

Opportunities to Improve Landscape-Scale Mitigation for Energy Projects in the Chesapeake Region

November 2018



Opportunities to Improve Landscape-Scale Mitigation for Energy Projects in the Chesapeake Region

Environmental Law Institute

Report prepared for Chesapeake Conservation Partnership

November 2018

Table of Contents

Purpose	1
Regulatory Overview	1
Landscape Objectives	2
Opportunities	3
Overview of Recommendations	4
DEFINE THE LANDSCAPE OBJECTIVES	4
CHANGE THE CONCEPTUAL APPROACH TO PERMITTING	4
IMPROVE SECTION 401 WATER QUALITY CERTIFICATION PRACTICES	4
AFFECT FERC DECISIONS TO ACHIEVE BETTER LANDSCAPE-LEVEL ALTERNATIVES AND MITIGATION	5
IMPROVE STATE PUBLIC UTILITY REGULATORY DECISIONS	6
FOR SOLAR AND WIND SITING	7
IMPROVE THE USE OF NATURAL HERITAGE INFORMATION	7
ADOPT STATEWIDE MITIGATION POLICIES	8
ADVANCE PROTECTION OF HISTORIC, CULTURAL, AND SCENIC RESOURCES	8
PUBLIC TRUST	9
WATER RESOURCES PERMITTING	9
FOREST CONSERVATION	9
EASEMENT LANDS	10
FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT	11
STRATEGICALLY SUPPORT SOME LOCAL LAND USE REGULATION	11
Public Utility Regulation	12
FERC Regulation	12
State Public Utility Regulation	14
Pennsylvania	14
Maryland	16
Virginia	20
Other Information	24
Recommendations	25
Water Resources – Water Quality Certification and Permits	29
Water Quality Certification	29

Federal and State Permits	30
Chesapeake Bay TMDL and Watershed Implementation Plans	32
Pennsylvania	33
Water Quality Certification Process	33
Chapter 105 Waterway Obstruction Permits	35
Chapter 102 Erosion and Sediment Permits	36
NPDES Permit	37
Maryland	38
Water Quality Certification Process	38
NPDES Permit	39
Water Obstruction Activities	40
Nontidal Wetlands	40
Tidal Wetlands and Submerged Lands	42
Erosion and Sediment	42
Critical Areas Act	43
Virginia	43
Water Quality Certification Process	43
Virginia Water Protection Permit	45
VPDES	46
Erosion and Sediment Control Plan	46
Tidal Wetlands and Submerged Lands	46
Chesapeake Bay Preservation Act	47
Recommendations	47
Wildlife and Habitat Conservation	49
Pennsylvania	50
Maryland	53
Virginia	55
Other Information	58
Recommendations	60
Forest Conservation	62
Pennsylvania	62
Maryland	63

Virginia	64
Recommendations	67
Historic/Scenic Resources	69
Pennsylvania	70
Maryland	71
Virginia	72
Other Information	75
Recommendations	77
Conservation Easements and Lands Programs	78
Pennsylvania	78
Maryland	80
Virginia	82
Recommendations	84
Public Trust Doctrine	86
Pennsylvania	86
Maryland	89
Virginia	90
Other Information	91
Recommendations	91
Coastal Zone – Federal Consistency	93
Pennsylvania	94
Maryland	94
Virginia	97
Recommendation	99
Other Approaches	100
Recommendations	102
Appendix A: Work Group Members	104

Purpose

There are numerous applications for large linear energy projects – natural gas pipelines and electric transmission lines – that will affect the lands, waters, and resources of the Chesapeake region. At the same time, the states in this region are experiencing challenges in meeting their goals for conservation of lands, waters, and natural and historic resources. New and revised *state-level practices* can address the impacts of proposed projects and improve land conservation outcomes. This report identifies opportunities for the Chesapeake Conservation Partnership and its members:

- to advance and improve landscape-scale mitigation expectations under existing laws, and
- to strengthen or create policies in Maryland, Pennsylvania, and Virginia to advance opportunities to apply consistent requirements for land conservation at scale with net benefits to the watershed.

This report also examines similar issues that affect siting and mitigation of new commercial-scale solar and wind electric power generating facilities in the region.¹

The authorization and permitting of new energy facilities presents an opportunity to address landscape-scale conservation needs. These facilities cause long term landscape impacts on lands and waters, habitats, cultural and historic resources, scenic viewsheds, rural economies, and human communities. Adverse impacts from energy projects should be identified and avoided wherever possible and offset to the extent not avoided and minimized. The development of policy associated with the siting and approval of such facilities can also support goals for a net gain or net improvement in affected resources via appropriately designed mitigation.

Determining how these objectives can best be accomplished requires an understanding of the available regulatory and policy tools, and a strategic approach toward landscape-level goals across the watershed, including coordination among the states.

Regulatory Overview

Opportunities to affect siting and permitting of energy facilities are found in a variety of state and federal laws. This report focuses on state laws, policies, and practices, as well as state engagement with relevant federal approval processes. It identifies what authorities exist, how they are currently interpreted and used, and how they may be used more effectively to pursue landscape-scale objectives. The report also identifies areas for future policy development.

¹ This project was conducted by the Environmental Law Institute (ELI) in consultation with a Work Group of Chesapeake Conservation Partnership members (see Appendix A) including natural resources agencies in the three states, the Land Trust Alliance/Chesapeake Land and Water Initiative, the Piedmont Environmental Council, the National Trust for Historic Preservation, and the Partnership.

These energy projects typically require permits and approvals from state environmental and natural resource agencies. Some projects (primarily electric transmission projects and new generating facilities) are also subject to approval by state public utility regulatory commissions.²

State laws also interact with federal approval processes. Relevant federal processes with opportunities for state input include Federal Energy Regulatory Commission (FERC) approvals of interstate gas pipelines and of some electric transmission lines,³ and Army Corps of Engineers permits authorizing dredge and fill of waters of the United States.⁴ These federal processes trigger environmental impact reviews under the National Environmental Policy Act (NEPA),⁵ historic preservation reviews under the National Historic Preservation Act (NHPA),⁶ and consultation under the Endangered Species Act (ESA).⁷ State data, policies, and recommendations can affect the conditions of federal certificates and permits.

The federal Clean Water Act further provides that projects that require federal approval must obtain a certification from each affected state that the authorized activity will not cause violations of state water quality standards.⁸ The Coastal Zone Management Act provides that federal activities and approvals affecting a state's coastal zone trigger an opportunity for state review of the "consistency" of the proposed federal action with enforceable state policies.⁹ Each of these provides opportunities for states to deny or condition the federal activity based on state laws and regulations.

Landscape Objectives

The Chesapeake Bay region includes diverse landscapes, ecosystems, and watersheds with a growing population and broadly diverse economy. Historically dominated by forested watersheds, with eco-regions ranging from the Valley and Ridge to the Piedmont to the Coastal Plain, the environmental and cultural future of this region depends on clear understanding of resources, stressors, risks, opportunities, goals and management approaches.

In the 2014 Chesapeake Bay Agreement, state and federal signatories set a goal to protect by 2025 an *additional* two million acres of land throughout the watershed over the 2010 baseline; this includes protecting 225,000 additional acres of wetlands and 695,000 acres of forest land of highest value for water quality. The 2025 landscape goal would result in a total of 9.8 million acres in the watershed under some type of conservation status. By 2017, half of the two million acre incremental goal had been

² Pennsylvania's Public Utility Commission, Maryland's Public Service Commission, and Virginia's State Corporation Commission have jurisdiction over "public utilities" as defined in state law. In general, approval of a certificate by these regulators carries with it the power of the public utility to use eminent domain under state law to acquire land or easements for pipelines and electric power transmission lines.

³ 15 U.S.C. § 717 et seq., 16 U.S.C. § 824p.

⁴ 33 U.S.C. § 1344.

⁵ 42 U.S.C. § 4332. Environmental review considers alternatives to the proposed action and mitigation for impacts.

⁶ 54 U.S.C. § 306108.

⁷ 16 U.S.C. § 1536.

⁸ 33 U.S.C. § 1341.

⁹ 16 U.S.C. § 1456.

reached.¹⁰ The Agreement also set habitat restoration and water quality goals, among others. Commitments under the Chesapeake Bay Total Maximum Daily Load (TMDL) and its watershed implementation plans (WIPs) also drive land and water conservation priorities.¹¹ The 2025 acreage goal does not represent an endpoint for conservation, but a mechanism for accountability and continuing progress.

The Chesapeake Conservation Partnership's *LandScope Chesapeake* provides tools to assist the public and conservation partners in understanding conservation status and priorities in the region, with information relevant to priorities for farms, forests, habitat, heritage, and human health.¹²

Opportunities

As the U.S. energy economy undergoes rapid transformation, challenges presented by pipelines, transmission corridors, and new electric generating facilities, include fragmentation of habitats, conversion of habitats and direct impacts on wildlife; impacts on nutrient mobilization, carbon sequestration, and wetlands and waterways; and effects on scenic and cultural and historic resources, and on lands currently in conservation ownership.

Large pipelines and transmission projects offer some important opportunities. These projects typically require multiple permits and approvals, and they are typically undertaken by well-financed enterprises that are motivated to move as quickly as possible through these approval processes. They can usually afford to pay for substantial technical expertise. Because of these factors, applicants may be willing to make substantial outlays, including funding conservation lands, activities, and mitigation, if it will facilitate the approval timelines. However, independent electric power generators seeking to construct wind or solar facilities are more variable; some may have financial capacity and flexibility to address conservation concerns at scale, while others have less.

Mitigation expenses are typically allowable expenses in regulated utility contexts; and in competitive markets are part of the costs of permitting and construction that inform the financial viability of the project.

Although the sections of this report address different types of regulatory and approval processes, in each instance these regulatory tools can be marshalled toward landscape-enhancing and conserving outcomes.

¹⁰ Chesapeake Watershed Agreement (June 6, 2014). Commitments include Delaware, West Virginia, New York, and the District of Columbia, as well as the partners in this study – Maryland, Pennsylvania, and Virginia – and the federal government's lands in these states. Maryland, Pennsylvania, and Virginia account for 7.9 million acres of the 8.8 million acres in protected status as of 2017. See <http://www.chesapeakeprogress.com/conserved-lands/protected-lands>.

¹¹ U.S. EPA, Chesapeake Bay TMDL (Dec. 29, 2010), at <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-document>; objectives also were developed under Executive Order 13508, Chesapeake Bay Protection and Restoration, 74 Fed. Reg. 23099 (May 15, 2009), and the resulting watershed-wide strategy (May 12, 2010).

¹² <http://www.landscape.org/chesapeake/>. Also see the links to state-based LandScope information at http://www.landscape.org/chesapeake/bay_states/.

