within one-half mile that could have a view-shed of the Project, and not for any structures that could not have a view-shed due to topography or significant vegetation as evaluated on-site by Dovetail.

The architectural reconnaissance study identified 46 structures, mostly residences, that are believed to be 50 years or older within the Project study area. The work involved a field survey and the completion of a resource documentation packet for each property including an architectural description, site plan, photographs, and an evaluation of resource significance.

None of these 46 architectural properties are recommended by Dovetail as eligible for the National Register of Historic Places (NRHP) as individual resources based on criteria set forth for evaluating resource significance and integrity. One of these 46 properties could potentially be considered as part of a multi property NRHP nomination for rural churches in Accomack County. This will be further assessed if further assessment is determined to be appropriate.



Archaeological survey. The archaeological study included a Phase IA preliminary evaluation, crafting a probability model for archaeological potential and a Phase IB field survey of a 20-acre sample of higher probability areas within the larger Project area. The probability model analyzed characteristics of known sites across Accomack County and evaluated historic maps of the area to note locales of low, moderate and high potential to contain archaeological sites. The subsequent field survey of the 20-acre sample area included over 350 shovel test pits dug and evaluated by Dovetail staff over a 2-week period in November 2014, by a crew of six archaeologists. During the survey, the team recorded 11 archaeological sites. All but one are clearly recommended to be not eligible for inclusion on the NRHP as they have little potential to



contribute to an understanding of local or regional history. One site was classified as potentially eligible as the information available to surveyors was not sufficient to recommend eligibility or non-eligibility. The site, located at the edge of a farm field, may be the location of an 18th-century residence. If it's determined to be appropriate the solar array can be designed to avoid this site.

Additional archeological survey. The DHR has recommended that we conduct additional archeological survey work beyond the survey work already completed. We will work with DEQ and DHR to further assess, and if applicable to avoid or reduce, the potential for a significant adverse effect to archeological historic resources.

7(B) Analysis Summary:

We believe that the research to date, along with the nature of the proposed Project, suggest that the Project is not likely to have a significant adverse effect on historic resources as set forth above.

7(C) ANALYSIS OF POTENTIAL BENEFICIAL/ADVERSE IMPACTS ON NATURAL RESOURCES (OTHER NATURAL RESOURCES)

7(C) REQUIREMENT:

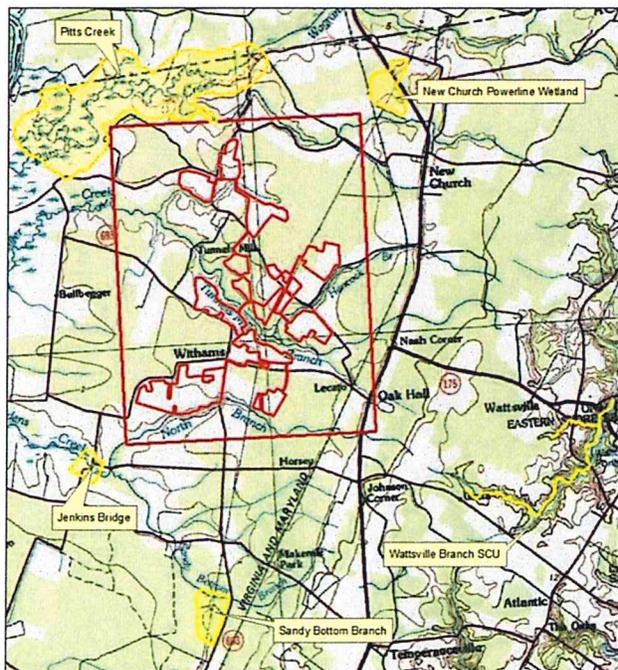
9VAC15-60-40. Analysis of the Beneficial and Adverse Impacts On Natural Resources.
C. Analyses of other natural resources. To fulfill the requirements of § 10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a preconstruction desktop survey of natural heritage resources within the disturbance zone.

7(C) SPECIFIC COMPLIANCE ANALYSIS:

We have conducted a desktop survey of natural heritage resources within and surrounding the disturbance zone in accordance with the above requirement. We submitted a data request to the Virginia Department of Conservation and Recreation (DCR) in accordance with DCR's Environmental Review Services process on August 11, 2014. A report was received on August 19, 2014, which is included as Attachment 07-C.

