

Wind Permit by Rule (PBR) GUIDANCE
Department of Environmental Quality (DEQ)
Section II: Methodology

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<p>NOTES: In addition to the general provisions found in Section I (General) of this Guidance, the applicant should follow the specific Methodology suggested in Section II, as provided in the right-hand columns below.</p> <p>For purposes of brevity, only regulatory sections that have Guidance associated with them are set forth within the left-hand column of this table. The prefix “9 VAC15-40” should be assumed to precede each subsection number (e.g., 9 VAC 15-40-10, 9 VAC 15-40-20). A full copy of the Wind PBR regulation can be found at http://lis.virginia.gov/000/reg/TOC09015.HTM#C0040 and at http://www.deq.state.va.us/renewable_energy/wind.html. Applicants should read this regulation in its entirety in conjunction with this Guidance document, since applicants are responsible for complying with all regulatory provisions.</p> <p>DISCLAIMER: This document is provided as Guidance and, as such, sets forth standard operating procedures for the agency. It does not mandate any particular method nor does it prohibit any alternative method. If alternative proposals are made, such proposals should be reviewed and accepted or denied based on their technical adequacy and compliance with appropriate laws and regulations.</p>	
<p>9 VAC 15-40-</p>	
<p>10. Definitions</p> <p>20. Authority and Applicability</p> <p>30. Application</p> <p>A. Requirements</p> <p>The owner or operator of a small wind energy project with a rated capacity greater than 5 megawatts shall submit to the department a complete application, in which he satisfactorily accomplishes all of the following:</p>	<p><i>This section lists the 15 basic application requirements as set forth in the 2009 statute and as amended on 2017. If a particular requirement warrants detailed explanation, then that explanation is set forth either in this Guidance document, in a subsequent section of the regulation, or in both. For example, the Analyses, Determination of Significant Adverse Impact, and Mitigation requirements in subparagraphs 7 and 8 of this section are spelled out in three subsequent regulatory sections.</i></p>
<p>1. In accordance with §10.1-1197.6 B 1 of the Code of Virginia, and as early in the project development process as practicable, furnishes to the department a</p>	<p><i>Applicants should furnish this notice of intent (NOI) to DEQ as soon as possible, but certainly after the applicant believes that the proposed project can meet local land use requirements (that is, that the proposed</i></p>

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<p>notice of intent, to be published in the Virginia Register, that he intends to submit the necessary documentation for a permit by rule for a small renewable energy project;</p>	<p><i>project appears capable of meeting the requirements for a special use permit or other locally-designated permission, and not that the project has necessarily been granted a special use permit, etc.)</i> Once a NOI has been received by DEQ, the applicant can access the expertise from the sister agencies that will be involved in the review of the application, i.e., Department of Historic Resources (DHR), the Department of Game and Inland Fisheries (DGIF) and the Department of Conservation and Recreation (DCR).</p> <p><i>Please refer to the attached Sample Notice of Intent (Full PBR Projects) when drafting the Notice of Intent. The agency prefers that this notice be transmitted by electronic mail to mary.major@deq.virginia.gov.</i></p> <p><i>A copy of the NOI (including date originally submitted) should be included in the final application package.</i></p>
<p>2. In accordance with §10.1-1197.6 B 2 of the Code of Virginia, furnishes to the department a certification by the governing body of the locality or localities wherein the small renewable energy project will be located that the project complies with all applicable land use ordinances;</p>	<p><i>DEQ recommends that local government certification take the form of either a letter on official letterhead stationery from a responsible official of the local government (e.g., county administrator or his designee) or the Local Governing Body Certification Form attached to this Guidance. If the local governing body prefers to write the letter on official letterhead stationery, the letter should state that the proposed project (identified by the name of the applicant, the proposed location including project coordinates, and other relevant information) complies with all applicable land use ordinances.</i></p> <p><u><i>For projects located in nearshore waters</i></u></p> <p><i>DEQ queried the Attorney General about what entity, if any, would certify land use compliance for projects located in nearshore waters or on state-owned submerged lands. The official Opinion of the Virginia Attorney General, issued in December 2010, stated that there is no entity authorized to render this certification; however, DEQ may authorize a project in these locations if the applicant has met all other PBR requirements. The opinion is summarized as follows:</i></p> <p><i>Opinion No.: 10-091, requested by David Paylor, Director, Department of</i></p>

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of national ambient air quality standards;	<i>annual basis.</i>
<p>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 9VAC15-40-40. 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;</p>	<p><i>The regulation contemplates that analysis is “relevant” when the desktop surveys required in 9 VAC15-40-40 A 1 (or 9 VAC 15-40-40 A 5 for CAPZ) indicate the presence of the stated wildlife resources. When desktop surveys show that the stated wildlife resources are present, then the applicant will perform the field studies prescribed in the remainder of 9 VAC 15-40-40 A (or rely on studies performed by others, in the case of certain CAPZ areas) and report the analysis of all these studies to DEQ. <u>See also</u>, Guidance to subsection 40 below.</i></p>
<p>8. In accordance with §10.1-1197.6 B 8 of the Code of Virginia, furnishes to the department a mitigation plan pursuant to 9VAC15-40-60 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 9VAC15-40-30 A 8 shall only be required if the department determines, pursuant to 9VAC15-40-50, that the information collected pursuant to §10.1-1197.6 B 7 of the Code of Virginia and 9VAC15-40-40 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 wind 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;</p> <p>9. Certification regarding project design.</p>	<p><i><u>See</u>, Guidance to subsections 50 & 60 below</i></p> <p><i>The operating plan should include an explanation of how the facility will operate post construction including contact information should a problem</i></p>

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<p>10. Operating plan.</p> <p>11. Site plan.</p>	<p><i>arise at the facility...</i></p>
<p>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 wind energy project has applied for or obtained all necessary environmental permits;</p>	<p><i>The applicant’s environmental permit certification letter should state which environmental permits are necessary for the proposed project (or local stormwater permit if the locality has such jurisdiction) and the status of the applicant’s application for each (“applied for” or “obtained”). If no environmental permits are necessary for the proposed project, then the applicant should so state in his certification letter. A suggested format for the applicant’s environmental permit certification appears as an attachment to this Guidance.</i></p> <p><u>“Applied for”</u></p> <p><i>For purposes of this regulation, the term “<u>applied for</u>” all necessary environmental permits means that the applicant has submitted an application to the receiving agency for each necessary environmental permit. The applicant should certify that he has “applied for” each permit by providing to DEQ 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.</i></p> <p><u>“Obtained”</u></p> <p><i>If the applicant has “<u>obtained</u>” the necessary environmental permits by the time he submits his PBR application, then he may either append copies of these permits or append a letter on agency stationery from the appropriate agency staff member that the permit(s) has been issued and the date of issuance/approval.</i></p>
<p>13. In accordance with § 10.1-1197.6 H and I of the Code of Virginia, furnishes to the department a certification signed by the applicant that the small</p>	<p><i>The applicant should certify that he is not a utility regulated under Title 56 of the Code of Virginia by submitting the non-utility Certification Form provided below.</i></p>

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<p>solar energy project is being proposed, developed, constructed, or purchased by a person that is not a utility regulated pursuant to Title 56 of the Code of Virginia or provides certification that (i) the project's costs are not recovered from Virginia jurisdictional customers under base rates, a fuel factor charge, or a rate adjustment clause or (ii) the applicant is a utility aggregation cooperative formed under Article 2 (§ 56-231.38 et seq.) of Chapter 9.1 of Title 56 of the Code of Virginia.</p>	<p><i>If the applicant is a utility, then he should submit the Utility Certification Form and must certify, by checking the appropriate box, that the project's costs are not recovered from Virginia customers under base rates, a fuel factor charge or a rate adjustment clause OR the utility is a cooperative.</i></p>
<p>14. Prior to authorization of the project and in accordance with §§10.1-1197.6 B 13 and 10.1-1197.6 B 14 of the Code of Virginia, conducts a 30-day public review and comment period and holds a public meeting pursuant to 9VAC15-40-90. 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; however, for projects located in nearshore waters or on state-owned submerged lands, the meeting shall be held in the locality that is the closest distance from the approximate center of the project's disturbance zone. 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; and</p> <p>15. In accordance with 9VAC15-40-110, furnishes to the department the appropriate fee.</p> <p>B. Agency Determination</p>	<p><i>It is the responsibility of the applicant to conduct both the public meeting and the 30-day public review and comment period. All the materials that are intended to be submitted in the PBR application must be available during this comment period, except for the summary report of the comment period and permit fee. This public comment is separate from any public meetings conducted to receive local approval - any previous public meetings will not substitute for this public comment period.</i></p> <p><i>For projects located in nearshore waters or on state-owned submerged lands, the one required public meeting is to be held in the locality specified in the regulation; however, the applicant should provide notice of the public meeting to the local government in each of the localities where significant natural resource impacts from the project are likely to occur.</i></p>