Overview of Recommendations

These recommendations are grouped for convenience. In general they correspond to the substantive sections of this report, but in some instances they have been pulled together to make consideration easier. For example, adopting statewide mitigation policies derives from a number of different sections. Recommendations that relate to local government actions are grouped together even though discussed in several sections of the report. Only the most important recommendations are included in this overview section. However, readers will find all recommendations at the end of each substantive section in the report.

Two overarching recommendations inform the approach:

DEFINE THE LANDSCAPE OBJECTIVES

To make effective use of legal tools to conserve the Chesapeake Bay watershed in the context of future reviews of energy facilities, the states and conservation organizations should clearly define their landscape objectives. This means using datasets and planning tools to identify priority areas by type and habitat spatially (including by watershed). Defining landscape objectives *in advance* of any applications makes it possible to derive the most benefit from sometimes diffuse approval processes for electric transmission lines, gas pipelines, or solar or wind facilities.

CHANGE THE CONCEPTUAL APPROACH TO PERMITTING

State agencies often focus only on specific permit requirements (e.g., impacts of individual stream crossings, impact on state-owned forestlands), an approach that does not facilitate looking at broader direct and indirect impacts and cumulative impacts of the project as a whole. Because these projects involve both short-term and long-term impacts on interrelated resources and landscapes important to the ecological health of the entire region, an improved approach to project review should enable:

1. Expanded identification of important areas for project applicants to avoid;
2. Defining potential impacts on a landscape-wide, cumulative basis, not just permit-by-permit;
3. Defining mitigation for the whole project with respect to these impacts.

Specific recommendations are offered in thirteen categories. Each recommendation is followed by the type of action that would be needed to implement the recommendation – ranging from administrative interpretation of existing authority, to rulemaking, to legislation.

IMPROVE SECTION 401 WATER QUALITY CERTIFICATION PRACTICES

1.1 The states should adopt protocols for conducting 401 certification for large linear energy projects that are expressly based on the “purposes and policies” in state water laws to add conditions and requirements that meet these objectives in the affected watersheds. These include provisions providing for “water quality management and pollution control in the watershed as a whole,” provisions to “improve, conserve, and manage the quality of the waters” of the state, and “conservation and protection of water resources together with protect of land resources as affected thereby.” 35 P.S. § 691.5(a), Md. Code Ann. Env’t. § 9-

301(b), Va. Code § 62.1.11.D, respectively. *Implementation Method: Administrative Interpretation or Rulemaking*

1.2 The states should define landscape level compensatory mitigation requirements for § 401 certification by expressly relying on and referring to the Chesapeake Bay model of land cover and condition, forecasting, and relevant best management practices (BMPs). While temporary land disturbances and vegetation removal during construction, and long-term land cover alteration during project life, might not produce explicit outcomes for all pollutants in terms of pollution loadings, nevertheless the model can identify appropriate locations and scale for mitigation activities. States can construct water quality certification requirements and conditions for upland and terrestrial actions, and mitigation requirements on those lands, using these tools that connect landscapes with water quality outcomes. This provides justification for the conditions, and can withstand the deferential standard of review used to sustain state § 401 determinations. *Implementation Method: Administrative Interpretation*

1.3 Pennsylvania DEP and Maryland MDE should emulate Virginia DEQ's 401 certification guidance for uplands that will be affected by pipeline activities, and adopt their own supplemental guidance. This creates expectations for applicants at the outset and defines the basis for compensatory mitigation in multiple dimensions. This approach can be further implemented by building upon the Virginia forest impact methodology, as a reproducible, consistent methodology, to link requirements to water quality. Virginia can update its own guidance based on its recent experience with applying these conditions. *Implementation Method: Administrative Interpretation*

1.4 Require individual permits with § 401 certifications (or condition future 401 certifications of Corps of Engineers general permits/nationwide permits for stream crossings and wetland impacts), when large linear energy projects involve multiple uses of NWP/SPGPs. Each state environmental agency should adopt a policy to require cumulative consideration of these impacts, especially where the impacts affect tributary networks and where the impact of failure may be significant. Such a requirement would support triggering the kind of compensatory mitigation conditions identified above in instances where currently there is no opportunity for such requirements. *Implementation Method: Administrative Interpretation or Rulemaking*

AFFECT FERC DECISIONS TO ACHIEVE BETTER LANDSCAPE-LEVEL ALTERNATIVES AND MITIGATION

2.1 The states should develop a set of well-supported landscape analyses and consistent mitigation conditions reflecting habitat and watershed impacts and conservation goals, using a consistent methodology among all three states. This can be based on common natural heritage priorities (discussed below) and on use of the Bay model. Such approaches should be used to support FERC consideration of (1) alternatives, and (2) large-scale mitigation requirements. FERC is required to take a hard look at alternatives, environmental impacts (including cumulative impacts), and mitigation, and to respond to all substantive comments when developing a final EIS. A unified state approach based on a transparent, reproducible, methodology is more likely to produce results in the FERC license conditions, or denial of a certificate. When appropriate, states should combine to request that FERC prepare regional and programmatic EISs in order to identify alternatives and address both cumulative impacts and tradeoffs of multiple proposals affecting the same landscapes. *Implementation Method: Administrative Interpretation*

2.2 Participate in FERC’s newly launched review of its 1999 natural gas pipeline policy to ensure that FERC takes into account landscape-level concerns important to states. Advocate that FERC: adopt natural resource protection goals among its policy elements; adopt preferences for co-location of pipeline facilities (except where these will cause additional impacts to important natural heritage areas identified by states); minimize landscape disruption/fragmentation of conservation lands; endorse compensatory mitigation for conservation lands. Although the public comment period on the initial Notice of Inquiry closed on July 25, 2018, FERC may continue additional activity in this docket, and may even seek further comment on a proposed policy. When and if FERC adopts a revised policy, pursue implementation strategies that support regional analyses and consideration of cumulative impacts. *Implementation Method: Administrative Interpretation*

IMPROVE STATE PUBLIC UTILITY REGULATORY DECISIONS

3.1 For electric transmission lines, advocate with state public utility regulators to adopt preferences for *avoidance and minimization* of impacts on natural heritage landscapes important in the state and region, and then to recognize compensatory offsets *after* such avoidance and minimization. The commissions could adopt this standard under existing law. Under current law the Pennsylvania PUC is to find that a proposed line will have “minimum adverse environmental impact, considering...the available alternatives.” The Maryland PSC must give “due consideration” to “esthetics; historic sites; ... [and] when applicable, air quality and water pollution” and must evaluate “alternative routes” for overhead transmission lines, and must determine that benefits outweigh impacts. The Virginia SCC is to establish “such conditions as may be desirable or necessary to minimize adverse environmental impact” and “reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned.” (52 Pa. Admin. Code 57.76, Md. Ann. Code, Pub. Util. Cos. § 7-207, Va. Code § 56-580). The *minimization or due consideration goal* could be defined by the regulators or in legislation by each state legislature as: “first avoid, then minimize, then compensate for unavoidable impacts.” This formulation could apply either on the landscape generally or to specific areas or landscape types defined as having specific natural resource or cultural resource values or designations. New legislation could require public utility regulators to find that applicants have demonstrated avoidance of impacts to natural and cultural resources as a first order strategy. Virginia’s DEQ regulations for permit-by-rule for smaller solar and wind facilities include some avoidance requirements where adverse impacts are identified. *Implementation Method: Administrative Interpretation, Commission Decision or Policy, Legislation*

3.2 Amend statutes/rules to require alternatives analysis where not required currently. Rely on Pennsylvania public trust doctrine (discussed below) if there is a need to do this without statutory amendment in Pennsylvania. *Implementation Method: Rulemaking, Legislation*

3.3 State legislation or public utility regulatory policy could require the public utility regulators to consider and evaluate non-wire alternatives to the construction of new transmission (or the replacement of transmission capacity), as a necessary element of the alternatives analysis. *Implementation Method: Commission Decision or Policy, Legislation*

3.4 State environmental and resource agency reviews and comments supporting public utility decision processes could adopt explicit preferences for siting of new generating facilities and transmission corridors wherever possible on disturbed lands and/or for co-location of transmission lines, except where this would cause additional adverse impacts to important

natural heritage or cultural heritage areas. <i>Implementation Method: Administrative Interpretation</i>
<p>3.5 Enforcement authority as to intrastate pipelines is available, but not siting approval. Regulators could use their limited authority prospectively by developing public utility enforcement criteria to require operators to identify avoidance and mitigation actions (as well as response actions) in sensitive natural areas such as karst areas and sensitive or unique habitats, and submission of reports to ensure safe operation in these areas. <i>Implementation Method: Commission Decision or Policy</i></p>
FOR SOLAR AND WIND SITING
<p>4.1 Consider adding site analysis to authorities for solar and wind siting: The Pennsylvania PUC does not regulate siting of these facilities. Legislation could address siting, and require consideration of siting and alternatives for these facilities. The Maryland PSC applies the same standards as for transmission (except for exempt wind facilities under 70 MW where there is no siting analysis); there is no required alternative site analysis for these facilities either above or below 70 MW. Legislation could require consideration of alternative sites. The Virginia SCC applies no alternatives analysis for non-utility generators; and there is no required alternative siting analysis for wind and solar under 150 MW under the permit-by-rule administered by DEQ. Legislation could require alternative siting analysis. <i>Implementation Method: Legislation</i></p>
<p>4.2 Legislation could be adopted in each state to discourage the location of solar facilities on prime farmland, where this would interfere with farming, and to require offset or replacement of farmland easements in a multiple ratio in areas where siting is approved. <i>Implementation Method: Legislation</i></p>
IMPROVE THE USE OF NATURAL HERITAGE INFORMATION
<p>5.1 Robust GIS and data tools should be used and further developed to continue to define critical landscapes and habitat cores and to prioritize protection (e.g., the Maryland, Virginia Tier 1-5 ecological value systems used for different non-regulatory planning purposes). These could be built into the natural resource spatial planning tools available to assist in project design and in identifying mitigation options. These could be used by state agencies in developing comments to FERC and state public utility regulators, and in proposing compensatory mitigation requirements under §401 and other regulatory tools. <i>Implementation Method: Administrative Interpretation</i></p>
<p>5.2 Support applicants' and agencies' ability to address impacts to privately-owned lands (such as their ability to identify impacts to forest cores on private lands, or natural heritage areas on private as well as public lands). <i>Implementation Method: Administrative Interpretation, Education and Outreach</i></p>
<p>5.3 Expressly connect adopted Wildlife Action plans to planning tools/resources consulted by applicants, and to development of mitigation opportunities. <i>Implementation Method: Administrative Interpretation, Education and Outreach</i></p>
<p>5.4 Create a checklist of databases and mapping tools that project applicants, applicants for 401 certification, and developers must consult when beginning to develop proposals and alternatives. <i>Implementation Method: Administrative Interpretation, Education and Outreach, Rulemaking</i></p>