The results found **“There are no State Natural Area Preserves under DCR’s jurisdiction in the project vicinity”**, as depicted by the map below (which includes the Project area superimposed), also that the proposed activity would not effect any state-listed threatened or endangered plants or insects.

Eastern Shore Solar A, B, C and D
Conservation Sites





There are State Natural Area Preserves outside the Project vicinity. We think it's worth noting, that due to the geography and the nature of the proposed Project, no adverse impact to these preservation areas, which are all outside the Project vicinity, are expected as a result of this Project. Actually some improvement is expected. The Pitts Creek is recorded by the DEQ as exceeding Total Maximum Daily Load (TMDL) as a result of nutrient levels (Nitrogen and Phosphorous), as document by the "Total Maximum Daily Load on Dissolved Oxygen In Unnamed Tributary to Pitts Creek, Accomack County, Virginia" April 26, 2008 report by the DEQ. Reduction of farming and the application of nutrients in the vicinity, can help to reduce TMDL to the Pitts Creek, and ultimately to the Chesapeake Bay via Pitts Creek and the other surrounding tributaries to the Bay.

Beyond the State Natural Area Preserves, we recognize that all natural resources are important regardless if they are preserved or not. In additional to a low impact Project, we are helping to protect these resources by the following means: the Project has been sighted to avoid wetlands, several proposed crossing of wetlands will be done via directional boring to avoid impact and future maintenance, adherence to Soil Erosion and Sediment Control requirements and best practices, planting of grasses throughout the Project area and adherence to state stormwater management requirements including reduced runoff from the site, avoiding any impact to stream flow, respecting riparian buffers and Chesapeake Bay Resource Protection Areas, as well as planting native vegetation along roadsides and residential areas as a landscaping buffer.

7(C) Analysis Summary:

The requirements of the PBR are directly accomplished as There are no State Natural Area Preserves under DCR's jurisdiction in the Project vicinity, and based upon the specific rules of the PBR, and thus there is no related significant adverse effect on natural resources. Furthermore our analysis beyond the specific prescriptive PBR rules give us additional comfort that the larger intent of the PBR is being met by this Project, and furthermore it is expected that this Project will result in a benefit to natural resources as a result of energy generation without pollution, reduction of nutrient runoff to the Chesapeake Bay, reduced stormwater and sediment runoff, enhanced soil structure and organic content, enhanced grassland habitat, enhanced native vegetation.



7(D) SUMMARY REPORT

7(D) REQUIREMENT:

9VAC15-60-40. Analysis of the Beneficial and Adverse Impacts On Natural Resources.

D. Summary report. *The applicant shall provide to the department a report presenting the findings of the studies and analyses conducted pursuant to subsections A, B, and C of this section, along with all data and supporting documents. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed project on wildlife and historic resources identified by these studies and analyses.*

7(D) COMPLIANCE ANALYSIS: This document and this section 7 includes the report presenting the findings of studies and analysis conducted pursuant to subsection A, B and C of 9VAC15-60-40, along with data and supporting documents as set forth and referenced in the Compliance Analysis subsections A, B and C above.

As set forth in the analysis and summary of each subsection A, B and C above, it is not expected that any significant adverse effect to wildlife or historic resources will result from this proposed Project; and it is expected that the proposed Project represents a significant benefit to Virginia's natural resources as a result of energy generation without pollution, reduction of nutrient runoff to the Chesapeake Bay, reduced stormwater and sediment runoff, enhanced soil structure and organic content, enhanced grassland habitat and enhanced native vegetation.

This analysis shows that the proposed Project is expected to comply with both the specific requirements, and the intent, of the PBR.



8. MITIGATION PLAN

REQUIREMENT: 8. *In accordance with § 10.1-1197.6 B 8 of the Code of Virginia, furnishes to the department a mitigation plan pursuant to 9VAC15-60-60 that details reasonable actions to be taken by the owner or operator to avoid, minimize, or otherwise mitigate such impacts, and to measure the efficacy of those actions; provided, however, that the provisions of this subdivision shall only be required if the department determines, pursuant to 9VAC15-60-50, that the information collected pursuant to § 10.1-1197.6 B 7 of the Code of Virginia and 9VAC15-60-40 indicates that significant adverse impacts to wildlife or historic resources are likely. The mitigation plan shall be an addendum to the operating plan of the solar energy project and the owner or operator shall implement the mitigation plan as deemed complete and adequate by the department. The mitigation plan shall be an enforceable part of the permit by rule;*

COMPLIANCE ANALYSIS:

Beyond the formal mitigation plan as specifically defined by the PBR, this Project implements many measures that would typically be considered forms of mitigation. These mitigative measures include the following.