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<p>40. Analyses</p> <p>A. Wildlife</p> <p>To fulfill the requirements of §10.1-1197.6 B 7 of the Code of Virginia, the applicant shall conduct pre-construction wildlife analyses. The analyses of wildlife shall include the following:</p>	<p><i>The general approach is for the applicant to perform <u>desktop studies</u> of the project area. If the desktop studies indicate the presence of relevant wildlife, then the applicant will proceed to perform <u>field studies</u>, usually within the disturbance zone. Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts of the proposed project on relevant wildlife.</i></p> <p>Shelf life:</p> <p><i>This list provides a general guideline for how long a negative survey (a survey where <u>no</u> STATE-listed species was found) remains valid.</i></p> <table border="1"> <thead> <tr> <th data-bbox="972 727 1423 764"><u>Taxon/Species</u></th> <th data-bbox="1423 727 1944 764"><u># of years negative survey valid</u></th> </tr> </thead> <tbody> <tr> <td colspan="2" data-bbox="972 776 1944 813"><u>Mammals</u></td> </tr> <tr> <td data-bbox="972 813 1423 846">All listed bats</td> <td data-bbox="1423 813 1944 846">3 years</td> </tr> <tr> <td data-bbox="972 846 1423 878">Other listed mammals</td> <td data-bbox="1423 846 1944 878">2 years</td> </tr> <tr> <td colspan="2" data-bbox="972 889 1944 927"><u>Birds</u></td> </tr> <tr> <td data-bbox="972 927 1423 959">Gull-billed tern (<i>Sterna nilotica</i>)</td> <td data-bbox="1423 927 1944 959">1 years</td> </tr> <tr> <td data-bbox="972 959 1423 992">Peregrine falcon (<i>Falco peregrinus</i>)</td> <td data-bbox="1423 959 1944 992">1 years</td> </tr> <tr> <td data-bbox="972 992 1423 1024">Wilson's plover (<i>Charadrius wilsonia</i>)</td> <td data-bbox="1423 992 1944 1024">1 years</td> </tr> <tr> <td data-bbox="972 1024 1423 1057">Bald eagle (<i>Haliaeetus leucocephalus</i>)</td> <td data-bbox="1423 1024 1944 1057">1 years</td> </tr> <tr> <td data-bbox="972 1057 1423 1089">Other listed birds</td> <td data-bbox="1423 1057 1944 1089">2 years</td> </tr> <tr> <td colspan="2" data-bbox="972 1101 1944 1138"><u>Fish</u></td> </tr> <tr> <td data-bbox="972 1138 1423 1170">All listed fish</td> <td data-bbox="1423 1138 1944 1170">2 years</td> </tr> <tr> <td colspan="2" data-bbox="972 1182 1944 1219"><u>Amphibians</u></td> </tr> <tr> <td data-bbox="972 1219 1423 1252">All listed amphibians</td> <td data-bbox="1423 1219 1944 1252">2 years</td> </tr> <tr> <td colspan="2" data-bbox="972 1263 1944 1300"><u>Reptiles</u></td> </tr> <tr> <td data-bbox="972 1300 1423 1333">All listed reptiles</td> <td data-bbox="1423 1300 1944 1333">2 years</td> </tr> </tbody> </table>	<u>Taxon/Species</u>	<u># of years negative survey valid</u>	<u>Mammals</u>		All listed bats	3 years	Other listed mammals	2 years	<u>Birds</u>		Gull-billed tern (<i>Sterna nilotica</i>)	1 years	Peregrine falcon (<i>Falco peregrinus</i>)	1 years	Wilson's plover (<i>Charadrius wilsonia</i>)	1 years	Bald eagle (<i>Haliaeetus leucocephalus</i>)	1 years	Other listed birds	2 years	<u>Fish</u>		All listed fish	2 years	<u>Amphibians</u>		All listed amphibians	2 years	<u>Reptiles</u>		All listed reptiles	2 years
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	<p><u>All listed isopods and amphipods</u> 3 years</p> <p><u>All listed mollusks</u> 2 years</p> <p><u>All other listed invertebrates</u> 2 years</p> <p>-----</p> <p>Prepared by DGIF; last updated: November 19, 2010</p> <p>Sensitive Information (wildlife) and FOIA</p> <p><i>It is important to note that the locations of and specific information regarding caves and certain plant and animal species are considered sensitive and may be exempt from the Virginia Freedom of Information Act. See Section I of this Guidance.</i></p>
<p>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 (9VAC15-40-120 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; (ii) known bat hibernacula on the site or within five miles of the boundary of the site; and (iii) known maternity and bachelor bat colonies on the site or within 12 miles of the boundary of the site and (iv) known or potential sea turtle nesting beaches located within one mile of the disturbance zone.</p>	<p>Desktop Surveys and Maps</p> <p><i>The applicant should provide a report, including a map, of the desktop and field surveys conducted to determine the existence or potential existence of wildlife. The applicant should obtain a list of wildlife from DGIF and DCR for the proposed site and attach it to the application. The report should provide relevant, available details of any wildlife found onsite, including species, detection location(s), age, size, spatial distribution, and evidence of reproduction.</i></p>
<p>2. Breeding bird surveys. If the desktop analyses prescribed in subdivision 1 of this subsection indicate the presence of or habitat for a state-listed T&E bird species or a Tier 1 or Tier 2 bird SGCN within the</p>	<p>Breeding Bird Surveys</p> <p>a. <i>For projects located outside of the CAPZ, point counts should be conducted in the habitats that are likely to support the target species,</i></p>

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<p>disturbance zone, then the applicant shall conduct a breeding bird survey to identify state T&E bird species and Tier 1 and Tier 2 bird SGCN occurring within the disturbance zone during the species' annual breeding season.</p>	<p><i>at least three times between approximately May 1 and June 30, on dates at least 21 days apart. Points should be placed 250-500 meters apart within the appropriate habitats for the target species, throughout the disturbance zone. At least one point should be established per turbine and, to the extent possible, the points should be located at the planned locations of the turbines. Point counts should be conducted between sunrise and 10:00 a.m., for 5 minutes at each point. Each count should be subdivided into an initial 3-minute count and a subsequent 2-minute count. All birds observed during the 5-minute counts should be recorded. The observer should walk between points, recording each additional occurrence of an SGCN or state-listed species seen or heard between points. When appropriate, playback techniques should be used to enhance detection of the following rare or cryptic species: golden-winged warbler, loggerhead shrike, cerulean warbler, Bewick's wren, Henslow's sparrow, and Bachman's sparrow. Through the combined point counts and routes walked between points, the surveys should cover the entire area of suitable breeding habitat for the target species within the disturbance zone.</i></p> <p><i>b. For projects located within the CAPZ, a breeding bird survey should be conducted if the applicant chooses to perform avian field studies in lieu of relying on existing scientific analysis, or if indicated by the CAPZ provisions. The guidance provided below addresses basic survey techniques and protocols for particular species or habitats, but site- and species-specific protocols are warranted for breeding surveys of these extremely sensitive coastal resources.</i></p> <p><i>i. In forested or grassland habitats, point counts should be conducted in the habitats that are likely to support the target species, at least three times between approximately May 1 and June 15, on dates at least 14 days apart. Points should be placed 250-500 meters apart within the appropriate habitats for the target species, throughout the disturbance zone. At least one point should be established per turbine and, to the extent</i></p>

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	<p><i>possible, the points should be located at the planned locations of the turbines. All point counts should be conducted between sunrise and 10:00 a.m. for a period of 5 minutes at each point. Each count should be subdivided into an initial 3-minute count and a subsequent 2-minute count. All birds observed during the 5-minute counts should be recorded. The observer should walk between points, recording each additional occurrence of an SGCN or state-listed species seen or heard between points. Through the combined point counts and routes walked between points, the surveys should cover the entire area of suitable breeding habitat for the target species within the disturbance zone.</i></p> <p><i>ii. In marsh habitats, playback techniques should be used to enhance detection of secretive breeding marshbirds (i.e., black rails, king rails, and American bitterns). Where appropriate, saltmarsh sharp-tailed sparrows may be included in these surveys; however, because singing males are highly detectable, playback for this species is not necessary. Instead, the total number of singing or observed saltmarsh sharp-tailed sparrows should be recorded, along with vocalizing or observed rails and bitterns, during the 8-minute passive listening and playback periods. These marshbird surveys should be conducted three times between approximately April 15 and May 31. One survey should be conducted during each of the following three (approximate) survey windows: April 15 – April 30; May 1 – May 14; and May 15 – May 31. These surveys should begin 30 minutes before sunrise and extend no later than 2.5 hours after sunrise. Points should be placed at least 400 meters apart (approximate density of one point per 16 hectares) within the appropriate habitats for the target species throughout the disturbance zone.</i></p> <p><i>iii. If the disturbance zone encompasses marshes that may support breeding American oystercatchers, colonial nesting seabirds</i></p>

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	<p><i>(gull-billed tern, royal terns, and black skimmers), and/or colonial nesting wading birds (i.e., little blue herons), three ground surveys should be conducted between approximately May 1 and June 15, at least 14 days apart.</i></p> <p>iv. <i>If American black ducks are suspected of nesting in the marsh to be surveyed, DGIF suggests that the applicant coordinate with DGIF to determine the appropriate protocol and need for nest surveys.</i></p> <p>v. <i>For projects directly adjacent to the Atlantic Ocean shoreline where the disturbance zone encompasses habitats that may support target shorebird species (i.e., piping plovers, Wilson’s plovers, and American oystercatchers), colonial nesting seabirds (i.e., gull-billed terns, least terns, royal terns, and black skimmers) or colonial nesting wading birds (i.e., little blue herons), ground surveys should be conducted three times between approximately May 1 and June 15 at least 14 days apart.</i></p>
<p>3. Field survey of nonavian resources. If the desktop analyses prescribed in subdivision 1 of this subsection indicate the presence of or habitat for a Tier 1 or Tier 2 vertebrate SGCN, other than a bird, within the disturbance zone, then the applicant shall conduct field surveys of suitable habitats for that species within the disturbance zone to determine the species' occurrence and relative distribution within the disturbance zone.</p>	<p>Field Survey of Nonavian Resources</p> <p><i>Due to the wide range of species and habitats under consideration, it is difficult to develop detailed survey protocols for non-avian wildlife for this PBR Guidance. Below are some standard guidelines for frogs and toads, and categorization of other reptiles and amphibians, as recommended by DGIF. In virtually all cases except for bird and frog/toad call surveys (where the animals are not physically handled in any way), DGIF advised that the applicant or consultant would have to secure a Scientific Collection Permit or a Threatened and Endangered Species Permit from DGIF before conducting the surveys.</i></p> <p>Reptile and Amphibian Surveys</p> <p>a. <i>Tier I and Tier II frogs and toads (i.e., Oak toad, barking treefrog, and</i></p>

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	<p><i>mountain chorus frog): Frog and toad calling surveys should be conducted in low-lying, wet areas from at least one established listening station within the disturbance zone (if the disturbance zone encompasses suitable wet habitats that are $\geq 1\text{mi}^2$, additional listening stations should be established that are at least 0.5 mi apart to ensure coverage of all suitable habitat). For proposed wind energy projects on the coastal plain or in the Piedmont, nocturnal toad and frog calling surveys should be conducted once during each of the following three (approximate) survey windows: February 16 – March 17; April 20 – May 19; and June 15 – July 14. For proposed wind energy projects in the mountains, toad and frog calling surveys should be conducted once during each of the following three (approximate) survey windows: March 14 – April 15, May 1 – May 31, and June 15 – July 14. Surveys should begin 30 minutes after sunset or later. No matter what time a route is started, it should be completed by 1:00 a.m. The following appropriate sampling conditions should be met: (a) <u>wind</u> - should not exceed 12 mph (gentle breeze that moves twigs and leaves around and extends small flags); (b) <u>sky</u> - surveys should not be conducted during heavy rainfall; light rainfall is acceptable if it does not impair hearing; (c) <u>air temperature</u> - minimum allowable temperatures vary for each sampling period; (d) <u>rainfall</u> - rain during or within 3 days of survey or on humid nights.</i></p> <p>b. <i>Certain other species (i.e., Tier I and Tier II salamanders, Tier I and Tier II turtles, Tier I and Tier II snakes, Eastern Glass lizard, nesting sea turtles), when agency consultation indicates that their presence is likely and a survey is necessary.</i></p>
<p>4. Raptor migration surveys. The applicant shall conduct one year of raptor migration surveys, in both the spring and fall seasons, to determine the relative abundance of migrant raptors moving through the general vicinity of the disturbance zone.</p>	<p>Raptor Migration Surveys</p> <p><i>The survey period should be based on existing information from established hawk migration sites in Virginia and/or adjacent states and should correspond with the period when the peak number of migrant hawks would be expected to move through the area.</i></p>