5.5 Prepare resources to support advance identification of areas suitable for wind or solar energy facilities with a minimum of conflicts (as in TNC’s *Siting by Design* and other cooperative efforts). In this region, pre-identification of areas with substantial wind resources (or solar access) and access to transmission could identify previously disturbed (such as previously mined) areas or brownfields not in core habitats, that are suitable for evaluation by project developers. *Implementation Method: Education and Outreach*

5.6 For wind/solar siting develop a model or voluntary agreement to facilitate appropriate siting, design, and operation parameters (expanding on the limited approach developed by the Pennsylvania Game Commission for wind development). *Implementation Method: Administrative Interpretation, Education and Outreach*

ADOPT STATEWIDE MITIGATION POLICIES

6.1 States should adopt statewide policies applicable to energy development and other activities for all habitat types identified in the policy. These policies should include: (1) Sequencing – avoid, then minimize, then compensate, and (2) No net loss, net benefit for natural resources, habitats. This action could be implemented by new Departmental policies or adoption of regulations (as with climate adaptation policies, or preferences for living shorelines, for example), or by legislation which either expressly declares such a policy or directs state environmental and resources agencies to adopt such policies. In Pennsylvania, the state constitution can be interpreted in light of recent court decisions to require adoption of such a policy by state agencies to “prohibit degradation, diminution and depletion of natural resources.” Include prohibitions on using compensatory mitigation to offset or supplant conservation investments from the general fund. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation*

ADVANCE PROTECTION OF HISTORIC, CULTURAL, AND SCENIC RESOURCES

7.1 Improve scenic resource assessments for transmission corridors and wind and solar generating facilities. Require evaluation of undergrounding of transmission and pipelines by public utility regulators. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation*

7.2 Adopt use of advanced scenic resource evaluation techniques and checklists, as the basic requirement for public utility commission reviews, and develop preferred compensatory measures for these particular kinds of impacts. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision*

7.3 Ensure protection of viewsheds under state law, public utility regulation, or local land use regulations even where there is not a historic property affected – relying either on existing legislation (e.g., Maryland PSC authority to address “esthetic” impacts) or with new legislation allowing consideration of such impacts. *Implementation Method: Rulemaking, Commission Decision, Legislation*

7.4 Expand advanced identification of cultural landscapes where possible. Approaches like the map-based tools used for natural heritage and sensitive habitat early identification could help project planners consider avoidance and minimization, and help permitting agencies identify potential cumulative impacts in areas of possible future interest for linear facilities or wind and solar generation. Advance identification should improve siting decisions with

respect to cultural landscapes well before the mitigation stage. *Implementation Method: Administrative Interpretation, Education and Outreach*

PUBLIC TRUST

8.1 The Pennsylvania Const. Art. 1 §27 should be interpreted as a basis for the following actions:

- Duty of Commonwealth to inventory and prioritize landscape resources (as the corpus of the trust that must be maintained and preserved)
- Duty of Commonwealth to achieve net gain/no net loss on all resources;
- Apply trust responsibility to all 401 water quality certifications, to expand their scope;
- Duty of Public Utility Commission for trusteeship in transmission line siting evaluations;
- Duty of Public Utility Commission to develop criteria for pipeline siting within its jurisdiction;
- Duty of state agencies and commissions to require adequate compensation, offset, and mitigation for all occupation of state-owned natural resource lands and waters.

Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation, Education and Outreach

8.2 Virginia’s general assembly can use Art. XI, §1 of Va. Constitution to enact legislation protecting other public trust resources, including protecting lands, waters, and other natural resources from impairment, as it has for VMRC resources. *Implementation Method: Legislation*

8.3 Maryland could adopt a constitutional amendment protecting the environment, and Virginia could amend its existing amendment to make it self-executing, both of which could support additional measures for avoidance, minimization, and compensatory mitigation for a wider array of resources. *Implementation Method: Constitutional Amendment*

WATER RESOURCES PERMITTING

9.1 Coordinate action on all relevant permits associated with a single project, including coordination of consistent, comprehensive landscape-scale evaluation and mitigation. *Implementation Method: Administrative Interpretation, Rulemaking, Legislation*

9.2 Incorporate watershed information into permit conditions, including offsets/mitigation. *Implementation Method: Administrative Interpretation, Rulemaking.*

9.3 Determine when use of Corps NWP or SPGP is not appropriate (viz. multiple stream and wetland crossings), and when individual permits should be required with alternatives analysis and site-specific review, as well as cumulative impacts assessment. Strictly apply avoidance and minimization requirements and require individualized review and coordination of mitigation. *Implementation Method: Administrative Interpretation, Rulemaking*

FOREST CONSERVATION

10.1 Each state water quality regulator should explicitly require forest impact evaluation as part of each state’s § 401 water quality certification methodology. Link determination of forest landscape impacts and opportunities for compensatory mitigation to the Bay TMDL

<p>and Bay Model, as well as to state requirements. Adopt or modify Virginia’s detailed forest impact assessment methodology as a way of determining <i>direct and indirect impacts</i> across multiple forest parcels (public and private) in order to develop a mitigation methodology that is clear and reproducible. <i>Implementation Method: Administrative Interpretation, Rulemaking</i></p>
<p>10.2 Use the forest mitigation methodology on both private and public lands as a condition of public utility approvals of transmission and new generation capacity. <i>Implementation Method: Administrative Interpretation, Commission Decision, Rulemaking</i></p>
<p>10.3 Adopt additional forest conservation requirements. Maryland can improve on its existing Forest Conservation Act (FCA) to target afforestation and reforestation, such as recent proposed legislation seeking to further define priority areas. Pennsylvania and Virginia may adopt legislation expressly requiring forest mitigation for certain large-scale impacts occurring in watersheds relevant to Bay TMDL goals. Even if a Maryland-style FCA is not politically feasible, it may be possible to create such requirements for specific kinds of activities (transmission, pipelines, solar facilities) resulting in land disturbance. <i>Implementation Method: Legislation</i></p>
<p>EASEMENT LANDS</p>
<p>11.1 Enact exclusions of some or all conservation easement lands from eminent domain under state law or require additional showings related to physical necessity and lack of practicable alternatives. <i>Implementation Method: Legislation</i></p>
<p>11.2 Legislation can define the compensatory mitigation required for impairment of an easement, including whether a compensation ratio greater than 1:1 should be required.</p> <ul style="list-style-type: none"> • Define offsets that recognize that crossing of these lands with a linear energy feature needs to be offset by more than just funding for replacement of the physical occupation, but reflecting impairment of the forest/agricultural/recreational parcel for many landscape-level purposes • Define requirements for expenditure or offset in the same vicinity, serving same purpose or higher priority conservation purpose as defined by state policy (see above). <i>Implementation Method: Legislation</i>
<p>11.3 Legislation can define limits on solar/wind siting allowed on easement parcels. <i>Implementation Method: Legislation</i></p>
<p>11.4 Each state now requires some mitigation for direct impacts to state-owned lands. Each should complete adoption of offset/funding policies/regulations, and determine what mitigation for indirect impacts should be required. <i>Implementation Method: Administrative Interpretation, Rulemaking, Legislation</i></p>
<p>11.5 Avoidance of conservation lands by project developers can be improved by states continuing to integrate GIS data on conservation easements with their natural heritage and other data accessible to project developers and applicants. <i>Implementation Method: Administrative Interpretation, Education and Outreach</i></p>

FEDERAL CONSISTENCY UNDER THE COASTAL ZONE MANAGEMENT ACT

12.1 States that adopt implementable policies by statute or regulation, such as statewide mitigation requirements, or specific avoidance and minimization requirements, should submit these to NOAA for incorporation into the state’s approved CZMP enforceable policies so that they can apply these to federally authorized activities. *Implementation Method: Legislation, Rulemaking*

STRATEGICALLY SUPPORT SOME LOCAL LAND USE REGULATION

13.1 Under state programs, local land use regulations do have some opportunity where not preempted, to protect scenic viewsheds and ridgetops, to exclude generating facilities from certain areas of a county or township, and to direct compensatory activities to specific places or resources. Conservation partners and state agencies could develop guides in each state that define appropriate models for these ordinances, including procedures, elements, and identifying limitations provided in state law. *Implementation Method: Education and Outreach*

13.2 State agencies could provide incentives for the adoption of such ordinances in priority locations: Local governments have authority to affect the siting of wind and solar electric generating facilities either directly or through public utility regulatory deference. They can also provide for conservation of ridge tops under local ordinances. Local governments can designate local conservation investments that can be preferred for compensatory mitigation when linear energy facilities traverse local conservation lands/resources. *Implementation Method: Administrative Interpretation, Commission Decision, Legislation*

Public Utility Regulation

The laws and regulations governing approval by energy regulators provide varying degrees of authority to consider impacts on the environment and natural resources and to impose conditions and mitigation on siting of energy facilities. Certain natural gas pipelines and electric transmission lines require approval from FERC or state public utility commissions. Wind and solar electricity generating facility siting is subject to state public utility regulation in Maryland and Virginia.

Issuance of a FERC or state public utility certificate also grants the applicant for an electric transmission line or natural gas pipeline authority to use eminent domain to acquire rights-of-way over the lands of others, including lands in conservation status.

FERC Regulation

FERC approves interstate natural gas pipelines and some interstate electric transmission siting. FERC approvals preempt state public utility regulation and local land use regulation. Interstate natural gas pipelines need a “certificate of public convenience and necessity” (CPCN) from FERC under the Natural Gas Act. The basic statutory standard is whether the project is determined by FERC to be in the “public interest.”¹³ This evaluation is primarily based on a finding of economic benefit. However, if FERC determines that the economic benefits support issuance of the certificate, it further evaluates whether adverse impacts, including environmental impacts, can be offset or mitigated such that the activity remains in the public interest.¹⁴ This is a flexible standard largely committed to FERC’s discretion, subject to judicial review.

As for electric transmission corridors, under the Federal Power Act, a public utility or transmission utility may file an application with FERC for approval of the need for the siting of “national interest” high voltage transmission lines. FERC has jurisdiction only if a *state* public utility commission that has authority to approve the siting of such transmission facilities fails to act on the application for more than one year after the filing of an application.¹⁵

If FERC has jurisdiction over a pipeline or transmission project, the project undergoes environmental impact review under NEPA. FERC must identify and evaluate the potential impacts (direct, indirect, and cumulative) of the proposed action, alternatives to the proposed action, and mitigation measures. FERC prepares a draft and final Environmental Impact Statement (EIS) for major federal actions with a

¹³ 15 U.S.C. § 717f.

¹⁴ FERC, Statement of Policy: Certificate of New Interstate Natural Gas Pipeline Facilities, 88 FERC ¶ 61,227 (1999), available at <https://www.ferc.gov/legal/maj-ord-reg/PL99-3-000.pdf>, at 19: “[T]he Commission will proceed to evaluate the project by balancing the evidence of public benefits to be achieved against the residual adverse effects. This is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission then proceed to complete the environmental analysis where other interests are considered.”