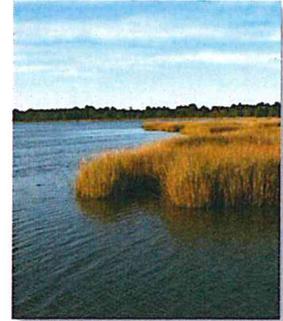
Mitigative Measures:

- **Regional Site Selection.** The general vicinity, as located away from the Chesapeake Bay, Atlantic Ocean and Lankford Highway (U.S. Route-13), naturally reduces the likelihood of impacts to natural resources.
- **Specific Site Selection.** Over 3,000 acres were initially leased for evaluation and potential siting of this Project. Within the potential Project area, the Project has been sited/located in locations that inherently reduce the likelihood of impact to natural resources. The Project is almost entirely located on existing farmland, with a very small area (~15 acres) on upland that is currently used to harvest timber.
- **Avoiding Long Transmission Lines.** The Project was sited as close as possible (across the road) to the existing electrical substation, which avoids the needs for long transmission lines to interconnect the Project to the electric grid.
- **Use of Existing Terrain.** No mass grading will be done for this Project, site will utilize existing topography. If any drainage ditches are moved, they will continue to be connected to the existing water resources on either end.
- **Underground Wires.** Wires connecting the array areas on either side of wetlands will be bored underground to avoid disturbance of wetlands.
- **Enhanced Native Vegetation.** Native plant species buffers and clusters will be planted along Project frontage of roadsides and residential neighboring properties, which will have a meaningful benefit to habitat and wildlife. "Our native plants play a crucial role



in our unique ecosystem. They help preserve the diversity, beauty, and function of our natural ecosystems.” – Guide to Native Plants of Accomack and Northampton⁹

- **Reduction of Nutrient Runoff to the Chesapeake Bay.** Taking roughly 1,000 acres out of active agricultural production will offer a meaningful reduction of nutrient loading to the Chesapeake Bay. “Agriculture is essential to all people: farms provide us with food and fiber, natural areas, and aesthetic and environmental benefits. But agriculture is also the single largest source of nutrient and sediment pollution entering the Bay.” – Chesapeake Bay Program¹⁰



[Photo Credit – Chesapeake Bay Foundation Website – Jamie Betts]¹¹

- **Reduced Stormwater & Sediment runoff.** The grasses used throughout the Project area will be consistent with grasses identified in Virginia’s new Stormwater regulations as “Best Practices” for Stormwater reduction. The grasses proposed will provide a year-round stabilized ground cover, which will result in a reduction of stormwater runoff nutrient loading, and reduced silt/sediment runoff versus the current seasonal crop rotation practices.
- **Soil Structure and Organic Content Enhancement.** Once established the turf-grass cover enhances the soil’s organic content and structure through its annual decay and rebuilding of the root-system.
[Photo Credit – Prairie Nursery]¹²
- **Grass Habitat Improvements Leading to Species Diversity.** With the conversion from crops to turf-grass across ~1,000 acres, the natural edges from grass to woodland, and the associated very low activity across the Project area, new habitat will emerge for ground nesting birds and small mammals. The operations plan will also include measures such that mowing and other maintenance activities accommodate the presence of such species.
- **“Solar Walk” – Wildlife/Historical/Solar Education.** The Project will include a “Solar Walk” area to be designed in collaboration with the Accomack County Planning Department, that walks visitors to points along the Solar Project exposing them to, and educating them about, clean solar energy generation and the wildlife habitat that the Project operates within and supports. Visitors will also be educated about the history of



⁹ Virginia Coastal Zone Management Program through its Virginia Seaside Heritage Program. Guide to Native Plants of Accomack and Northampton Guide. 2009. Page 3.