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	<p><i>For projects within the CAPZ, raptor migration surveys should only be required if indicated in the CAPZ provisions of 9 VAC 15-40-40 A 5 (or, if the applicant chooses to perform avian field studies in lieu of relying on existing scientific analysis). When raptor migration surveys are performed for projects located inside the CAPZ, they should be conducted at least one day each week from approximately September 1 through November 30 (fall).</i></p> <p><i>For projects located outside of the CAPZ, raptor migration surveys should be conducted at least one day each week from approximately March 1 through May 31 (spring) and September 1 through December 31 (fall). One survey station per ridgeline should be established within the disturbance zone that provides good visibility over long distances along the primary ridgeline or area of interest.</i></p> <p>a. <i>To the extent possible, surveys should be conducted on days when weather conditions are conducive to hawk migration (e.g., warm, clear, high pressure conditions). The survey period each day should be at least six hours from approximately 10:00 a.m. to 4:00 p.m. Observers should watch for migrant raptors continuously during the six-hour survey period. The date, start, and end time of observation period, species or best possible identification of all raptors seen during each survey period, estimated number of individuals, height above ground, and activity should be recorded. Weather information recorded for each survey day should include temperature, wind speed, precipitation, wind direction and cloud cover.</i></p> <p>b. <i>Data should be compiled by survey day, and concurrent data from established hawk watch sites should be solicited from reliable available sources for comparison.</i></p>
<p>5. Map and field studies for avian resources in Coastal Avian Protection Zones (CAPZ).</p> <p>a. The applicant shall consult the "Coastal Avian Protection Zones" map generated on the</p>	<p>Coastal Avian Protection Zones (CAPZ)</p> <p><i>The CAPZ map is part of the Wind PBR regulation, while the narrative associated with the map is Guidance. Both the CAPZ map and the narrative are posted on the Coastal GEMS website. The CAPZ map is</i></p>

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<p>department's Coastal GEMS geospatial data system (9VAC15-40-120 C 1) and determine whether the proposed wind energy project site will be located in part or in whole within one or more CAPZ.</p> <p>b. When a proposed wind energy project site will be located in part or in whole within one or more Coastal Avian Protection Zones, then the applicant shall perform avian field studies, or shall rely on existing scientific analysis as reflected on the CAPZ map, for each zone where the project is located, as follows (list abbreviated herein; <u>see</u> Coastal GEMS or http://lis.virginia.gov/000/reg/TOC09015.HTM#C0040 for complete regulatory language) :</p> <p>(1) Zone 1: Nearshore waters extending 1 - 4.83 km (0.62 - 3 mi) from Virginia's ocean-facing shoreline, excluding the mouth of the Chesapeake Bay. (2) Zone 2: Nearshore waters that extend from Virginia's ocean-facing shoreline out to 1 km (0.62 mi), excluding the mouth of the Chesapeake Bay. (3) Zone 3: Barrier island/seaside lagoon system, including a 100 m (328 ft) offshore buffer. (4) Zone 4: Southern end of the Delmarva Peninsula (mainland only), including a 10 km long (6.21 mi) strip along the western (bayside) fringe of the peninsula that extends from Wise Point to (and including) Savage Neck. (5) Zone 5: Delmarva Peninsula, excluding zones 3 and 4. (6) Zone 6: Southern end and mouth of the Chesapeake Bay, including the waters off of the western shore of the Delmarva Peninsula that</p>	<p><i>an interactive GIS tool that enables an applicant to determine in which zone(s) his proposed project is located. The interactive features can only be accessed through the Coastal GEMS website. A PDF version of the CAPZ map is attached to this Guidance document for general informational purposes only.</i></p> <p><i>The CAPZ narrative reiterates the geographic areas and relevant avian resources for each zone. In some cases, the information is identical to the regulatory language; in others, additional clarifying information is provided. Where relevant, the narrative provides mitigation triggers, actions, survey methods, and similar. The narrative also provides a bibliography of existing scientific data, research studies, and other existing scientific analyses for each zone. DEQ expects to update the CAPZ narrative on the Coastal GEMS website if and as new information becomes available.</i></p> <p><i>Note that Guidance provisions relating to mitigation for projects located in CAPZ are contained in this Guidance document, and not on Coastal GEMS.</i></p>

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<p>extend from Wise Point north to the mouth of Craddock Creek. (7) Zone 7: Lower portions of the James, York, and Rappahannock Rivers and small tributaries along the south side of the lower Potomac River. (8) Zone 8: Western portions of the Chesapeake Bay. (9) Zone 9: Virginia's northeast sector of the Chesapeake Bay, including all nearshore waters, marshes, and islands within Tangier and Pocomoke Sounds and all islands and marshes located along the western fringe of the Delmarva Peninsula from Craddock Creek north to the Virginia/Maryland border. (10) Zone 10: Upper reaches of the James, Rappahannock, and Potomac Rivers. (11) Zone 11: Lower reaches of the Mattaponi and Pamunkey tributaries. (12) Zone 12: Outer fringes of the lower, middle, and northern peninsulas. (13) Zone 13: Interior portions of the lower, middle, and northern peninsulas. (14) Zone 14: Back Bay and surrounding private lands.</p>	
<p>6. Bat acoustic surveys. The applicant shall conduct bat acoustic surveys to determine the presence of and level of bat activity and use within the disturbance zone.</p>	<p>Bat Acoustic Surveys</p> <p><i>The applicant should provide a report of bat acoustic surveys conducted to determine the presence of and level of bat activity and use within the proposed disturbance zone.</i></p> <p><i>Bats should be surveyed within the proposed disturbance zone using currently available acoustic detectors (e.g., AnaBat® or accessible equivalent). It is recommended that the applicant use a pulley-mounted system, or employ a suitable alternative, in conjunction with a meteorological tower to install the acoustical detectors to maximize the reliability/maintainability of the equipment and data.</i></p> <p><i>a. Bat acoustic sampling should occur from approximately April 1 through October 31. For purposes of this survey, the seasons</i></p>

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	<p><i>should be spring – approximately April 1 through June 15; summer – approximately June 16 through July 31; and fall – approximately August 1 October 31. Bats should be surveyed within the proposed disturbance zone using currently available acoustic detectors (e.g., AnaBat® or accessible equivalent). A minimum of two acoustic detectors per ridgeline or per met tower should be used during the study. The ground-based acoustic detector should be tilted toward the sky to maximize the height at which bat calls will be detected. [Note: in practice, the microphone is typically pointed down at a reflector which is aimed toward the sky; this arrangement (and placement of the microphone in a PVC pipe) protects the microphone from the elements, while facilitating “skyward” detection of bat calls bouncing off of the reflector.] The second acoustic detector should be established at a minimum height of 30 m above ground level, or the highest practicable height that allows sampling within the proposed turbine rotor-swept-area. A high microphone system should be connected to this second unit. All acoustic units should sample concurrently.</i></p> <p><i>b. The applicant should take all reasonable measures to ensure that each detector achieves a data collection success rate of at least 50% per season within each surveying period. In pursuit of this objective, the applicant is encouraged to use a pulley-mounted system or a suitable alternative to install the acoustical detectors, to facilitate periodic maintenance, repair, and retrieval of the equipment and data. If a data collection success rate of at least 50% per season is not achieved, and the desktop evaluations documented known or likely use of the site by bats, then significant bat use within the disturbance zone should be assumed. In addition to the index of overall bat activity within the disturbance zone, a relative index of activity by species or species group should also be determined. Bat calls should be identified to species when possible or to species group if call quality does not allow for positive species identifications. Calls should be identified through visual or statistical (e.g., discriminant function) analysis by comparing metrics (e.g.,</i></p>

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	<p><i>minimum frequency, slope, duration) to reference calls of known bats.</i></p>
<p>7. Mist-netting or harp-trapping surveys. If the applicant identifies potential for T&E bat species to occur within the disturbance zone, the applicant shall conduct a season-appropriate mist-netting survey or harp-trapping survey or both.</p>	<p><i>Mist-Netting, Harp-Trapping, or Mist-Netting and Harp-Trapping Study</i></p> <p><i>If the applicant, DGIF Wildlife Report, or Natural Heritage Resources Report identifies potential for state-listed bats to occur within the disturbance zone through observation or documented occurrence of a listed species of bat, roosting areas, bat hibernacula, or potential habitat for state-listed bats, the applicant should conduct a summer mist-netting, harp-trapping, or mist-netting and harp-trapping survey for bats on the site. DGIF indicates that these surveys will require a Threatened and Endangered Species research permit from DGIF.</i></p> <ol style="list-style-type: none"> <i>a. The survey methods generally should follow the applicable state or federal guidelines (e.g., the U.S. Fish and Wildlife Service guidelines for mist-netting surveys in the Indiana Bat Recovery Plan).</i> <i>b. For all bats captured, standard data such as species, sex, age, reproductive condition, and other notes should be recorded. For every state-listed bat captured, a radio transmitter should be attached for radio telemetry. The radio telemetry survey should consist of tracking each tagged bat for the duration of the transmitter (typically about two weeks) to determine nightly movements and locations of roost trees used by each tagged bat. Each roost tree located should be mapped and identified to species. Approximate age, size, condition, and GPS location of each roost tree should be recorded. Exit counts at sunset should be made at each roost tree located, if possible.</i>
<p>8. Wildlife report. The applicant shall provide to the department a report summarizing the relevant findings of the desktop and field surveys conducted pursuant to subdivisions 1 through 7 of this subsection, along</p>	<p><i>Wildlife Report</i></p> <p><i>The applicant should provide to DEQ a report summarizing the relevant findings of the desktop and field surveys conducted pursuant to 1-7</i></p>