¹⁵ 16 U.S.C. § 824p(b)(1)(C). *Piedmont Environmental Council v. FERC*, 558 F.3d 304 (4th Cir. 2009) (state denial of an application is not a failure to act).

potentially significant impact on the quality of the human environment. Or it may prepare an Environmental Assessment (EA) if the level of significance is uncertain or impacts can be mitigated below the threshold of significance, supporting issuance of a Finding of No Significant Impact (FONSI). Most large linear energy projects subject to FERC approval will require preparation of an EIS. The FERC process also triggers the need for consultation under the Endangered Species Act to assess effects on threatened or endangered species, and under the National Historic Preservation Act for adverse effects on historic properties and cultural landscapes.

Each state typically coordinates and submits comments to FERC reflecting the positions of its interested agencies. This includes detailed reviews by state (and some local) agencies leading to combined recommendations for conditions, mitigation, and alternatives (such as route alternatives) for FERC to evaluate and incorporate in the final federal agency action.¹⁶

In rendering its decision to issue or deny a CPCN, FERC must demonstrate that it has considered the information in its NEPA analysis and explain its decision. However, it is not obliged to incorporate state recommendations into its approval. FERC may attach any conditions it decides to adopt based on the record to the certificate approving the activity.

In December 2017, FERC announced that it would review and examine its Policy Statement on Certification of New Interstate Natural Gas Pipeline Facilities, issued in 1999.¹⁷ However, it is not clear whether the review is intended to expedite the approval process for CPCNs, or to take into account additional factors including potential economic duplication and cumulative impacts arising from multiple proposals. The 1999 Policy Statement¹⁸ was issued a decade before the shale gas hydraulic fracturing boom and before even more recent interest in constructing many new interstate pipelines in new places. That Policy Statement does not take into account many of the current conflicts and concerns arising from multiple pipeline proposals, and it treats environmental concerns as a constraint rather than as an equal factor in determining need and public convenience and necessity.¹⁹ FERC opened a docket on April 25, 2018 with a Notice of Inquiry, soliciting comment on a wide range of issues that it could address in a possible revised Policy Statement.²⁰ A revised policy statement could provide FERC with greater direction in assessing regional issues and environmental factors, and could address issues

¹⁶ See, e.g., Virginia Dept. of Environmental Quality, Coordinated review of Federal Energy Regulatory Commission Draft Environmental Impact Statement for the Atlantic Coast Pipeline (April 6, 2017) (containing over 100 recommendations).

¹⁷ FERC, News Release: FERC to Review its 1999 Pipeline Policy Statement (Dec. 21, 2017), available at <https://www.ferc.gov/media/news-releases/2017/2017-4/12-21-17.asp#.Wv7PC-4vzcs>.

¹⁸ FERC, Statement of Policy: Certificate of New Interstate Natural Gas Pipeline Facilities, 88 FERC ¶ 61,227 (1999), available at <https://www.ferc.gov/legal/maj-ord-reg/PL99-3-000.pdf>

¹⁹ Id, at 19.

²⁰ 83 Fed. Reg. 18020 (April 25, 2018). FERC extended the comment period until July 25, 2018. FERC expressed interest in receiving comments addressing four general areas: (1) how FERC determines need for the project, and specifically whether it should look beyond economic agreements between the pipeline and shippers, (2) issues related to the need for exercise of eminent domain by pipelines, and impacts on landowners, (3) consideration of environmental impacts, and specifically whether FERC should change the way it weighs environmental impacts vs. economic benefits when deciding on public convenience and necessity, and (4) effectiveness and efficiency of the application review process. 83 Fed. Reg. at 18030-18032.

such as mitigation. It could also provide guidance for weighing cumulative impacts and for considering additional alternatives (currently limited to no-action, system alternatives, design alternatives, and route alternatives).

FERC's existing processes for handling public comments on its environmental documents, and especially for accounting for whether comments received by FERC were considered and reflected in its final orders on natural gas pipelines, were severely criticized in a report issued by Department of Energy's Inspector General in May 2018. The IG found that "the lack of a consistent methodology could increase the risk that FERC may not address significant and impactful public comments," and there are no documented processes for determining that comments have been addressed in FERC orders. In response, FERC says that it intends to develop written procedures to ensure that its staff can consistently review and address comments.²¹

State Public Utility Regulation

State public utility regulators have jurisdiction over various types of electric transmission lines and electric power generation facilities, and only limited jurisdiction over natural gas pipelines. (State authority over pipelines is typically limited to intrastate pipelines, public utility rate regulation, and pipeline safety by agreement with the federal Pipeline and Hazardous Materials Safety Administration).

Their authority to impose conservation and mitigation conditions on certificates is defined and limited by state law. State agencies may conduct environmental reviews associated with these projects, which can lead to development of recommendations to the public utility regulator for certificate conditions. State environmental protection and natural resource agencies may also directly apply permit requirements to projects, except where preempted by the public utility statutes.

Pennsylvania

Electric Transmission Lines – Standards for Certificate

The Pennsylvania Public Utility Commission (PUC) has jurisdiction over siting of "high voltage" (100kv) electric transmission lines by public utilities.²² The proceeding is subject to public hearing and the PUC must find, among other factors, that the line will have "minimum adverse environmental impact, considering the electric power needs of the public, the state of available technology and the available alternatives."²³ Approved transmission lines are not subject to local land use and zoning requirements.

The application requires a statement of safety considerations, a description of studies "as to the projected environmental impact of the HV line as proposed and of the efforts which have been and which will be made to minimize the impact of the HV line upon the environment and upon scenic and historic areas, including but not limited to impacts, where applicable, upon land use, soil and sedimentation, plant and wildlife habitats, terrain, hydrology and landscape," a description of the efforts

²¹ E&E News, IG finds flaws in transparency of FERC reviews (May 30, 2018).

²² 52 Pa. Admin. Code 57.71, 57.72.

²³ 52 Pa. Admin. Code at 57.76.

of the applicant to locate and identify “archeologic, geologic, historic, scenic or wilderness areas of significance within 2 miles of the proposed right-of-way,” and a description of reasonable alternative routes and their merits and detriments.²⁴

Wind and Solar Siting

The PUC does not review *siting* of wind or solar electric generating facilities, even if sited by a public utility. Public utilities holding PUC certificates can offer any services authorized.²⁵ A competitive supplier of electricity selling power to end-use customers must hold a license from the PUC but there is no siting review; the PUC issues the license on finding that the applicant is “fit, willing and able to perform properly the service proposed and to conform to the provisions of this title and the lawful orders and regulations of the commission.”²⁶

In Pennsylvania, local land use planning and zoning is the chief constraint on siting of wind and solar electric generating facilities, along with any natural heritage review associated with the need for state environmental permits, such as for sediment and erosion control or water obstructions.

Pipelines

The PUC does not regulate the location of intrastate pipelines, but only the terms of intrastate shipment of natural gas and petroleum products through pipelines. (And, of course, siting of *interstate* natural gas pipeline projects is subject to FERC jurisdiction rather than to PUC regulation). However, a public utility holding a PUC certificate can use its eminent domain authority under state law to acquire land for a natural gas transmission pipeline intended to serve both in-state and out-of-state customers.²⁷

The PUC has adopted no regulations for siting of natural gas pipelines operated by public utilities, as it has only authority to determine whether services and facilities are “unreasonable, unsafe, inadequate, or unreasonably discriminatory, or otherwise in violation of the Public Utility Code.”²⁸ After notice and hearing, it can issue remedial orders related to operations, or can order changes in facilities.²⁹ Local governments cannot apply land use regulations to gas and gas liquid pipelines operated by a public utility.³⁰

²⁴ 52 Pa. Admin. Code 57.72(c)(6)-(10).

²⁵ 66 Pa. C.S. §§ 1101, 1102.

²⁶ 66 Pa. C.S. §2809.

²⁷ In Re: Condemnation by Sunoco Pipeline, L.P., 143 A.3d 1000 (Pa. Cmwlth.2016), *appeal denied* 164 A.3d 485 (Pa. 2016).

²⁸ 66 Pa. C.S. §1505(a). It can issue orders related to operations, or order changes in facilities, to meet these standards. The PUC has in 2018 suspended service on Sunoco’s Mariner East 1 pipeline, and suspended construction on Mariner East 2 to compel the company to address construction violations, damages associated with sinkholes in the vicinity of the pipelines, and reporting violations. In June 2018 the PUC voted to allow resumption of operation of Mariner East 1 while continuing the construction suspension on Mariner East 2.

²⁹ Id.

³⁰ The Delaware Riverkeeper Network v. Sunoco Pipeline, L.P. No. 952 C.D. 2017 (Pa. Cmwlth. Feb. 2018) (although PUC does not regulate locations of public utility pipelines, its jurisdiction preempts local land use regulation). “There is no specific statute and regulation that limits, let alone guides, Sunoco Pipeline, L.P.’s discretion to choose

Maryland

Electric Transmission Lines and Generating Facilities

The Maryland Public Service Commission (PSC) issues a Certificate of Public Convenience and Necessity (CPCN) for overhead transmission lines carrying more than 69Kv, and for the construction of most electricity generating facilities, including wind and solar facilities.³¹ Review by the relevant state environmental permitting agencies is coordinated through the state's Power Plant Research Program (PPRP). In considering whether to grant a CPCN, the PSC must take into account these agency recommendations, as well as the recommendation of each county or municipality where any portion of the facility would be located. If approved, the CPCN will contain all of the environmental conditions imposed by state permits. An approved project is exempt from the requirements of local zoning.³² Condemnation of property is authorized if the applicant has been granted a CPCN.³³

CPCN Exemption Process

Land-based wind energy projects that are designed to generate 70 MW or less can qualify for a CPCN exemption.³⁴ Exempt projects still require approval; however, this PSC review is limited to "ensuring the safety and reliability of the electric system."³⁵ The PSC has no authority over other siting issues under this exemption; but, in turn, other state and local regulations are *not* preempted.³⁶ A photovoltaic

the location of the ME2 Pipeline." (Judge Brobson, concurring and dissenting in part). *Accord*, Flynn v. Sunoco Pipeline, L.P. 942 C.D. 2017 (Pa. Comwlth. March 26, 2018) (PUC jurisdiction preempts local land use regulation).

³¹ Md. Ann. Code, Pub. Util. Cos. § 7-207. However, an electric power generating station does not include "an integral plant or unit less than or equal to 2,000 kilowatts if it is installed with equipment that prevents the flow of electricity to the electric system during time periods when the electric system is out of service." COMAR 20.79.01.02.

³² Md. Ann. Code, Pub. Util. Cos. §7-207. The recommendations of local governments "are advisory only and not controlling." *Howard County v. Potomac Elec. Power Co.*, 319 Md. 511, 526 (1990).

³³ Md. Ann. Code, Pub. Utils. § 7-207.