¹⁰ Chesapeake Bay Program. Learn The Issues/Agriculture: Overview. February 26, 2015
<<http://www.chesapeakebay.net/issues/issue/agriculture#inline>>

¹¹ Chesapeake Bay Foundation Website – Jamie Betts/Trust for Public Land <www.cbf.org/how-we-save-the-bay/in-our-communities>

¹² Prairie Nursery <<http://www.prairienursery.com>>



the region and the ~1000 acre Project area, connecting its history to the current use as a now cutting-edge project representing what is possible now and into the future.

Formal Mitigation Plan:

The permit by rule establishes specific guidelines for what shall be included within the formal Mitigation plan.

The formal Mitigation Plan includes contribution of \$1,000.00 per megawatt of rated capacity (\$80,000 for 80 megawatts) to a fund designated by the department in support of scientific research investigating the impacts of projects in CAPZ on avian resources as required in 9VAC15-60-60 B 3. This contribution will be made upon commercial operation of the proposed Project.

The other mitigate measures discussed above this section are the good practices implemented as part of the site selection, design and implementation rather than a part of the formal Mitigation Plan, but they play a significant role as to why the formal Mitigation Plan is able to be so limited.



**COMMUNITY
ENERGY SOLAR**

9. CERTIFICATION OF DESIGN INCORPERATING MITIGATION PLAN

REQUIREMENT: 9. *In accordance with § 10.1-1197.6 B 9 of the Code of Virginia, furnishes to the department a certification signed by a professional engineer licensed in Virginia that the project is designed in accordance with 9VAC15-60-80 ;*

9VAC15-60-80. Small Solar Energy Project Design Standards.

The design and installation of the small solar energy project shall incorporate any requirements of the mitigation plan that pertain to design and installation if a mitigation plan is required pursuant to 9VAC15-60-50.

COMPLIANCE ANAYSIS:

A certification by a professional engineer licensed in Virginia is not expected to be applicable as the Formal Mitigation plan includes a financial contribution and does not include any engineering design features.



10. OPERATION PLAN INCORPORATING MITIGATION PLAN

REQUIREMENT: *10. In accordance with § 10.1-1197.6 B 10 of the Code of Virginia, furnishes to the department an operating plan that includes a description of how the project will be operated in compliance with its mitigation plan, if such a mitigation plan is required pursuant to 9VAC15-60-50 ;*

COMPLIANCE ANALYSIS:

Inclusion of the Mitigation Plan within the operating plan is not expected to be applicable as the Formal Mitigation plan includes a financial contribution, not operational procedures.

11. SITE PLAN & CONTEXT MAP

REQUIREMENT: 11. In accordance with § 10.1-1197.6 B 11 of the Code of Virginia, furnishes to the department a detailed site plan meeting the requirements of 9VAC15-60-70 ;

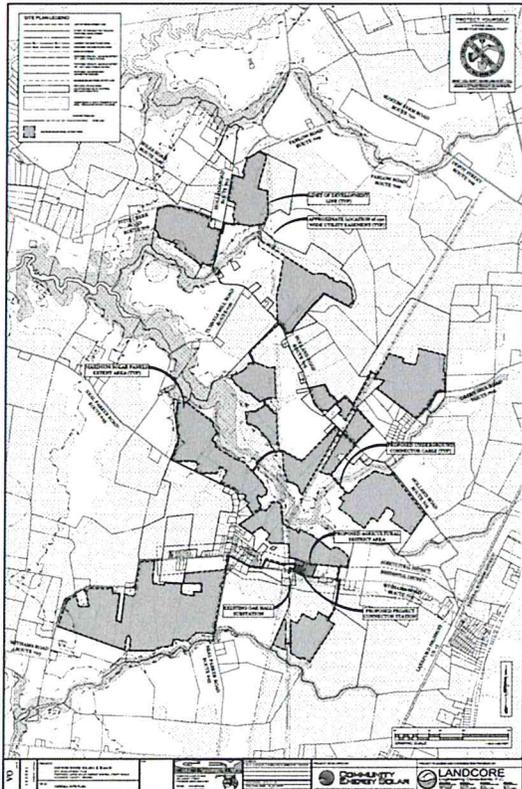
9VAC15-60-70. Site Plan and Context Map Requirements.