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<p>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 resources identified in subdivisions 1 through 7 of this subsection.</p>	<p><i>above. Concurrently with submission of the wildlife and natural resources report, all wildlife observation and collection data developed and recorded pursuant to development of the report should be submitted electronically to DEQ.</i></p>
<p>B. Historic Resources</p> <p>To fulfill the requirements of §10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct a pre-construction 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 (9 VAC 15-40-120 B 2) in the appropriate discipline. The analysis shall include each of the following:</p>	<p><i>These regulations require that a DOI-qualified person perform the specified historic resources analyses, in conformance with DHR's guidelines. The general approach is for the applicant/DOI-qualified person to perform analyses within tiered study areas, including desktop and field investigations. Results of all studies will be reported to DEQ, along with the applicant's analysis of beneficial and adverse impacts of the proposed project on relevant historic resources.</i></p> <p>Sensitive Information (historic resources) and FOIA</p> <p><i>It is important to note that the locations of and specific information regarding archaeological sites are considered sensitive and may be exempt from the Virginia Freedom of Information Act (see http://www.dhr.virginia.gov/pdf_files/FOIAPolicyDHR.pdf and Section I of this Guidance).</i></p>
<p>1. Compilation of known historic resources. The applicant shall gather information on known historic resources within the disturbance zone and within five miles of the disturbance zone boundary and present this information on the context map referenced in 9VAC15-40-70 B, or as an overlay to this context map, as well as in tabular format.</p>	<p>Compilation of Known Historic Resources</p> <p><i>The Archives at the Department of Historic Resources serve as the primary repository of data on known historic resources. These data may be obtained in person at DHR's main office at 2801 Kensington Avenue, Richmond, VA, through DHR's subscription-based Data Sharing System, or by request through DHR's fee-based Archives Search Service. More information can be found on DHR's website at http://www.dhr.virginia.gov/archives/archiv_info.htm.</i></p> <p><i>Secondary data repositories that should be checked include local planning offices and historical societies.</i></p>

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	<p><i>Areas and properties that can be demonstrated through topographic or similar analyses to have no view to the project can be excluded from this study.</i></p> <p>Shelf life: <i>The data submitted in compliance with this section should be current within one year of the submission date.</i></p>
<p>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 1.5 miles of the disturbance zone boundary and evaluate the eligibility of any identified resource for listing in the VLR; however, for wind energy projects located in nearshore waters, this field study shall include all architectural resources 50 years of age or older within five miles of the disturbance zone boundary, but shall not extend more than 1.5 miles inland from the mean low water mark.</p>	<p>Architectural Survey</p> <p><i>All studies should be completed in accordance with the appropriate DHR guidelines for conducting cultural resource surveys. See GUIDELINES FOR CONDUCTING HISTORIC RESOURCES SURVEY IN VIRGINIA (October 2011), which can be found at: http://www.dhr.virginia.gov/pdf_files/Survey%20Manual-RevOct.2011Final.pdf.</i></p> <p><i>Areas and properties that can be demonstrated through topographic or similar analyses to have no view to the project can be excluded from this study.</i></p> <p>Shelf life: <i>The data submitted in compliance with this section should be current within seven years of the submission date.</i></p>
<p>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; however, the requirements of this subdivision shall not apply to any portion of the disturbance zone located on state-owned submerged lands that are subject to VMRC permitting pursuant to Title 28.2 of the Code of Virginia.</p>	<p>Archaeological Survey</p> <p><i>All studies should be completed in accordance with the applicable DHR guidelines for conducting archaeological investigations. See GUIDELINES FOR CONDUCTING HISTORIC RESOURCES SURVEY IN VIRGINIA (October 2011), which can be found at http://www.dhr.virginia.gov/pdf_files/Survey%20Manual-RevOct.2011Final.pdf.</i></p> <p>Shelf life: <i>The data submitted in compliance with this section may be gathered at any time prior to submission.</i></p>
<p>4. Historic resources report. The applicant shall</p>	<p>Historic Resources Report</p>

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<p>provide to the department a report presenting the findings of the studies and analyses conducted pursuant to subdivisions 1 through 3 of this subsection 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 historic resources identified in subdivisions 1, 2, and 3 of this subsection.</p>	<p><i>Both direct and indirect (viewshed) impacts should be assessed. Indirect impacts should be evaluated in accordance with DHR guidance for assessing visual effects on historic properties.</i></p>
<p>C. Other Natural Resources</p> <p>To fulfill the requirements of §10.1-1197.6 B 7 of the Code of Virginia, the applicant shall also conduct pre-construction analyses of the impact of the proposed project on other natural resources, which have not been addressed pursuant to subsection A or B of this section, and as are specified in subdivisions 1 and 2 of this subsection. The analyses shall include:</p>	
<p>1. Natural heritage resources. An analysis of the impact of the project on natural heritage resources, which shall include the following:</p> <ul style="list-style-type: none"> a. A desktop survey of natural heritage resources within the site and within two miles of the boundary of the site. b. Field surveys within the disturbance zone mapping: (i) the ecological community groups as classified in accordance with DCR's The Natural Communities of Virginia, Classification of Ecological Community Groups (9VAC15-40-120 B 4); (ii) natural heritage resources to include species and community identification, location, age, size, spatial distribution, and evidence of reproduction; (iii) caves; (iv) mines; (v) rock 	<p>Natural Heritage Resources</p> <p><i>The definition of “natural heritage resources” is pursuant to §10.1-209 of the Code of Virginia. Current lists of natural heritage resources can be found on DCR’s web site at http://www.dcr.virginia.gov/natural_heritage/infoservices.shtml#lists.</i></p> <p><i>Ecological Community Group definitions and descriptions, along with methods, can be found on the Department of Conservation and Recreation’s website at: http://www.dcr.virginia.gov/natural_heritage/nchome.shtml.</i></p> <p><i>A list of natural heritage resource animal and plant species can be found at https://vanhde.org.</i></p> <p><i>For desktop surveys, natural heritage resource and state threatened and</i></p>

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<p>outcrops; (vi) cliffs; (vii) wetlands; and (viii) invasive plant species.</p>	<p><i>endangered species information can be found by contacting the Department of Conservation and Recreation, Natural Heritage Program at 804-371-2708, or directly on-line at Natural Heritage Data Explorer https://vanhde.org via a data subscription agreement: http://www.dcr.virginia.gov/forms/DCR199-005.pdf.</i></p> <p><i>A list of invasive plant species is found at http://www.dcr.virginia.gov/natural_heritage/documents/invlist.pdf.</i></p> <p><i>For natural heritage resources, the applicant is encouraged to take all reasonable measures to avoid adverse impacts. Where impacts are identified, the applicant is encouraged to take action to mitigate or reduce such impacts or to explain why such impacts could not be avoided. Where appropriate, DEQ may approve mitigation of likely significant adverse impacts on natural heritage resources as part of a required wildlife mitigation plan.</i></p>
<p>2. Scenic resources. An analysis of the impact of the project on scenic resources, as follows:</p> <p>a. Pursuant to 9VAC15-40-70, for the area within the site and within five miles of the boundary of the site, a viewshed analysis of the impact of the proposed project on existing federally designated or state-designated scenic resources, including national parks, national forest-designated scenic areas, state parks, state natural area preserves, national scenic trails, national or state-designated scenic roads, national or state-designated scenic rivers, and those resources identified as potential candidates for such designation in DCR's Virginia Outdoors Plan (9VAC15-40-120 B 5).</p> <p>b. The applicant shall conduct these analyses and</p>	<p>Scenic Resources</p> <p><i>The viewshed analysis should be conducted by a qualified professional meeting the professional qualification standards of a registered landscape architect, as defined by Virginia's Department of Professional and Occupational Regulation, with experience in industry-standard visual assessments, or by a qualified professional whom the applicant can show has comparable credentials.</i></p> <p><i>"Potential candidates for such designation" means those identified as potential candidates in the current Virginia Outdoors Plan, or as identified by the locality.</i></p> <p><i>Designated and potential scenic resources to be included in the five mile survey area can be found on the regional maps contained in the current version of the Virginia Outdoors Plan, which is available online at http://www.dcr.virginia.gov/recreational_planning/vop.shtml.</i></p> <p><i>Likewise, Virginia's designated scenic rivers can be found at</i></p>

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<p>shall show the potential impact of the proposed project on the viewshed from such identified resources, where applicable.</p>	<p>http://www.dcr.virginia.gov/recreational_planning/srmain.shtml.</p> <p><i>In addition, the Virginia Department of Transportation maintains a “Map of Scenic Roads in Virginia” that shows the location of all designated scenic byways which is available online at http://www.virginiadot.org/programs/prog-byways.asp.</i></p> <p><i>Further information on the location of important protected land resources can be obtained from the Department of Conservation and Recreation’s Conservation Lands Data Base, which can be accessed on line at http://www.dcr.virginia.gov/natural_heritage/clinfo.shtml.</i></p> <p><i>Once key scenic resources, whose viewshed would potentially be affected by the proposed wind project, are identified, an appropriate viewshed impact analysis tool should be applied. Where impacts are identified, the applicant is encouraged to take action to mitigate or reduce such impacts or to explain why such impacts could not be avoided.</i></p>
<p>3. Other natural resources report. The applicant shall provide to the department a report, including maps, documenting the results of the analyses conducted pursuant to subdivisions 1 and 2 of this subsection. The applicant shall assess and describe the expected beneficial and adverse impacts, if any, of the proposed project on natural resources identified in subdivisions 1 and 2 of this subsection.</p>	<p><i>Other Natural Resources Report</i></p> <p><i>The report should include all natural heritage resource observation and collection data.</i></p> <p><i>The report should include the five-mile scenic resources survey and analysis.</i></p>

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<p>50. Determination of Likely Significant Adverse Impact</p> <p>A. Wildlife</p> <p>(an abbreviated list follows; details may be found in the regulation itself)</p> <ol style="list-style-type: none"> 1. Bats 2. State-listed T&E; and sea turtle nesting 3. Avian Resources in CAPZ <p>B. Historic Resources</p> <p>The department shall find that significant adverse impacts to historic resources are likely whenever the historic resources analyses prescribed by 9VAC15-40-40 B indicate that the proposed project is likely to diminish significantly any aspect of a historic resource's integrity.</p>	<p><i>Significant adverse impacts are such that the project will alter, directly or indirectly, any of the characteristics of an historic resource in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Definitions of these aspects of integrity can be found at 17 VAC 5-30-50.</i></p>
<p>60. Mitigation Plan</p> <p>A. General</p> <p>If the department determines that significant adverse impacts to wildlife or historic resources or both are likely, then the applicant shall prepare a mitigation plan. The mitigation plan shall include a description of the affected wildlife or historic resources, or both, and the impact to be mitigated; a description of actions that will be taken to avoid the stated impact; and a plan for implementation. If the impact cannot reasonably be avoided, the plan shall include a description of actions that will be taken to minimize the stated impact and a plan for implementation. If neither avoidance nor minimization is reasonably practicable, the plan shall include a description of other measures that may be taken to offset the stated</p>	<p><i>This regulation does not mandate a mitigation plan for impacts to SGCN or to natural heritage resources. The applicant is required, however, to perform pre-construction surveys and analyses for both (see 9 VAC 15-40-40 C). This provision makes clear that the applicant may voluntarily opt to propose best practices to mitigate for Tier 1 & 2 SGCN, natural heritage resources, or any other resource analyzed pursuant to 9 VAC 15-40-40 A or C, when he cannot fully avoid impacts to T&E species <u>per se</u>.</i></p>