³⁴ Md. Ann. Code, Pub. Util. Cos. § 7-207.1(a) (onsite or wholesale land-based wind facilities 70 MW or less). A 25MW facility may also qualify for a CPCN exemption, but only if wholesaler and 10 percent of output used onsite. A person seeking to develop a smaller facility than 70 MW may choose to seek a CPCN rather than approval under the exemption. If a CPCN is granted, the facility would then be exempt from local zoning. E.g., *In the Matter of the Application of Dan's Mountain Wind Force, LLC for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9413. (Developer was granted CPCN exemption, but was blocked by amended zoning ordinance and denial of local land use approvals, so withdrew and filed for CPCN for 59.9 MW project in Allegany County).

³⁵ *Id.* § 7-207.1(d)(1).

³⁶ "It appears that when it enacted the CPCN exemption for small land-based wind generating stations in 2007, the General Assembly left all issues other than the safety of the reliability of the electric system to other State and local agencies. In our view, the General Assembly intended that potential impacts of CPCN-exempt wind farms upon public safety, health, environment and aesthetics, for example, be addressed through local regulation and review (which otherwise would be preempted by the Commission's issuance of a CPCN)." *In The Matter of the Application of Synergics Roth Rock Wind Energy, LLC and Synergics Wind Energy, LLC for an Exemption of the Certificate of Public Convenience and Necessity Requirement to Construct a 50 Mw Wind Generation Facility Located in Garrett County, Maryland*, PSC No. 9191, Order 83021, at 5-6 (Nov. 18, 2009).

system of 2 MW or more that is eligible for a CPCN exemption because of onsite use of the power must file an application for exemption and meet certain other requirements.³⁷

Standards for CPCN

In considering an application for a CPCN, the PSC must give “due consideration” to “the recommendation of the governing body of each county or municipal corporation in which any portion of the construction...is proposed to be located.”³⁸ The PSC must also give “due consideration” to the effect of the facilities on:

- (i) the stability and reliability of the electric system;
- (ii) economics;
- (iii) esthetics;
- (iv) historic sites;
- (v) aviation safety as determined by the Maryland Aviation Administration and the administrator of the Federal Aviation Administration;
- (vi) when applicable, air quality and water pollution; and
- (vii) the availability of means for the required timely disposal of wastes produced by any generating station.”³⁹

Beginning in October 2017, for a *generating station* the PSC *also* must give due consideration to:

- (i) the consistency of the application with the comprehensive plan and zoning of each county or municipal corporation where any portion of the generating station is proposed to be located; and
- (ii) the efforts to resolve any issues presented by a county or municipal corporation where any portion of the generating station is proposed to be located.⁴⁰

Beginning in October 2018, for construction of a new overhead transmission line the PSC must also give due consideration to:

- ... (ii) The *alternative routes* that the applicant considered, including the estimated capital and operating costs of each alternative route and a statement of the reason why the alternative route was rejected.⁴¹

Coordinated Review

³⁷ Md. Ann. Code, Pub. Util. Cos. § 7-207.2.

³⁸ Md. Ann. Code, Pub. Util. Cos. § 7-207(e)(1).

³⁹ *Id.* § 7-207(e)(2); the word “quality” was inserted after “air” in subparagraph (e)(2)(vi) by the General Assembly in 2018 to clarify that PSC review is not simply limited to air pollution. 2018 Sess. Chapter 283 (effective Oct. 1, 2018). Note that none of these express requirements includes habitat-related criteria.

⁴⁰ Md. Ann. Code, Pub. Util. Cos. § 7-207(e)(3).

⁴¹ Md. Ann. Code, Pub. Util. Cos. § 7-207(f)(1), added by 2018 Sess. Chapter 283. Other bills enacted in the 2018 session established additional public and landowner notification requirements for CPCN applications to construct transmission lines (2018 Sess. HB 784, HB 869)

The PPRP is responsible for coordinating review of the project by state environmental agencies and presenting the consolidated position of the state agencies to the PSC. The agencies are the Maryland Department of Natural Resources (MDNR), the Maryland Department of the Environment (MDE), Maryland's Department of Agriculture, Department of Business and Economic Development, Department of Planning, Department of Transportation, and the Maryland Energy Administration.⁴² The work of the PPRP begins before an application is submitted, as described by PPRP Staff Member John Sherwell in testimony submitted to the PSC:

- The PPRP review process usually begins well before an application is submitted to the PSC. Early in the process, PPRP meets with the developer and his or her representatives to identify any major issues and generally outlines what analysis or fieldwork needs to be accomplished as part of the formal application. It is to the benefit of all parties to come to an early agreement regarding various studies that need to be performed.
- Throughout the process, PPRP maintains an information flow through established representatives with the State agencies mentioned earlier. The goal is to insure that any and all concerns are identified early in the process so that they can be addressed, either through studies performed by the applicant or by PPRP. This safeguards both the State and the applicant against serious issues coming to light at the last moment, potentially delaying a needed project.
- This coordination takes the form of field visits to the proposed site, informational and status summaries sent periodically to all the agency representatives, and numerous meetings, both with the applicant and the agency representatives.⁴³

Siting and Conditions on CPCN

The PSC is required to weigh any positive impacts against any negative impacts, including both environmental and economic impacts.⁴⁴ According to the PSC, “[t]o justify issuance of a CPCN, [an applicant] has the burden to demonstrate that the benefits of the generating facility, including economic benefits, outweigh the environmental, safety, and societal costs of siting the generating facility [in the proposed location].”⁴⁵ The PSC may grant a CPCN subject to “conditions the Commission determines to be appropriate.”⁴⁶ The PSC may use conditions to ensure that the positive impacts of a project outweigh the negative impacts.⁴⁷

⁴² Md. Ann. Code. Nat. Res. §3-304.

⁴³ *In the Matter of the Application of Clipper Windpower*, Md. PSC No. 8938, Testimony of John Sherwell, at 3.

⁴⁴ See *Accokeek, Mattawoman, Piscataway Creeks Cmnty. Council v. Pub. Serv. Comm'n of Md.*, 451 Md. 1, *18 (2016).

⁴⁵ *In the Matter of the Application of Dominion Cove Point LNG, LP for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9318, Order 86372, at 63 (May 30, 2014).

⁴⁶ Md. Ann. Code, Pub. Util. Cos. §7-208(f)(1)(i).

⁴⁷ *In the Matter of the Application of Clipper Wind, Inc. for a Certificate of Public Convenience and Necessity*, Md. PSC No. 8938, Conditions Incorporated into the Certificate of Public Convenience and Necessity, at *5-*6 (proposed order dated Feb. 11, 2003, adopted by the PSC as modified on March 26, 2003).

Applying these standards, in 2017 the PSC denied a CPCN to a proposed wind energy facility in Allegany County. While finding that the project would produce “no adverse permanent impact on aviation safety, potable water supplies, electromagnetic interference, transportation, historic and cultural resources, disposal of waste, and the stability and reliability of the electric system,” the PSC nevertheless found that the project “will have an adverse impact on the *esthetics* of the local communities on and around Dan's Mountain....[and] that the adverse impact caused to the comfort of nearby residents by the noise produced and the shadow flicker perceived will not be fully mitigated by incorporating licensing conditions into a CPCN.”⁴⁸ Also in 2017 the PSC denied a CPCN for a 60 MW solar facility in Kent County based on impacts to agricultural, historic, and cultural resources.⁴⁹ This denial occurred even though the PPRP had developed substantial proposed conditions, including proposed requirements for dedication of agricultural easements, habitat maintenance requirements, lighting standards, and others.⁵⁰ A CPCN was granted for a 51.1 MW solar facility in Cambridge, incorporating PPRP conditions, including a vegetation plan, protection of pollinator habitat, and other requirements.⁵¹

The PSC is required to include in each certificate “the requirements of the federal and State environmental laws and standards that are identified by the Department of the Environment” and “the methods and conditions that the Commission determines are appropriate to comply with those environmental laws and standards.”⁵²

Alternate routes for high voltage transmission lines must be considered by the PSC under the statute⁵³ and regulations,⁵⁴ along with visual assessments and floodplain impacts,⁵⁵ description of the physical, biological, aesthetic and cultural features of the site and adjacent areas, and assessment of environmental impacts.⁵⁶ Although not currently required, in some parts of the country state regulators are evaluating “non-wire alternatives” to new transmission capacity, which allow utilities to recover costs for investments that reduce or supplant the need for new transmission.⁵⁷ Maryland’s PPRP is

⁴⁸ *In the Matter of the Application of Dan's Mountain Wind Force, LLC for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9413 (2017).

⁴⁹ *In the Matter of the Application of Mills Branch Solar, LLC for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9411, Order No. 88021, (Feb. 10, 2017).

⁵⁰ *Id.* The public utility judge in the PSC’s recommended decision gave the county’s recommendation that the CPCN be denied “significant weight” in reaching his decision, citing the county’s view that the project is contrary to its zoning requirements as well as the county’s concern with “the loss of prime farm soil from crop production, the negative impact upon the views cape, the harm to the tourist industry, the negative effect on historic sites and the Heritage Area, as well as the loss of local control over the type and location of industrial sized solar farm development in the County.”

⁵¹ *In the Matter of the Application of Egypt Road Solar, LLC for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9434 (Nov. 27, 2017).

⁵² Md. Ann. Code, Pub. Utils. § 7-208(g)(1). The PSC is barred from including any condition that “the Department of the Environment determines is inconsistent with federal and State environmental laws and standards.” *Id.* § 7-208(g)(2).

⁵³ *Id.* §§ 7-209, 7-207(f).

⁵⁴ COMAR 20.79.04.03

⁵⁵ COMAR 20.79.04.02.

⁵⁶ COMAR 20.79.04.04.

⁵⁷ J. St. John, A Snapshot of the US Gigawatt-Scale Non-Wires Alternatives Market (August 22, 2017) (GTM Research), <https://www.greentechmedia.com/articles/read/gtm-research-non-wires-alternatives->

studying this approach, including energy storage alternatives not currently required by the PSC when evaluating transmission proposals.