A. The applicant shall submit a site plan that includes maps showing the physical features, topography, and land cover of the area within the site, both before and after construction of the proposed project. The site plan shall be submitted at a scale sufficient to show, and shall include, the following: (i) the boundaries of the site; (ii) the location, height, and dimensions of all existing and proposed PV systems, other structures, fencing, and other infrastructure; (iii) the location, grades, and dimensions of all temporary and permanent on-site and access roads from the nearest county or state maintained road; and (iv) water bodies, waterways, wetlands, and drainage channels.

B. The applicant shall submit a context map including the area encompassed by the site and within five miles of the site boundary. The context map shall show state and federal resource lands and other protected areas, Coastal Avian Protection Zones, historic resources, state roads, waterways, locality boundaries, forests, open spaces, and transmission and substation infrastructure.

COMPLIANCE ANALYSIS:

A. A site plan has been provided in accordance with 9VAC15-60-70 A, which is included as Attachment 11-A.



A depiction of the Overall Site Plan sheet is included here (to the left). The full size site plan set is included as Attachment 11-A.

Please note this site plan is consistent with site plan approved by the Accomack County Board of Supervisors for a Conditional Use Permit on January 21, 2015. The Detail Sheet (“DT”) has since been updated, but only to include max heights as required by the PBR (9VAC15-60-70 A).



12. CERTIFICATION OF APPLICATION FOR ENVIRONMENTAL PERMITS

REQUIREMENT: 12. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small solar energy project has applied for or obtained all necessary environmental permits;

COMPLIANCE ANALYSIS:

A certification is included as Attachment 12 and on the following page.

Please note, this certification is provided in the form that was included within the Solar PBR Guidance 7/18/2012 as an attachment to Section II Methodology.

Attachment-12: Certification of Environmental Permits Application

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Solar)
Environmental Permit Certification Form**

Facility Name and Location: **Eastern Shore Solar
Accomack County, VA**

Applicant's Name & Title: **Eastern Shore Solar LLC
Thomas J. Tuffey, Manager**

Applicant's Mailing Address:
**3 Radnor Corporate Center, Suite 300
100 Matsonford Road
Radnor, PA 19087**

Telephone Number and Email Address:
**Tom Tuffey: 610-745-0651
Tom.Tuffey@CommunityEnergyInc.com
David Krupp: 215-740-8355 (David Krupp)
David.Krupp@CommunityEnergyInc.com**

The applicant is submitting an application for a small renewable energy permit by rule from the Virginia DEQ. In accordance with § 10.1-1197.6 B 12 of the Code of Virginia, before such permit application can be considered complete, the applicant must certify that the small renewable energy project has applied for or obtained all necessary environmental permits.

List all state and local environmental permits that are necessary for the small renewable energy project listed above. Indicate for each whether the permit has been applied for and/or obtained. If the permit has been obtained, attach either a copy of the permit or a letter from the appropriate agency staff member on agency stationery stating that the permit has been issued and the date of issuance. If a permit has not yet been obtained but has been applied for, provide the name of the permit, name and address of the receiving agency, name of the staff person at the receiving agency to whom the application was addressed (if available), and the date on which the application was submitted. If no permits are necessary, write the word "none" in the first column.

| Permit | Permitting Agency / Authority, Address, Contact Person | Applied for (Date) | Obtained (Date) |
|--|--|-------------------------------------|-----------------|
| VA Permit by Rule Small Renewable Energy Projects (Solar) | VA DEQ 629 E Main St., Richmond, VA23219 Mary Major | 10/14/14 (Notice of Intent Date) | |
| Conditional Use Permit & Rezoning (Storwater and E&S are associated) | Accomack County 23282 Courthouse Ave, Accomac, VA 23301 Rich Morrison | 10/15/14 | 01/21/15 |
| Wetland Non Jurisdiction Letter | US Army Corps of Engineers Norfolk District Fort Norfolk - 803 Front St, Norfolk, VA 23510 Peter Kube | 12/31/14 | 01/06/15 |
| Air Permit (for construction phase generators) | VA DEQ - Tidewater 5636 Southern Blvd., Virginia Beach, VA 23462 Troy Breathwaite | 04/14/15 | |

To the best of my knowledge the above mentioned permits includes all necessary environmental permits.