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<p>impact; and a plan for implementation.</p> <p>B. Wildlife</p> <p>Mitigation measures for significant adverse impacts to wildlife shall include:</p> <ol style="list-style-type: none"> 1. For state-listed T&E wildlife, the applicant shall take all reasonable measures to avoid significant adverse impacts, or shall demonstrate in the mitigation plan what significant adverse impacts cannot practicably be avoided and why additional proposed actions are reasonable. These additional proposed actions may include best practices to avoid, minimize, or offset adverse impacts to resources analyzed pursuant to 9VAC15-40-40 A or 9VAC15-40-40 C 1. 2. For proposed projects where the disturbance zone is located on or within one mile of a known or potential sea turtle nesting beach, the applicant shall take all reasonable measures to avoid significant adverse impacts, or shall demonstrate in the mitigation plan what significant adverse impacts cannot practicably be avoided and why additional proposed mitigation actions are reasonable. Mitigation measures shall include the following: <ol style="list-style-type: none"> a. Avoiding construction within likely sea turtle crawl or nesting habitats during the turtle nesting and hatching season (May 20 - October 31). If avoiding construction during this period is not possible, then conducting daily crawl surveys of the disturbance zone (May 20 - August 31) and one mile beyond the northern and southern reaches of the disturbance zone (hereinafter "sea turtle nest survey zone") between sunrise and 9 a.m. by qualified individuals who have the ability to 	

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<p>distinguish accurately between nesting and non-nesting emergences.</p> <p>b. If construction is scheduled during the nesting season, then including measures to protect nests and hatchlings found within the sea turtle nest survey zone.</p> <p>c. Minimizing nighttime construction during the nesting season and designing project lighting during the construction and operational phases to minimize impacts on nesting sea turtles and hatchlings,</p>	
<p>3. For avian resources within any of the Coastal Avian Protection Zones that are referenced in 9VAC15-40-40 A 5, the applicant shall take all reasonable measures to avoid significant adverse impacts, or shall demonstrate in the mitigation plan what significant adverse impacts cannot be practicably be avoided and why additional proposed mitigation actions are reasonable.</p>	<p><i>Avian Mitigation Measures</i></p> <p><i>Avian mitigation measures in CAPZ may include, but are not limited to, the following:</i></p> <ul style="list-style-type: none"> <i>a. Micro-siting adjustments (adjusting turbine locations within the disturbance zone);</i> <i>b. Seasonal restrictions or conditions regarding land clearing, construction, or maintenance activities to protect nesting birds;</i> <i>c. Logistical or financial support of scientific research investigating the efficacy and cost-effectiveness of project design, construction or operational mitigation strategies (such as curtailment on a temporal or meteorological basis to coincide with peak bird movement/migration across the disturbance zone) to reduce project impacts on birds and their essential coastal habitats;</i> <i>d. A contribution to a fund designated for bird habitat protection and management within the Coastal Avian Protection Zone; or</i> <i>e. Any combination of items (a) through (d) of this subsection.</i>

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	<p><i>Those zones identified as having international importance to birds should be afforded greater protection in terms of mitigation actions to avoid, minimize, or offset impacts. The process for distributing CAPZ funds generated by wind projects in CAPZ is appended as a white paper of the same name to this Guidance.</i></p> <p><i>Payment of contributions toward research or habitat protection should be addressed as follows:</i></p> <p><i>Department of Environmental Quality</i></p> <p><i>Receipts Control</i></p> <p><i>P. O. Box 1104</i></p> <p><i>Richmond, Virginia 23218</i></p> <p><i>Applicants should check with DEQ staff regarding the appropriate project/fund coding that should be entered on their checks to ensure proper crediting of payments.</i></p>
<p>4. For bats, the mitigation plan shall include measures to curtail operation of wind turbines on low wind speed nights when bats are likely to be active within the disturbance zone and to monitor the efficacy of these measures; however, the combined cost of mitigation and post-construction monitoring, in each year after year one, shall not exceed 120 hours of curtailment per year per turbine, averaged. The combined cost of mitigation shall consist of lost revenue from curtailment of wind turbines, including lost production tax credits.</p>	<p><i><u>Year One:</u> The regulatory provisions reflect that the applicant will do extensive monitoring during the first year of operation, in order to inform development/refinement of an effective mitigation plan based on adaptive management, including which patterns of curtailment are most effective for minimizing bat fatalities. The applicant is expected to do all reasonable and necessary monitoring during the first year of operation, as required by the mitigation plan approved by the department (which includes, by statute, post-construction monitoring to measure the effectiveness of the mitigation plan). The financial cap does not begin until the second year of operation.</i></p> <p><i><u>Year Two and Following:</u> After the first year of operations, the total annual cost of wildlife mitigation and post-construction monitoring will be capped at the equivalent (adjusted over time) of 120 hours/turbine/year of curtailment. This figure is deemed to be a proxy for the reasonable</i></p>

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	<p><i>standard of mitigation that balances the statutory goals of protecting natural resources and promoting renewable energy. An illustration for calculating the financial cap is provided below.</i></p> <p><i>The regulation contemplates that, within three years of mitigation and monitoring, the operator will have established an effective curtailment strategy, or will have ascertained that curtailment (or curtailment alone) is not the most effective mitigation strategy. If he needs to amend his original mitigation plan in view of this experience, the regulation allows him to submit an amendment for DEQ's consideration (without payment of an additional fee). This approach is designed to foster "adaptive management," in which the operator adapts his mitigation strategy according to what measures are shown by post-construction monitoring to work most effectively.</i></p> <p>Calculation of the Financial Cap (in Year Two and following) is illustrated as follows:</p> <table border="1" data-bbox="989 800 1864 1382"> <thead> <tr> <th></th> <th><u>Average</u></th> </tr> </thead> <tbody> <tr> <td>(A) Current Cap on Curtailment & Monitoring/turbine/year (consensus of RAP)</td> <td>\$5,000 per turbine per year</td> </tr> <tr> <td>(B) Average annual wholesale revenue per megawatt-hour*</td> <td>\$70/MW</td> </tr> <tr> <td>(C) Average nameplate capacity per turbine**</td> <td>2 MW</td> </tr> <tr> <td>(D) Estimated capacity factor at low wind speed nights where curtailment is expected to occur***</td> <td>30%</td> </tr> <tr> <td>Total Hours of Curtailment per Turbine per Year for Curtailment & Monitoring:</td> <td>119 hours =A/B/C/D Rounded to 120****</td> </tr> </tbody> </table>		<u>Average</u>	(A) Current Cap on Curtailment & Monitoring/turbine/year (consensus of RAP)	\$5,000 per turbine per year	(B) Average annual wholesale revenue per megawatt-hour*	\$70/MW	(C) Average nameplate capacity per turbine**	2 MW	(D) Estimated capacity factor at low wind speed nights where curtailment is expected to occur***	30%	Total Hours of Curtailment per Turbine per Year for Curtailment & Monitoring:	119 hours =A/B/C/D Rounded to 120****
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	<p><i>*The \$70/MW does not include the production tax credit in its value (worth about \$22/MW in 2009-10 when the RAP was discussing this calculation), and is only representative of the unit revenue a typical wind farm owner would be paid by an offtaker. Excluding the value of the production tax credit in the revenue value would lead to a higher number of curtailment hours per turbine per year. Although industry representatives on the RAP believed they were entitled to claim the production tax credit, they agreed during RAP deliberations to refrain from adding this value to the calculation and were willing to accept the higher number of curtailment hours.</i></p> <p><i>**In 2009-10, wind turbine offerings generally ranged from 1.5 MW to 3.0 MW.</i></p> <p><i>***Members of the RAP discussed different figures for the capacity factor. The 30% capacity factor was agreed on by consensus of original Wind RAP members and conformed with data collected in Virginia in the 2009-10 time frame (i.e., 37%) and reported to the department by industry representatives on the RAP.</i></p> <p><i>****The regulation describes the cap in terms of hours of curtailment, but rounds the number from 119 to 120. DEQ believed that a number like 119 might give the impression of a higher degree of precision than actually exists.</i></p>
<p>5. Post-construction monitoring shall be designed to achieve the following:</p> <ul style="list-style-type: none"> a. Estimate the level of avian and bat fatalities associated with the wind energy project, accounting for scavenger removal and searcher efficiency; however, estimates of avian and bat fatalities shall not be required for areas seaward of the mean low-water shoreline. 	<p>Post-Construction Monitoring</p> <p><i>Effective means for evaluating bird and bat fatalities over water do not exist and/or are not commercially available at the present time.</i></p>

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<p>b. Investigate the correlation of bat fatalities with project operational protocols, weather-related variables, and the effectiveness of operational adjustments to reduce impacts.</p>	<p><i>Post-construction monitoring should be designed to achieve the following two primary objectives:</i></p> <ul style="list-style-type: none"> • <i>Estimate the level of avian and bat mortality associated with the wind project.</i> • <i>Determine the treatment regime that allocates costs or revenue losses per turbine/year to maximize reduction in bat or avian mortality.</i> <p><i>The post-construction monitoring study should consist of the following components:</i></p> <ul style="list-style-type: none"> • <i>A study designed for the first year after a project is operational that assesses avian and bat mortality through standardized carcass searches, carcass removal trials, and searcher efficiency trials, conducted from approximately April 1 to October 31;</i> • <i>A study designed to investigate the correlation of bat fatalities with project operational protocols, weather-related variables, and the effectiveness of operational adjustments to reduce impacts;</i> • <i>Raptor fatality surveys at a subset of turbines from approximately December 1 through March 31, performed weekly or at a lesser frequency, as determined in consultation with the Department.</i> <p><i>1. <u>Avian and Bat Mortality Study</u></i></p> <p><i>Impacts to bats are expected to occur during the active season between approximately April and November. Information presented to the Wind RAP indicated that the majority of bat fatalities at wind-energy facilities have occurred during the late summer and fall migration period. The methods for the fatality study are broken into three primary components: (1) standardized carcass searches, (2) searcher efficiency trials, and (3) carcass removal trials.</i></p> <p><i>The number of avian and bat fatalities should be estimated based on the number of avian and bat fatalities found in search plots around turbines</i></p>