In contrast with transmission, there is no required alternative site analysis for *generating facilities* under PSC review. However, an alternatives analysis may be required under other state laws addressing project impacts on wetlands or cultural or historic resources.⁵⁸ If applicable, that siting assessment may become a component of the CPCN analysis.⁵⁹

Pipelines

The Maryland PSC does not regulate siting of natural gas pipelines. It does have statutory authority to establish and enforce safety standards for intrastate gas facilities.⁶⁰

Virginia

Electric Transmission Lines and Generating Facilities

Virginia requires a CPCN issued by the State Corporation Commission (SCC) for all transmission lines of 138Kv or more.⁶¹ The SCC “shall permit the construction and operation” of any electric generating facility, if the facility and any associated facilities “will have no material adverse effect upon reliability of electric service provided by any regulated public utility” and the facilities are not otherwise contrary to the public interest.⁶² A CPCN is issued for a generating facility constructed by a regulated public utility.⁶³ Electric generating facilities rated at 5 MW or less do not need SCC approval, but may be constructed after submittal of a letter to the SCC, if in compliance with all other laws.⁶⁴

CPCN Standards

State law requires the SCC, when considering transmission lines and other electrical utility facilities, to “give consideration to the effect” of the facility on the “environment and establish such conditions as may be desirable or necessary to *minimize adverse environmental impact.*” This includes giving “consideration to all reports that relate to the proposed facility by state agencies concerned with environmental protection,” as well as to adopted comprehensive land use plans if requested by a county or municipality in which the facility is to be built.⁶⁵

[market#gs.lfWgVJA](#). New York and California are leading the way to mandating consideration of alternatives; Certain other small-scale projects have been tested.

⁵⁸ See Md. Ann. Code, Fin. Inst. Art., § 13-1112.

⁵⁹ Cf. *In the Matter of the Application of Mills Branch Solar, LLC for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9411, Order No. 88021, at *43 (Jan. 10, 2017).

⁶⁰ Md. Ann. Code, Pub. Utils. §§ 2-113, 2-117(a), 2-121, 5-101, 11-102, 12-101 through 113, and 13-203.

⁶¹ VA CODE § 56-265.2(A).

⁶² *Id.* § 56-580 D.

⁶³ *Id.*

⁶⁴ 20 VAC 5-302-10. The SCC lists a number of such filings for small solar farms.

⁶⁵ VA Code § 56-46.1A. Emphasis supplied.

However, the law provides that any permit or approval issued by a federal, state, or local governmental entity that is *legally responsible* for regulating “environmental impact and mitigating adverse environmental impact” is “deemed to satisfy the requirements of this section” with respect to “all matters that are governed by the permit or approval” or that are within the authority of, and were considered by, the entity issuing the permit or approval.⁶⁶ The SCC cannot add its own conditions beyond those imposed or considered by the legally responsible regulator in subjects committed to the jurisdiction of that regulator.

Identical environmental consideration provisions apply to approval of electrical generating facilities,⁶⁷ but the SCC must also consider impacts of the proposed project on economic development and on electrical service reliability.⁶⁸ The SCC has noted that the statute “does not require the Commission to find any particular level of environmental benefit, or an absence of environmental harm, as a precondition to approval” of these facilities.⁶⁹

A bill in the General Assembly 2018 Session would have removed the provision that prohibits the SCC from imposing conditions related to “matters” that are within the authority of another permitting entity. Although not enacted, it would also have allowed the SCC to consider “environmental effects not expressly governed by a permit or expressly considered by a permitting authority, including carbon emissions and the overall impacts of new and existing facilities on the health and welfare of the residents of the Commonwealth.”⁷⁰

In approving a *transmission line*, the SCC must determine that the line is needed, and that the corridor or route the line is to follow “will reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned.”⁷¹

For public utilities purchasing or constructing generating facilities to sell electricity to consumers, an analysis of alternatives is required. However, the SCC does not review alternatives for non-utility generator applicants.⁷²

⁶⁶ *Id.* (emphasis supplied). This proviso includes other specific public interest issues such as building codes, transportation plans, and public safety plans.

⁶⁷ Va. Code § 56-580. Except for small renewable energy projects that are permitted by DEQ under a “permit-by-rule” which includes various environmental provisions. Va. Code § 10.1-1197.5 et seq.

⁶⁸ *Id.*; see also § 56-596 A (“In all relevant proceedings pursuant to this Act, the Commission shall take into consideration, among other things, the goal of economic development in the Commonwealth.”).

⁶⁹ *Application of Highland New Wind Development, LLC, Va. State Corp. Comm’n, Case No. PUE-2005-00101, Final Order, at *7 (Dec. 20, 2007).*

⁷⁰ HB 33 (2018 Session), would have amended §§ 56-46.1, 56-580.

⁷¹ Va. Code § 56-46.1.B. Environment includes “historic” as well as consideration of probable effects of the line on health and safety in the area concerned. Va. Code § 56-46.1D. Another bill, introduced in the 2016 Session, but not enacted, would have required the SCC to first avoid harm to natural and cultural resources, rather than just to “reasonably minimize” harm as under current law. HB 908 (2016 Session).

⁷² Va. Code § 56-585.1 A 6; see also *Application of Virginia Electric and Power Company For Approval and certification of the proposed Remington Solar Facility, Va. SCC No. PUE-2016-00048, Final Order, at *9 (Feb. 1, 2017).*

Coordinated Review and CPCN Conditions

The Virginia Department of Environmental Quality (DEQ) coordinates state agency review and submittal of comments to the SCC. The statute ensures that the SCC permitting authority does not overlap with other federal, state, or local permitting process. For example, when land use issues are considered by a local government through a local zoning process, those issues cannot be considered by the SCC when determining whether to issue a permit and in determining what conditions to include.⁷³

The SCC has imposed conditions—when recommended by DEQ—regarding avoidance of impacts to wetlands, protecting threatened and endangered species, and protecting natural resources during construction of a utility-scale wind facility.⁷⁴ For example, the SCC recently approved CPCNs for a number of solar farms in Virginia, including three in 2016 in Powhatan, Louisa, and Isle of Wight Counties.⁷⁵ The DEQ report recommended environmental conditions. These included requirements for on-site delineation of wetlands and stream crossing, and avoidance and minimization of impacts; coordination with the Department of Conservation and Recreation’s (DCR’s) Division of Natural Heritage on recommendations to protect natural heritage resources, coordination with the Department of Game and Inland Fisheries (DGIF) and the U.S. Fish & Wildlife Service to protect the northern long-eared-bat, coordination as necessary to minimize impacts to wildlife, natural resources, and historic and archeological resources, and various pollution prevention requirements. The SCC incorporated these recommendations into the certificates without modification.⁷⁶

The SCC is currently considering a CPCN application for a 500 MW photovoltaic solar farm on 3500 acres in Spotsylvania County; certificate conditions are under development.⁷⁷ Through 2017, 631 MW of solar generation capacity has been constructed, but no commercial scale wind facilities.

Virginia DCR has developed a Solar Site Pollinator/Bird Habitat Scorecard. A solar site with excellent habitat is vegetated with native species including a mix of warm season grasses and a diversity of pollinator plants amidst and surrounding the solar panels. In this “panel zone,” the herbaceous vegetation is mowed only during the dormant season, and invasive species and fescue are removed.

⁷³ See *Application of Highland New Wind Development*, LLC, Va. State Corp. Comm’n, Case No. PUE-2005-00101, Final Order, at *6-*7; see also *Application of Virginia Electric and Power Company*, Va. SCC No. PUE-2016-00048, Final Order, at *3-*4, *8 (adopting conditions recommended by DEQ regarding environmental impacts).

⁷⁴ *Application of Highland New Wind Development* at *9.

⁷⁵ *Application of Virginia Electric and Power Company for Approval and certification for the proposed 2016 Solar Projects pursuant to §§ 56-580 D and 56-46.1 of the Code of Virginia*, Va. State Corp. Comm’n, Case No. PUE-2015-00104 (June 30, 2016). The SCC notes that the General Assembly has made “small renewable energy projects” a matter of public interest and directed that the SCC “liberally construe” the requirements of law in determining whether to approve such facilities. *Id.* at 8.

⁷⁶ The SCC observed that “We must consider environmental impact” but that “[t]he relevant statutes, however, do not require the Commission to find any particular level of environmental benefit, or an absence of environmental harm, as a precondition to approval.” *Id.* at 11-12.

⁷⁷ *Pleinmont Solar LLC et al – Joint Application for Certificates of Public Convenience and Necessity for a Nominal 500 MW Generating Facility in Spotsylvania County*, Va. State Corp. Comm’n, Case No. PUR-2017-00162 (filed Nov. 29, 2017). Hearings are set in May and July, 2018. (Microsoft has agreed to take 315 MW of the output).

Native plants including appropriate woody species are planted on the buffer land surrounding the panel zone.⁷⁸

Permit-By-Rule for Certain Wind and Solar Facilities

For renewable energy (wind and solar) electric generating facilities designed to generate 150 MW or less, the site-specific environmental review otherwise conducted by the SCC is replaced by a “permit by rule (PBR)” issued by the Virginia DEQ.⁷⁹ Any such permit must include 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.”⁸⁰ It must also include a certification that the applicant “has applied for or obtained all necessary environmental permits.”⁸¹ No analysis of alternatives is required by the PBR statute or the implementing regulations.

Under the PBR, if the DEQ determines that “significant adverse impacts to wildlife or historic resources are likely,” the applicant must submit “a mitigation plan detailing 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.”⁸² The existence of bats, a hibernaculum, or state-listed threatened and endangered wildlife within the project disturbance zone constitute “significant adverse impacts to wildlife.”⁸³ The approval of a permit is contingent on a determination by DEQ that a mitigation plan has been submitted that meets these requirements. Criteria for a satisfactory mitigation plan are specified in DEQ’s regulations. These include some avoidance requirements as part of the mitigation plan, where adverse effects are identified.⁸⁴

Detailed PBR regulations were adopted for wind facilities in 2010 (updated in 2012 and 2017), and for solar facilities in 2012 (updated in 2017).⁸⁵ These specify detailed information that must be submitted by applicants to address “beneficial and adverse effects on natural resources,” including requirements for desktop analyses and for field studies of breeding birds, nonavian resources, raptor migration, historic resources, and special requirements for study of avian resources in all state-designated “Coastal Avian Protection Zones” (CAPZs), as well as identification of data to be consulted.⁸⁶ The CAPZs were created in

⁷⁸ <http://www.dcr.virginia.gov/natural-heritage/document/va-solar-site-pollinator-bird-habitat-scorecard.pdf>

⁷⁹ Va. Code § 10.1-1197.6. This threshold was raised from 100 MW to 150 MW in an amendment enacted in 2017 (2017 Sess., Chapter 368). Va. Code § 10.1-1197.5. Note that for any small renewable energy facilities that are owned or operated by a regulated *utility*, a certificate of public convenience and necessity was still needed; but in 2017 the law was amended to allow these also to use the Permit by Rule. Va. Code § 10.1-1197.8 B.

⁸⁰ *Id.* § 10.1-1197.6 B(2).

⁸¹ *Id.* § 10.1-1197.6 B(12).

⁸² *Id.* § 10.1-1197.6 B(8).

⁸³ 9 VAC 15-40-50 A. “Significant adverse impacts” are also deemed to occur if the area of distance is within one mile of a known or potential sea turtle nesting beach. *Id.* Under certain conditions, sites within the Coastal Avian Protection Zone also present “significant adverse impacts.” *Id.* The existence of other impacts on wildlife does not qualify as “significant adverse impacts.” *Id.*; see *Karr v. Virginia Dept. of Env'tl. Quality*, 789 S.E.2d 121, 131-32 (Va. App. 2016). Finally, “significant adverse impacts” to historic resources are deemed to occur only when a “proposed project is likely to diminish significantly any aspect of a historic resource's integrity.” 9 VAC 15-40-50 B.