I hereby certify that the information provided above (and any attached information) is correct and fulfills the requirements of § 10.1-1197.6 B 12 of the Code of Virginia and 9 VAC 15-40-30 A 12.

Applicant's Signature *Thomas J. Tuffey*

Date: **4/14/15**



13. PUBLIC REVIEW

REQUIREMENT: 13. *Prior to authorization of the project and in accordance with § 10.1-1197.6 B 13 and 14 of the Code of Virginia, conducts a 30-day public review and comment period and holds a public meeting pursuant to 9VAC15-60-90 . The public meeting shall be held in the locality or, if the project is located in more than one locality, in a place proximate to the location of the proposed project. Following the public meeting and public comment period, the applicant shall prepare a report summarizing the issues raised by the public and include any written comments received and the applicant's response to those comments. The report shall be provided to the department as part of this application;*

COMPLIANCE ANALYSIS:

A public review and comment period was conducted commencing April 30, 2015 through May 29, 2015. The documents were made available for public review during this period at the Accomack County Planning Department (in the locality of Accomack County). A public meeting was held on May 20 at 2:00 PM at Shore Bank (in the locality of Accomack County).

Notice of the public review and comment period and public meeting was published in the Eastern Shore News on April 15, 2015 and April 22, 2015 (see Attachment 13-A).

The public meeting was attended by four (4) Eastern Shore Solar representatives and eleven (11) participants.

Eight (8) comments of support were provided, seven (7) were provided in person and one (1) was provided via email as that person was not able to attend the meeting in person.

There were no comments provided in opposition to the Project.

All questions asked at the meeting were satisfied with answers at the meeting and do not require follow up.

Please note that no members of the public visited the Accomack County Planning Department to review the available documents and no comments were received during the public review period outside of the public meeting context.

A full report of the public review and comment period and public meeting is included as Attachment 13-B.



14. PERMIT FEE

REQUIREMENT: 14. In accordance with 9VAC15-60-110 , furnishes to the department the appropriate fee.

9VAC15-60-110. Fees for Projects Subject to Part II of This Chapter.

C. Fee schedules. Each application for a permit by rule and each application for a modification of a permit by rule is a separate action and shall be assessed a separate fee. The amount of the permit application fee is based on the costs associated with the permitting program required by this chapter. The fee schedules are shown in the following table:

| Type of Action | Fee |
|---|-----------------|
| <i>Permit by rule application – by rated capacity:</i> | |
| <i>> 5 MW up to and including 25 MW</i> | <i>\$8,000</i> |
| <i>> 25 MW up to and including 50 MW</i> | <i>\$10,000</i> |
| <i>> 50 MW up to and including 75 MW</i> | <i>\$12,000</i> |
| <i>> 75 MW up to and including 100 MW</i> | <i>\$14,000</i> |
| <i>Permit by rule modification – for any project subject to Part II of this chapter</i> | <i>\$4,000</i> |

COMPLIANCE ANALYSIS: Payment of \$14,000 is provided with this application as stipulated by the PBR (9VAC15-60-110 C).



III. ATTACHMENTS

| | |
|--------------|--|
| ATT-01 | PBR Notice of Intent for Solar Energy Project |
| ATT-02-A | Notice of Approval of the Conditional Use Permit |
| ATT-02-B | Notice of Approval of the Rezoning |
| ATT-02-C | Land Use Compliance Certification |
| ATT-03 | Interconnection Studies (Multiple Documents) |
| ATT-04 | Interconnection Agreements (Multiple Documents) |
| ATT-05 | Certification of Maximum Generation Capacity |
| ATT-06 | Air Permit Application - Construction Phase Generator(s) |
| ATT-07-A-i | WERMS Maps (Multiple Documents) |
| ATT-07-A-ii | CAPZ Map |
| ATT-07-A-iii | Avian Assessment Report |
| ATT-07-A-iv | ACOE Wetland Non-Jurisdictional Letter |
| ATT-07-B | Historical Analysis Report (Multiple Documents) |
| ATT-07-C | DCR Environmental Review |
| ATT-11-A | Project Site Plan (Multiple Documents) |
| ATT-11-B | Context Map |
| ATT-12 | Certification of Environmental Permits Application |
| ATT-13-A | PBR Public Review Notice |
| ATT-13-B | Report of Public Meeting & Public Comment Period (Multiple Documents) |