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	<p><i>and whose death appears related to presence or operation of wind turbines. All carcasses located within areas surveyed, regardless of species, should be recorded and a cause of death determined, if possible, based on field inspection of the carcass. Total number of avian and bat carcasses should be estimated by adjusting for removal bias (e.g., scavenging), searcher efficiency bias, and sampling effort. Carcasses where the cause of death is not apparent should be included in the fatality estimate.</i></p> <p><i>a. <u>Selection of turbines to be sampled</u></i></p> <p><i>For wind projects with fewer than or equal to 20 turbines, 50% of the turbines, rounded up to the nearest whole number, should be selected for inclusion in the study. For wind projects with more than 20 turbines, 30% of the turbines, rounded up to the nearest whole number, should be selected for inclusion in the study. The sample of turbines should be selected to provide even coverage of the entire project.</i></p> <p><i>For a nine week period from approximately July 25th thru September 25th, an additional set of turbines should be selected for inclusion in the study to investigate the correlation of bat fatalities with turbine operation and weather patterns. A minimum of five additional turbines should be selected for each treatment variable chosen for the study.</i></p> <p><i>b. <u>Delineation of carcass search plots</u></i></p> <p><i>Search plots should be established around each sampled turbine and should be delineated in the field and with a GPS for detailed habitat mapping. For most projects, it is likely that search plot size will be variable and dependent on the area around the turbine that is clear of vegetation. Given the difficulty in finding birds and bats within thick shrub cover or forested areas, the search area should be limited to the cleared areas, and these areas should be maintained as clear as well as possible to facilitate the searches. Efforts should be made to maximize the search plots, such as extending plots along the roads, but searches need not be conducted in forested areas or areas with steep rocky slopes. Adjustments to the fatality estimates should be made to account</i></p>

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	<p><i>for the unsampled areas (areas beyond the search plot boundaries) using existing information regarding spatial distribution of fatalities within search plots at this project and at other projects. Detailed limits of the search plots for each turbine should be mapped using GPS units and detailed aerial maps/photos of the development as constructed.</i></p> <p><i>During initial study period, periodic vegetation management (i.e., mowing) may be used to facilitate the search effort by maintaining lower vegetation height in the search plots. If needed because vegetation grows too quickly, an increase in mowing frequency of the search plots may be requested. If possible, all mowing activity of search plots should be conducted immediately following a standardized search to minimize potential carcass removal due to mowing.</i></p> <p><i>c. <u>Standardized Carcass Searches</u></i></p> <p><i>Objective: Estimate the number of avian and bat fatalities associated with the wind project.</i></p> <p><i>Personnel trained in proper search techniques should conduct the carcass searches. Carcass search frequency for the 30% of the turbines should be weekly. Transects within search plots should be set approximately 5-6 meters apart in the area to be searched. Searchers (field technicians) should walk at a rate of approximately 45-60 m/min along each transect searching both sides out to 2-3 meters for fatalities. The condition of each carcass found should be recorded using the following condition categories:</i></p> <ul style="list-style-type: none"> <i>• Intact – a carcass that is completely intact, is not badly decomposed, and shows no sign of being fed upon by a predator or scavenger.</i> <i>• Scavenged – an entire carcass, which shows signs of being fed upon by a predator or scavenger, a portion(s) of a carcass in one location (e.g., wings, skeletal remains, legs, pieces of skin, etc.), or a carcass with heavy insect infestation.</i>

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	<ul style="list-style-type: none"> • <i>Spots - 10 or more feathers, or 2 or more primary feathers, or a patch of fur attached to skin at one location indicating predation or scavenging.</i> <p><i>For all fatalities found, data recorded should include: species, sex and age when possible, date and time collected, GPS location, physical condition (e.g., intact, scavenged, spots), estimated time of death, and any comments that may indicate cause of death. All fatalities located should be photographed as found and mapped on a map of the study area showing the location of the wind turbine and associated facilities such as access roads, substations, and buildings. Dominant vegetation cover and visibility index for the carcass location should also be recorded.</i></p> <p><i>d. <u>Searcher Efficiency Trials</u></i></p> <p><i>Objective: To estimate the percent of avian/bat fatalities found by searchers.</i></p> <p><i>Searcher efficiency studies should be conducted in the same areas carcass searches occur and during the entire study period. Searcher efficiency should be estimated by carcass size and visibility class. Estimates of searcher efficiency should be used to adjust the number of carcasses found by correcting for detection bias.</i></p> <p><i>During the study period, carcasses in each size class (small birds, medium to large birds, bats) for each visibility class (easy, moderate, difficult, very difficult) should be used for searcher efficiency trials. To gain the preferred sample sizes without saturating search plots, trials should be conducted throughout the study period and in all weather conditions. During each week of study, approximately 1-2 large carcasses and 2-3 small avian and bat carcasses should be placed randomly throughout the sample of search plots. All carcasses should be placed at pre-determined random locations within areas being searched prior to the carcass search on the same day. Carcasses should be dropped from shoulder or waist height to simulate a falling avian or bat.</i></p>

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	<p><i>Each trial carcass should be discreetly marked so that it can be identified as a study carcass after it is found. The number and location of trial carcasses found during a standardized search should be recorded. The number of carcasses available for detection during each trial should be determined immediately after the trial by the person responsible for distributing the carcasses, and carcasses removed.</i></p> <p><i>e. <u>Carcass Removal Trials</u></i></p> <p><i>Objective: To estimate the length of time avian/bat fatalities remain in the search area.</i></p> <p><i>Carcass removal studies should be conducted throughout the study period. Estimates of carcass removal should be used to adjust the number of carcasses found by correcting for removal bias.</i></p> <p><i>All trial carcasses should be placed within 60 meters of turbines that are not included in the set of sampled turbines. Reducing the number of planted carcasses near turbines minimizes the possibility of increasing scavenging at the turbines due to an additional food source being provided.</i></p> <p><i>During the study period between 50 and 100 carcasses in each size class (small birds, medium to large birds, bats) for each visibility class (easy, moderate, difficult, very difficult) should be used for carcass removal trials. Typically a given trial should consist of a small number of carcasses randomly placed throughout the study areas. To provide a sufficient sample size, carcasses from each size class should be placed in the field and monitored for 14 days. The trials should be spread throughout the study period to incorporate the effects of varying site, scavenger, and weather conditions.</i></p> <p><i>Experimental carcasses should be marked discreetly so that each can be identified as a study carcass. Experimental carcasses should be left</i></p>

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	<p><i>at the location until the end of the trial (14 days), at which time any remaining carcasses or evidence of the carcass (e.g., feather spot) should be removed.</i></p> <p><i>f. <u>Statistical Methods for Estimation of Fatality Rates</u></i></p> <p><i>The estimate of the total number of wind turbine-related fatalities should be based on four components: 1) observed number of carcasses, 2) searcher efficiency expressed as the proportion of trial carcasses found by searchers, 3) removal rates expressed as the length of time a carcass is expected to remain in the study area and be available for detection by the searchers, and 4) the estimated percent of fatalities that likely fell in non-searched areas based on the distribution of observed fatalities and percent of area searched around turbines.</i></p> <p><i>Statistical methods for calculating the average number of observed carcasses, the estimate of searcher efficiency, the estimate of carcass removal, and the estimate of the total number of fatalities should follow current techniques used in similar studies.</i></p> <p><i>Annual fatality estimates for raptors, species of greatest conservation need (SGCN) birds, all birds combined, and bats (if threshold then also sub-groups of bats) should be calculated.</i></p> <p><i>2. <u>Curtailment Study</u></i></p> <p><i>For the additional turbines included in the turbine operation and weather study, the search frequency should be daily.</i></p> <p><i>In addition to the 30% of sample turbines searched to further quantify bat mortality, 12 additional turbines should be systematically selected from turbines available for surveys for implementing initial management actions related to changes in cut-in speeds. During each night, three treatment regimes (i.e., change in cut-in speeds) with four replicates each should be implemented at the study turbines: 1) fully operational, 2) cut-in speed at X.X m/s, 3) cut-in speed at X.X m/s for X hours. Treatments should be randomly assigned to study turbines each week. Nights should be considered the experimental unit and daily searches</i></p>

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	<p><i>should be conducted at the 12 turbines from approximately July 25th to September 25th using methods described above for fatality surveys.</i></p> <p><i>Data from these study turbines and the turbines within the 30% pool should be used to estimate atmospheric and biological factors that could be used to predict when bat mortality occurs, which should be used to further refine optimal implementation of management actions.</i></p> <p><i>Biological variables and metrics should include measures of fatality and measures of activity. Number of bats (aggregated and separated by group or species) found per turbine per night and number of fresh bats (estimated to have occurred the previous night) should be the primary fatality metrics used. Bat activity metrics should include hourly and nightly bat call rates (# bat calls per detector night). Atmospheric variables measured should include weather information including wind speeds, wind direction, temperature, barometric pressure, humidity, and other indices relative to passage of storm fronts and general weather conditions. Weather information should be collected from meteorological towers and wind turbines in the project, and from the National Weather Service. Wind turbine characteristics measured should include average rpm's, operating time, and energy production.</i></p> <p><i>Bats should be surveyed in the project area using acoustic detectors (e.g., AnaBat® or accessible equivalent). At a minimum three detectors should be deployed to turbines included in the curtailment study - one for each treatment group – from approximately July 25th to September 25th. Each detector should be left at a chosen turbine for seven consecutive nights before recovery of the systems for data download. Detectors should be placed at ground level on a stand to elevate the microphone at least one meter about ground level.</i></p> <p><i>For this study, the number of bat passes per unit time should be the metric of interest and should be used as an index to bat use of the project area. A pass is defined as a train of echolocation calls produced by an individual bat, and consists of a continuous series of > 2 call notes with no pauses between call notes of > 1 second. The number of bat</i></p>

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	<p><i>passes should be determined by downloading the calls from the ZCAIMS onto a computer and counting the number of echolocation passes recorded.</i></p> <p>3. <u>Optimizing Management Based on Effectiveness and Cost</u></p> <p><i>The second objective should be addressed by selecting and testing the optimal management action(s), where optimal is defined as the implementation of management actions to achieve a maximum practicable level of reduction in bat mortality based on the economic constraints. Predictive models of bat mortality as a function of biological variables, atmospheric variables, and wind turbine variables may identify implementation of selective curtailment or other management actions as the optimal management action for maximizing reduction in bat mortality.</i></p> <p><i>This management action involves developing a model based on empirical data for determining nights of expected high bat mortality in which to implement curtailment of turbines. Curtailment of turbines could involve changing the cut-in speeds or completely shutting down turbines for select nights or periods.</i></p> <p>4. <u>Management Action Effectiveness Determination</u></p> <p><i>Estimated mortality reductions and associated costs should be calculated for various management action alternatives used in the study. Management actions to consider for additional testing or for recommendation should be developed using a cost and effectiveness evaluation based on the study results. For example, if the goal is to reduce tree-roosting bat mortality by 50 percent, then the management action(s) that are estimated or predicted to achieve 50 percent reduction for the minimum cost may be further tested if high uncertainty exists after the study, or may be recommended for immediate implementation if low uncertainty exists. Further testing may not be required if change in cut-in speeds for the entire study period is selected as an optimal management action. However, if selective curtailment or change in cut-in speeds is selected as a preferred management action, then additional validation may be needed to determine true effectiveness. Effectiveness</i></p>