⁸⁴ See 9 VAC 15-40-60, 9 VAC 15-60-60

⁸⁵ 9 VAC 15-40-10 et seq. (wind), 9 VAC 15-60-10 et seq. (solar).

⁸⁶ 9 VAC 15-40-40, 9 VAC 15-60-40.

2010 initially to assist wind energy applicants, but were further applied to assist solar applicants. The CAPZ map was created by a collaboration of state agencies and university researchers, and is housed on Virginia's Coastal GEMS geospatial data management system.⁸⁷ Mitigation measures are required for significant adverse impacts to wildlife and historic resources, with detailed requirements and standards.

Only one permit by rule application has been granted for a wind project. In its letter approving the Rocky Forge Wind project, the DEQ included several recommended siting-related conditions recommended by DCR.⁸⁸ The DEQ approval recommends that the applicant "site the wind turbines in a manner that would reduce visual impacts to the James River and surrounding scenic byways, and preserve the surrounding forest corridors to the greatest extent practical."⁸⁹ Changes in tower locations within the site are "strongly encouraged." DEQ also recommended "minimizing project fragmentation as well as the project's overall footprint."

Dozens of notices of intent have been filed with DEQ for solar facility PBRs, and DEQ has issued sixteen PBRs for solar facilities that have met the requirements of the regulations.⁹⁰

Pipelines

The SCC regulates only intrastate natural gas and liquids pipelines. It does not review siting; it has jurisdiction to inspect pipelines for safe operation and to enforce safety standards.⁹¹

Other Information

All three states can take certain environmental and natural resources issues and alternatives into account when reviewing the siting of electric transmission lines. Maryland's PSC and Virginia's SCC have authority to take some siting considerations into account when reviewing proposed wind and solar generating facilities and their impacts, and may deny applications or impose conditions based on such considerations; although there is no required analysis of alternative sites. Pennsylvania's PUC does not review siting considerations for generating facilities.

In a number of states, issues affecting siting of wind and solar generating facilities are substantially influenced by local government decisions. State land use boards or state energy siting boards may have jurisdiction to override local decisions or to make the decision in the first instance in several states. In

⁸⁷ Each zone has different requirements related to species and habitats in these zones; the solar PBR primarily requires payment by solar applicants into research funds to support research in certain zones (\$1000/MW rated capacity), while the wind PBR specifies field research requirements and mitigation.

⁸⁸ The DEQ also incorporated the Mitigation Plan requirements endorsed by the Department of Game and Inland Fisheries (DGIF) regarding timing of tree removal to protect bats, and various other provisions relating to avian and bat species.

⁸⁹ Letter from Va. Dep't of Env't Quality Approving Rocky Forge Wind Permit By Rule Application, at 3 (Mar. 2, 2017). The letter also included other recommended conditions unrelated to siting issues.

⁹⁰ <https://www.deq.virginia.gov/Programs/RenewableEnergy/PermittingCompliance.aspx>

⁹¹ Virginia SCC, Case No. PUE-1989-00052 (adopting 49 C.F.R. Parts 191, 192, 193, and 199 as minimum gas pipeline safety standards in Virginia). Virginia SCC, Case No. PUE-1994-00070 (adopting Parts 195 and 199 as minimum intrastate hazardous liquids pipeline safety standards). The Commission is authorized to enforce the standards for natural gas facilities, and liquid pipeline facilities. Va. Code § 56-257.2 B, § 56-555.

Oregon, which has a rigorous state land use planning law with review of local zoning decisions by the Land Use Board of Appeals, the state land use board recently acted to overrule a local government’s approval of a commercial-scale solar farm on 80 acres of high-value farmland in Jackson County, near Medford. The Board found that the county had not made the requisite findings that would allow siting of an “industrial use” on rural lands outside an urban growth boundary (viz. significant comparative advantage due to its location near other uses or activities).⁹²

Some states have enacted laws establishing state energy siting boards or commissions in order to address particularly large facilities or specific types of facilities. Washington state and Ohio both have such boards, as does New Hampshire.⁹³ New York has provided such state review for wind facilities over 25 MW, as an effort to prevent local governments from reviewing and blocking such facilities under local zoning laws; the New York law provides for some local participation on the state board when reviewing these facilities. These state siting boards can override or take the place of local decisions. Washington’s Energy Facility Site Evaluation Council in April 2018 agreed to review Kittitas County’s denial of zoning approval for a 200-acre solar farm.⁹⁴

New Hampshire’s Site Evaluation Committee addresses transmission corridor siting as well, and recently rejected the Northern Pass Transmission Project, finding that benefits to the state did not outweigh the costs, when taking into account issues like habitat, visual impacts, and other considerations.⁹⁵

It is not clear that state siting boards have particular advantages over public utility regulators, although they may have a more diverse mandate, mission, or membership. Many of these functions are performed by public utility regulators in other states.

Recommendations

- The states should develop a set of well-supported landscape analyses and consistent mitigation conditions reflecting habitat and watershed impacts and conservation goals, using a consistent methodology among all three states. This can be based on common natural heritage priorities (discussed below) and on use of the Bay model. Such approaches should be used to support FERC consideration of (1) alternatives, and (2) large-scale mitigation requirements. FERC is required to take a hard look at alternatives, environmental impacts (including cumulative impacts), and mitigation, and to respond to all substantive comments when developing a final EIS. A unified state approach based on a transparent, reproducible, methodology is more likely to produce results in the FERC license conditions, or denial of a certificate. When appropriate,

⁹² 1000 Friends of Oregon v. Jackson County, LUBA No. 2017-066 (Oct. 27, 2017), at <https://www.oregon.gov/LUBA/docs/Opinions/2017/10-17/17066.pdf>. The company appealed, but on May 31, 2018, the Oregon Court of Appeals declined to reinstate the county decision pending further review. See also P. Danko, *Another Willamette Valley county says no to solar on prime farmland*. Portland Business Journal (May 3, 2018).

⁹³ See American Planning Association, *Planning for Wind Energy* (PAS Report Number 566 (2011) (Table 4.1).

⁹⁴ H. Bernton, *Solar Panels of farmland? In Central Washington, that stirs a fight*. Seattle Times (April. 27, 2018).

⁹⁵ Saqib Rahim, “Northern Pass Denial in HN upends Mass. energy plan,” Energy Wire (Feb. 7, 2018.)

states should combine to request that FERC prepare regional and programmatic EISs in order to identify alternatives and address both cumulative impacts and tradeoffs of multiple proposals affecting the same landscapes. *Implementation Method: Administrative Interpretation*

- Participate in FERC’s newly launched review of its 1999 natural gas pipeline policy to ensure that FERC takes into account landscape-level concerns important to states. Advocate that FERC: adopt natural resource protection goals among its policy elements; adopt preferences for co-location of pipeline facilities (except where these will cause additional impacts to important natural heritage areas identified by states); minimize landscape disruption/fragmentation of conservation lands; endorse compensatory mitigation for conservation lands. Although the public comment period on the initial Notice of Inquiry closed on July 25, 2018, FERC may continue additional activity in this docket, and may even seek further comment on a proposed policy. When and if FERC adopts a revised policy, pursue implementation strategies that support regional analyses and consideration of cumulative impacts. *Implementation Method: Administrative Interpretation*
- For electric transmission lines, advocate with state public utility regulators to adopt preferences for *avoidance and minimization* of impacts on natural heritage landscapes important in the state and region, and then to recognize compensatory offsets *after* such avoidance and minimization. The commissions could adopt this standard under existing law. Under current law the Pennsylvania PUC is to find that a proposed line will have “minimum adverse environmental impact, considering...the available alternatives.” The Maryland PSC must give “due consideration” to “aesthetics; historic sites; ... [and] when applicable, air quality and water pollution” and must evaluate “alternative routes” for overhead transmission lines, and must determine that benefits outweigh impacts. The Virginia SCC is to establish “such conditions as may be desirable or necessary to minimize adverse environmental impact” and “reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned.” (52 Pa. Admin. Code 57.76, Md. Ann. Code, Pub. Util. Cos. § 7-207, Va. Code § 56-580). The *minimization or due consideration goal* could be defined by the regulators or in legislation by each state legislature as: “first avoid, then minimize, then compensate for unavoidable impacts.” This formulation could apply either on the landscape generally or to specific areas or landscape types defined as having specific natural resource or cultural resource values or designations. New legislation could require public utility regulators to find that applicants have demonstrated avoidance of impacts to natural and cultural resources as a first order strategy. Virginia’s DEQ regulations for permit-by-rule for smaller solar and wind facilities include some avoidance requirements where adverse impacts are identified. *Implementation Method: Administrative Interpretation, Commission Decision or Policy, Legislation*
- Amend statutes/rules to require alternatives analysis where not required currently. Rely on Pennsylvania public trust doctrine (discussed below) if there is a need to do this without statutory amendment in Pennsylvania. *Implementation Method: Rulemaking, Legislation*

- State legislation or public utility regulatory policy could require the public utility regulators to consider and evaluate non-wire alternatives to the construction of new transmission (or the replacement of transmission capacity), as a necessary element of the alternatives analysis. *Implementation Method: Commission Decision or Policy, Legislation*
- State environmental and resource agency reviews and comments supporting public utility decision processes could adopt explicit preferences for siting of new generating facilities and transmission corridors wherever possible on disturbed lands and/or for co-location of transmission lines, except where this would cause additional adverse impacts to important natural heritage or cultural heritage areas. *Implementation Method: Administrative Interpretation*
- Consider adding site analysis to authorities for solar and wind siting: The Pennsylvania PUC does not regulate siting of these facilities. Legislation could address siting, and require consideration of siting and alternatives for these facilities. The Maryland PSC applies the same standards as for transmission (except for exempt wind facilities under 70 MW where there is no siting analysis); there is no required alternative site analysis for these facilities either above or below 70 MW. Legislation could require consideration of alternative sites. The Virginia SCC applies no alternatives analysis for non-utility generators; and there is no required alternative siting analysis for wind and solar under 150 MW under the permit-by-rule administered by DEQ. Legislation could require alternative siting analysis. *Implementation Method: Legislation*
- Legislation could be adopted in each state to discourage the location of solar facilities on prime farmland, where this would interfere with farming, and to require offset or replacement of farmland easements in a multiple ratio in areas where siting is approved. *Implementation Method: Legislation*
- Enforcement authority as to intrastate pipelines is available, but not siting approval. Regulators could use their limited authority prospectively by developing public utility enforcement criteria to require operators to identify avoidance and mitigation actions (as well as response actions) in sensitive natural areas such as karst areas and sensitive or unique habitats, and submission of reports to ensure safe operation in these areas. *Implementation Method: Commission Decision or Policy*
- Under state programs, local land use regulations have some opportunity where not preempted, to protect scenic viewsheds and ridgetops, to exclude generating facilities from certain areas of a county or township, and to direct compensatory activities to specific places or resources. Conservation partners and state agencies could develop guides in each state that define appropriate models for these ordinances, including procedures, elements, and identifying limitations provided in state law. *Implementation Method: Education and Outreach*

Water Resources – Water Quality Certification and Permits

The opportunity of states to review and veto or condition federally-permitted or authorized projects under the Clean Water Act’s provision for water quality certification is particularly powerful when states can support their findings. State permitting programs and the connection of upland activities to water quality in the Chesapeake also provide authority and potential opportunities for landscape-level evaluations.