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	<p><i>of management actions, including change in cut-in speeds, should be estimated based on fitting generalized linear mixed models. In addition, predictive models of bat mortality should be developed using the biological, environmental, and wind turbine characteristic variables described above.</i></p> <p>Annual Reporting</p> <ul style="list-style-type: none"> • <i>Annual report that includes:</i> <ul style="list-style-type: none"> ○ <i>verification of expenditures/lost revenues attributable to mitigation and post-construction monitoring, if such mitigation and/or post-construction monitoring were limited because the financial cap was reached.</i> ○ <i>results of monitoring for years when monitoring is performed</i> ○ <i>curtailment results (when, how long, etc.)</i> • <i>Incidental reporting for SGCN and T&E wildlife fatalities</i>
<p>6. Post-construction wildlife mitigation and management shall include the following:</p> <p>a. Post-construction mitigation. After completing the initial one year of post-construction monitoring, the owner or operator shall submit the first year's monitoring data and a revised mitigation plan detailing the monitoring and mitigation actions expected to be implemented for the remainder of the project's operating life. Such mitigation actions shall be designed to address the impacts revealed by the initial year of post-construction monitoring. One year after the revised mitigation plan is submitted, and annually thereafter, the owner or operator shall submit a report consisting of the results of ongoing monitoring, including data and supporting documents, an explanation of how the</p>	<p><i>"Data and supporting documents" means that actual data and reports should be submitted, not just summaries. The owner/operator should also explain how these monitoring data informed his "adaptive</i></p>

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<p>mitigation measures reflect results indicated by the monitoring data, and documentation showing expenditures and lost revenues attributable to curtailment, other mitigation actions, and monitoring.</p> <p>b. Amendment of mitigation plan. After three years of post-construction mitigation efforts, the owner or operator of the project may initiate a consultation with the department to propose amendments to the mitigation plan. The owner or operator shall submit any proposed amendments of the mitigation plan to the department. The department may approve the proposed amendments if the department determines that the proposed amendments will avoid or minimize adverse impacts to a demonstrably equal or greater extent as the mitigation measures being implemented at that time. Alternatively, the department may approve the proposed amendments to the mitigation plan if the owner or operator demonstrates that the mitigation measures being implemented at that time are not effectively avoiding or minimizing adverse impacts, in which case the owner or operator may propose and the department may approve ways of offsetting ongoing adverse impacts, such as funding research or preserving habitats.</p>	<p><i>management” decisions.</i></p>
<p>C. Historic Resources</p> <p>1. Significant adverse impacts to VLR-eligible or VLR-listed architectural resources shall be minimized, to the extent practicable, through design of the wind energy project or the installation of vegetative or other</p>	<p><i>If the owner of the affected historic property agrees to screening, a landscape plan should be prepared and submitted. This plan should include a graphic representation of the effectiveness of the screening. The applicant should implement the approved landscape plan and</i></p>

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screening.	<i>accept responsibility for the survival of any plantings for one year after planting. Documentation of the completion and assessment of the efficacy of the screening should be submitted.</i>
2. If significant adverse impacts to VLR-eligible or VLR-listed architectural resources cannot be avoided or minimized such that impacts are no longer significantly adverse, then the applicant shall develop a reasonable and proportionate mitigation plan that offsets the significantly adverse impacts and has a demonstrable public benefit and benefit for the affected or similar resource.	<i>A schedule for mitigation implementation should be included in the application.</i>
3. If any identified VLR-eligible or VLR-listed archaeological site cannot be avoided or minimized to such a degree as to avoid a significant adverse impact, significant adverse impacts of the project will be mitigated through archaeological data recovery.	<i>Any necessary data recovery plan should include: (a) the property, properties, or portions of properties where site specific data recovery plans will be carried out; (b) the portion(s) of the site to be preserved in place, if any, as well as the measures to be taken to ensure continued preservation; (c) research questions to be addressed through data recovery with an explanation of their relevance and importance; (d) methods to be used with an explanation of their relevance to the research questions; (e) methods to be used in analysis, data management, and dissemination of data, including a schedule; (f) proposed disposition of recovered materials and records; (g) proposed methods of disseminating the results of the work to the interested public; and (h) a schedule for the submission of progress reports to DEQ.</i>
70. Site Plan and Context Map. 80. Design Standards.	
90. Public participation. A. Public Notice	

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<p>Before the initiation of any construction at the small wind energy project, the applicant shall comply with this section. The owner or operator shall first publish a notice once a week for two consecutive weeks in a major local newspaper of general circulation informing the public that he intends to construct and operate a project eligible for a permit by rule. No later than the date of newspaper publication of the initial notice, the owner or operator shall submit to the department a copy of the notice along with electronic copies of all documents that the applicant plans to submit in support of the application. The notice shall include:</p> <ol style="list-style-type: none"> 1. A brief description of the proposed project and its location, including the approximate dimensions of the site, approximate number of turbines, and approximate maximum blade-tip height; 2. A statement that the purpose of the public participation is to acquaint the public with the technical aspects of the proposed project and how the standards and the requirements of this chapter will be met, to identify issues of concern, to facilitate communication, and to establish a dialogue between the owner or operator and persons who may be affected by the project; 3. Announcement of a 30-day comment period in accordance with subsection C of this section, and the name, telephone number, address, and email address of the applicant who can be contacted by the interested persons to answer questions or to whom comments shall be sent; 4. Announcement of the date, time, and place for a public meeting held in accordance with subsection D of this section; and 	<p><i>For projects located in nearshore waters or on state-owned submerged lands, the applicant should provide the notice of the public meeting to the local government in each of the localities where significant natural resource impacts from the project are likely to occur.</i></p>

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5. Location where copies of the documentation to be submitted to the department in support of the permit by rule application will be available for inspection.	

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<p>100. Change of Ownership, Modifications, Termination.</p>	<p><i>Applicants should note the notification requirements under 9VA15-100 if <u>control of a project</u> is sold or transferred to an entity different than the original applicant, <u>even if the name of the project does not change</u>. Enforcement actions, if required, could be brought against the owner/operator listed in PBR as well as the new entity for operating without a permit.</i></p>
<p>110. Fees.</p>	<p><i>Fees: The correct address to which payments should be addressed is Department of Environmental Quality Receipts Control P. O. Box 1104 Richmond, Virginia 23218</i></p> <p><i>Applicants should check with DEQ Renewable Energy staff regarding the appropriate project/fund coding that should be entered on their check to ensure proper crediting of payments.</i></p>
<p>120. Internet Resources.</p> <p>1. Coastal GEMS application, 2010, Virginia Department of Environmental Quality. Available at the following Internet address: http://www.deq.virginia.gov/coastal/coastalgems.html.</p> <p>NOTE: This website is maintained by the department. Assistance and information may be obtained by contacting Virginia Coastal Zone Management Program, Virginia Department of Environmental Quality, 629 E. Main Street, Richmond, Virginia 23219, (804) 698-4000.</p>	<p><i>The Coastal GEMS website was recently updated. Please click the following to access: Coastal GEMS Website.</i></p>

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<p>130. Smaller Projects.</p> <p>A. Less than 500 kW</p>	<p>A. <i>No notice to DEQ and no local government certification of compliance with land use ordinances are required for projects ≤ 500 kW in rated capacity.</i></p>
<p>B. Between 500 kW and 5 MW</p> <p>The owner or operator of a small wind energy project with a rated capacity greater than 500 kilowatts and equal to or less than 5 megawatts shall :</p> <p>1. Notify the department by submitting a certification by the governing body of the locality or localities wherein the project will be located that the project complies with all applicable land use ordinances and applicable local government requirements; and</p>	<p>B. <i>Both notice to DEQ and submission to DEQ of local government certification of compliance with land use ordinances are required for projects greater than 500 kW and equal to or less than 5 MW in rated capacity.</i></p> <p><i>For notice to DEQ, please refer to the attached Sample Notice of Intent (Section 130 Projects). The agency's preference is that this notification be provided by electronic mail to mary.major@deg.virginia.gov.</i></p> <p><i>For local government certification, please use the attached Local Government Certification form, which may also be submitted by electronic mail to mary.major@deg.virginia.gov .</i></p> <p><i>Consistent with statutory language, an application in this category will be deemed complete and adequate if the local government certifies compliance with "applicable land use ordinances."</i></p> <p><u>Note regarding projects with rated capacity greater than 500 kW and equal to or less than 5 MW that are located in state waters over state-owned bottomland:</u> <i>Local government certification is not required for projects which are located on state-owned submerged lands, as provided in the Attorney General's Opinion No. 10-091 dated December 30, 2010. That Opinion states that Virginia localities do not have authority to extend the application of their land use ordinances to state-owned submerged lands; and that therefore, for small renewable</i></p>

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<p>2. For projects located in part or in whole within zones 1, 2, 3, 4, 5, 10, 11, 12, or 14 on the Coastal Avian Protection Zones (CAPZ) map, contribute \$1,000 per megawatt of rated capacity, or partial megawatt thereof, to a fund designated by the department in support of scientific research investigating the impacts of projects in CAPZ on avian resources.</p>	<p><i>energy projects located on or in the waters above state-owned bottomland, there are no "applicable land use ordinances" for purposes of the certification requirement of the renewable energy projects statute. Accordingly, the Opinion provides that DEQ may treat the certification requirement as inapplicable in this circumstance and may authorize a project if the agency determines that the project applicant has met all other applicable requirements. A wind project located on state-owned submerged land meets the requirements of 9VAC15-40-130 B 1 if the owner or operator notifies DEQ of his intent to construct and operate the project. Please refer to the attached Sample Notice of Intent (Section 130 Projects). The agency's preference is that this notification be provided by electronic mail to mary.major@deq.virginia.gov.</i></p> <p><i>The listed zones are the ones enumerated in 9 VAC 15-40-40 A 5 where developers of projects >5 MW are not required to perform field studies but rather may rely on existing scientific analysis, as reflected in the CAPZ map. Thus, the applicant will know by consulting the CAPZ information in the regulation and on Coastal GEMS whether his proposed project will be located in one of the relevant CAPZ. If so, he will be required to submit a contribution in support of avian research based on the rated capacity of his project. The contribution in support of scientific research is to be submitted to the Coastal Zone Management (CZM) Program, as described in the "CAPZ Funding Distribution" white paper, which is posted on the DEQ Renewable Energy webpage located at http://www.deq.state.va.us/renewable_energy/homepage.html.</i></p> <p><i>Applicants should check with DEQ Renewable Energy staff regarding the appropriate project/fund coding that should be entered on their check to ensure proper crediting of payments. Payment is due at the time of application submittal.</i></p> <p><i>Applicants are urged to confer with DGIF staff, especially with regard to compliance with the Virginia Endangered Species Act, if T&E species are found to occur within the disturbance zone or the disturbance zone is located on or within ½ mile of a known or potential sea turtle nesting</i></p>

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	<i>beach.</i>
<p>140. Enforcement.</p>	<p><i>Applicants need to supply the as-built post construction map of the project as required under 9VAC15-40-70. Applicants should supply any other mitigation documentation post construction if required including documentation for landscape screening plans.</i></p> <p><i>NOTE: All commitments submitted within the application documents become enforceable actions.</i></p>
<p>DOCUMENTS INCORPORATED BY REFERENCE (9VAC15-40)</p> <p>Virginia's Comprehensive Wildlife Conservation Strategy, 2005, Virginia Department of Game and Inland Fisheries, Richmond, Virginia.</p>	<p><i>This document is also known as the Wildlife Action Plan.</i></p>

Forms and Attachments

**Virginia Department of Environmental Quality
Small Renewable Energy Projects (Wind)
Local Governing Body Certification Form**

Facility Name and Location:

Applicant's Name:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant or his representative is submitting an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 - 1197.6 B 2 of the Code of Virginia, before such permit application can be considered complete, the applicant must obtain a certification from the governing body of the locality or localities in which the small renewable energy project will be located that the project complies with all applicable land use ordinances.

The undersigned requests that an authorized representative of the local governing body sign the certification statement below. In addition, by signing below, the applicant affirms that he has also submitted this form to other localities, if any, in which the proposed project will be located.

Applicant's signature:

Date:

The undersigned local government representative certifies that the proposed small renewable energy project complies with all applicable land use ordinances, as follows:

(Check one block)

The proposed facility **complies with** all applicable land use ordinances.

The proposed facility **does not comply** with all applicable land use ordinances.

Signature of authorized local government representative:

Date:

Type or print name:

Title:

County, City or Town:

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

Facility Name and Location:

Applicant's Name & Title:

Applicant's Mailing Address:

Telephone Number and Email Address:

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)

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

Date:

**Virginia Department of Environmental Quality
Small Renewable Energy Projects
Non-Utility Certification Form**

Facility Name and Location:

Applicant's Name:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant or his authorized representative an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 H of the Code of Virginia, before such permit application can be considered complete, the applicant must certify the project is proposed, developed, constructed or purchase by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

The undersigned is an responsible official for the proposed project and certifies that the project is proposed, developed, constructed or purchased by a person that is NOT a utility regulated pursuant to Title 56 of the Code of Virginia.

Applicant's signature:

Date:

**Virginia Department of Environmental Quality
Small Renewable Energy Projects
Utility Certification Form**

Facility Name and Location:

Applicant's Name:

Applicant's Mailing Address:

Telephone Number and Email Address:

The applicant or his authorized representative is submitting an application for a small renewable energy permit by rule from the Virginia Department of Environmental Quality. In accordance with § 10.1 -1197.6 I 1 and 2 of the Code of Virginia, before such permit application can be considered complete, the applicant must certify that the project is proposed, developed, constructed or purchased by either a public utility which meets specific criteria or a utility aggregation cooperative.

The undersigned is a responsible official for the proposed project and certifies that the project is proposed, developed, constructed or purchased by:

(Check one block)

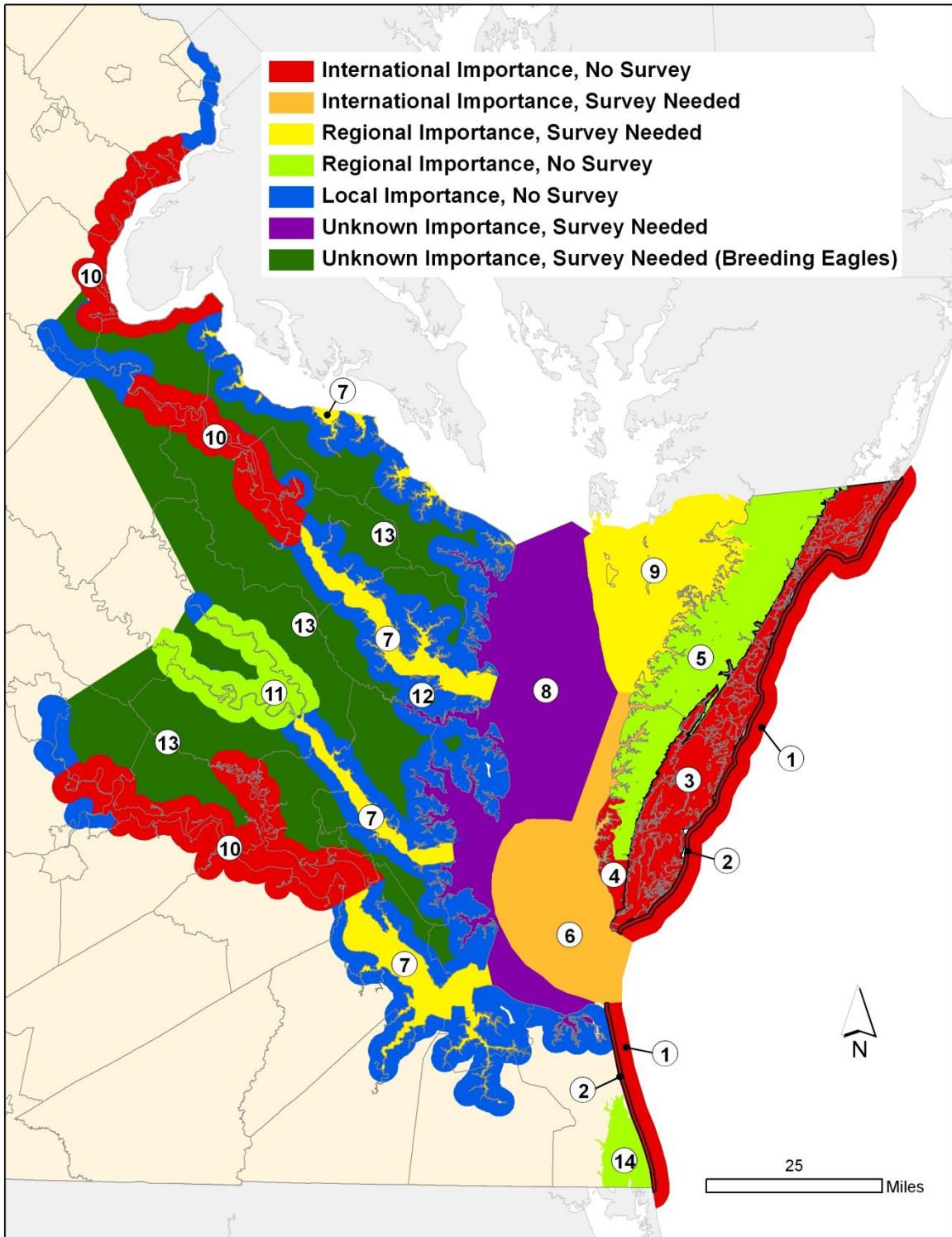
A public utility; the project's costs are not recovered from Virginia jurisdictional customers under base rates, a fuel factor charge under § 56-249.6, or a rate adjustment clause under subdivision A 6 of § 56-585.1.

A utility aggregation cooperative formed under Article 2 (§ 56-231.38 et seq.) of Chapter 9.1 of Title 56.

Applicant's Signature:

Date:

Coastal Avian Protection Zones (CAPZ) Map (PDF Version)



(Notice of Intent for Wind Energy Project – “de minimis” Section 130 projects)

COMPANY LETTERHEAD

[Date]

Ms. Mary E. Major
Renewable Energy Permitting
Department of Environmental Quality
P. O. Box 1105
Richmond, VA 23218
mary.major@deq.virginia.gov

Dear Ms. Major:

On behalf of **[company/applicant]**, I am hereby providing notice to the Department of Environmental Quality of our intention to construct a small renewable energy project (wind) in **[county/city]**, Virginia, pursuant to Virginia Regulation 9VAC15-40-130.B. This project will be subject to provision 9VAC15-40-130.B because the rated capacity of the project will be **[rated capacity greater than 500 kilowatts and equal to or less than 5 megawatts]**.

[Applicant should provide a brief description of the proposed project and its location including geographic coordinates, the approximate dimensions of the site, acreage, approximate number of turbines, and approximate maximum blade-tip height.]

Attached to this letter, please find a certification by **[governing body of the locality or localities wherein the project will be located]** that the project complies with all applicable land use ordinances. **[Alternative language: No local government certification is being submitted with this letter because the project will be located in state waters on state-owned subaqueous bottoms.]**

If the Department has questions regarding this project, please contact **[name]** at **[email address and telephone number]**.

Sincerely yours,

[name]
[title]

[Note: Brackets indicate where applicant should provide project-specific information.]

(Notice of Intent for Wind Energy Project – full PBR projects)

COMPANY LETTERHEAD

[Date]

Ms. Mary E. Major
Renewable Energy Permitting
Department of Environmental Quality
P. O. Box 1105
629 East Main Street
Richmond, VA 23218
mary.major@deq.virginia.gov

Dear Ms. Major:

On behalf of **[company/applicant]**, I am hereby providing notice to the Department of Environmental Quality of our intention to submit the necessary documentation for a permit by rule for a small renewable energy project (wind) in **[city/county]**, Virginia, pursuant to Virginia Regulation 9VAC15-40.

[Applicant should provide a brief description of the proposed project and its location including geographic coordinates, the approximate dimensions of the site including total acreage, approximate number of turbines, and approximate maximum blade-tip height. Include approximate rated capacity, if known. Projects in this category should have rated capacity greater than 5 MW and not exceeding 150MW.]

If the Department has questions regarding this project, please contact **[name]** at **[email address and telephone]**.

Sincerely yours,

[name]

[title]

[Note: Brackets indicate where applicant should provide project-specific information.]