Water Quality Certification

Section 401 of the federal Clean Water Act provides that projects that require federal approval must obtain a certification from each affected state that the authorized activity will not cause violations of state water quality standards.⁹⁶ Such 401 certification applies to such actions as interstate natural gas pipelines requiring a certificate from FERC and to applications of any project for a dredge and fill permit from the Army Corps of Engineers (such as certain stream crossings, wetland fills). The state has a reasonable time to make a decision to grant, condition, or deny certification, not to exceed a period of one year. States may elect to forego § 401 certification.⁹⁷ Denial of water quality certification by a state can halt a project.⁹⁸

In applying conditions to 401 certifications, states must link the conditions to protection of water quality. These are based on state water quality standards (narrative and numerical), as well as on state laws and policies that are designed to protect water quality including, but not limited to, state permit requirements.

In general, there are three strategies states can use in applying water quality certification to projects:

1. Incorporating the requirements associated with existing state permits and general permits.
2. Adding requirements that are intended to meet numerical and narrative water quality standards of affected waters.

⁹⁶ 33 U.S.C. §1341.

⁹⁷ West Virginia’s DEP, after its initial 401 certification for the Mountain Valley Pipeline was remanded on its own request from the U.S. Court of Appeals for the 4th Circuit, subsequently announced November 1, 2017, that it would waive certification, which allowed FERC’s approval to proceed.

⁹⁸ See *Constitution Pipeline Co. v. New York State Dept. Env’tl. Conservation*, 868 F.3d 87 (2d Cir. August 18, 2017) (upholding New York’s denial of water quality certification for interstate natural gas pipeline). FERC subsequently declined to proceed on the CPCN, finding that New York had denied certification within the time allotted. *Constitution Pipeline LLC*, 162 FERC ¶ 61,014 (Jan. 11, 2018). The Supreme Court denied review. *Constitution Pipeline Co., LLC. v. New York State Dept. Env’tl. Conservation*, No. 17-1009, cert. denied (U.S. Supreme Court, April 30, 2018). Because of the power of states in water quality certification, the Trump Administration’s recently proposed infrastructure legislative framework asks Congress to consider limiting, or shortening the time frame for, state review. <https://www.whitehouse.gov/wp-content/uploads/2018/02/INFRASTRUCTURE-211.pdf>

3. Using the purpose and policy provisions of state laws protecting water quality to add requirements that meet these objectives in the affected watersheds.

States should use transparent and well-documented methods when conducting § 401 certifications. Federal courts of appeal review these decisions under the deferential “arbitrary and capricious” standards of the Administrative Procedure Act.⁹⁹

States can also take advantage of the substantial information now available because of the Chesapeake Bay TMDL and the update of the Bay model (discussed below), to support placing § 401 certification requirements and conditions on applicants related to actions that will affect the achievement of required water quality targets.

Federal and State Permits

Where energy projects affect waters of the United States, they will need Corps of Engineers permits under Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. In some instances, these will be individual permits with their own environmental review and public comment process. However, for linear pipeline and transmission projects in the region, where they affect relatively small areas of waters or wetlands at each stream or wetland crossing site, the Corps has issued certain nationwide (NWP-12) or programmatic general permits (PASPGP-5, MDSPGP-5) to cover these activities.¹⁰⁰

NWP 12, which currently applies in Virginia,¹⁰¹ authorizes “discharges of dredged or fill material into waters of the United States and structures or work in navigable waters for crossing those waters associated with the construction, maintenance, or repair of utility lines.”¹⁰² Utility lines are defined as

⁹⁹ *Del. Riverkeeper Network v. Sec. Pennsylvania Dept of Env'tl. Protection*, 833 F.3d 360 (3d Cir. 2016) (upholding Pennsylvania DEP's certification). *Constitution Pipeline Co. v. New York State Dept. Env'tl. Conservation*, 868 F.3d 87 (2d Cir. 2017) (upholding New York's denial of water quality certification). *Cf. City of Green, Ohio v. Nexus Gas Transmission LLC*, No. 17-4016 (6th Cir. Nov. 22, 2017) (granting stay on pipeline construction where Ohio EPA failed to follow its own wetland assessment methodology when granting 401 certification); however, the parties subsequently settled the case based on dedication of parkland, new roadway agreements, and payments to city. <https://www.cityofgreen.org/nexus-pipeline-information>

¹⁰⁰ Uses of these permits are limited to impacts of less than 1 acre or 1000 linear feet of stream in Pennsylvania, 2 acres or 2000 linear feet of stream in Maryland, and ½ acre of waters for NWP-12 in Virginia. These apply to each distinct crossing, however. In Pennsylvania and Maryland general permit conditions relate to state permit schemes for similar activities. Virginia conditioned its § 401 certification of NWP-12 on (1) the activities not being associated with a surface water withdrawal or transport of non-potable raw surface water except for the purpose of hydrostatic testing and when associated discharges are authorized by a VPDES permit, if required; (2) compensatory mitigation meeting the requirements in the Code of Virginia, Section 62.1-44.15:23; and (3) temporary diversions of surface water associated with "pump arounds" during the construction of utility crossings are allowed.

¹⁰¹ U.S. Army Corps of Engineers, *2017 Nationwide Permits, General Conditions, District Engineer's Decision, Further Information, and Definitions 7*, http://www.usace.army.mil/Portals/2/docs/civilworks/nwp/2017/nwp2017_general_conditions.pdf?ver=2017-04-27-084727-000.

¹⁰² 82 Fed. Reg. 1860, 1985 (Jan. 6, 2017).

any pipe or pipeline for transportation of any gaseous, liquid, liquescent, or slurry substance for any purpose, and any cable, line, or wire for transmission of electrical energy or communications. In Maryland and Pennsylvania, the Baltimore, Pittsburgh, and Philadelphia Districts of the Corps in 2017 suspended the use of NWP 12.¹⁰³ In these states in the Chesapeake watershed, the Corps instead uses the Pennsylvania State Programmatic General Permit-5 (“PASPGP-5”)¹⁰⁴ and Maryland State Programmatic General Permit-5 (“MDSPGP-5”).¹⁰⁵

The states conditioned their § 401 certifications for these nationwide and general permits on a permittee’s obtaining all applicable *state* permits, licenses, and approvals. Thus, permittees using NWP-12 or the SPGP permits generally *do not need* to get an additional 401 certification unless required by some additional federal nexus.¹⁰⁶

State	Permit	401 Certification
MD	MDSPGP-5	http://www.nab.usace.army.mil/Portals/63/docs/Regulatory/MDE_WQC_CZMA_MDSPGP-5.pdf?ver=2017-04-06-130710-423
PA	PASPGP-5	https://www.pabulletin.com/secure/data/vol46/46-29/1215.html
VA	NWP 12	http://www.deq.virginia.gov/Portals/0/DEQ/Water/WetlandsStreams/Final%20401%20Certification%202017%20NWP%20with%20typos%20corrected.pdf?ver=2017-05-01-135819-313

Linear pipeline and transmission projects that have multiple but distant crossings may use the Corps’ nationwide or general permits if under the impact size threshold for each crossing. If some crossings exceed these thresholds, however, then individual Corps of Engineers permits may be required for these even as the others are processed by the Corps under the NWP or SPGP.¹⁰⁷

The need for individual § 404 permits for certain crossings can be legally significant. In June 2018, the U.S. Court of Appeals for the Fourth Circuit suspended Mountain Valley Pipeline’s NWP-12 permit

¹⁰³ U.S. Army Corps of Engineers, *Special Public Notice # 17-14* (Mar. 20, 2017), <http://www.nab.usace.army.mil/Portals/63/docs/Regulatory/PN/SPN17-14.pdf?ver=2017-06-09-111207-683>.

¹⁰⁴ PASPGP-5 (July 1, 2016), <http://www.lrp.usace.army.mil/Portals/72/docs/Final%20PASPGP-5%2019%20Apr%202016.pdf?ver=2016-07-01-115912-327>

¹⁰⁵ MDSPGP-5 (Oct. 1, 2016), <http://www.nab.usace.army.mil/Portals/63/docs/Regulatory/MDSPGP-5.pdf>

¹⁰⁶ For example, in its review of the proposed Eastern Panhandle Expansion Project, to take natural gas to West Virginia from Pennsylvania under the Potomac River near Hancock Maryland, the Maryland Department of the Environment notes that “Generally, projects covered by MDSPGP-5 do not require a project-specific 401 Water Quality Certification.”

<http://mde.maryland.gov/programs/Water/WetlandsandWaterways/Documents/easternpandleapplicationfactsheet121917.pdf>

¹⁰⁷ E.g., U.S. Army Corps of Engineers, Baltimore District, CENAB-OPR-P-2015-01664-P06, [Sunoco] Pennsylvania Pipeline Project. Public Notice-16-45 (2016) (soliciting comment on two out of a total of 643 stream and 461 wetland crossings in 11 counties).

approvals while it considers a challenge by environmental organizations to the use of those authorizations for a series of 600 crossings, including several complex river crossings.¹⁰⁸

Apart from water quality certification and Corps permitting, linear projects typically also may need state permits dealing with water resources and water quality. State regulations specify conditions and requirements. The states and the Corps have simplified the permit application process to allow for joint permit applications where both have jurisdiction.

Chesapeake Bay TMDL and Watershed Implementation Plans

On December 29, 2010, the U.S. Environmental Protection Agency (EPA) established the Chesapeake Bay Total Maximum Daily Load (TMDL). It identified pollution reductions for nitrogen, phosphorus and sediment across the Bay jurisdictions, and set pollution limits necessary to meet water quality standards: 185.9 million pounds of nitrogen, 12.5 million pounds of phosphorus and 6.45 billion pounds of sediment per year – equal to a 25 percent reduction in nitrogen, 24 percent reduction in phosphorus and 20 percent reduction in sediment.

EPA states that “the pollution limits were further divided by jurisdiction and major river basin based on state-of-the-art modeling tools, extensive monitoring data, peer-reviewed science and close interaction with jurisdiction partners. The TMDL is designed to ensure that all pollution control measures needed to fully restore the Bay and its tidal rivers are in place by 2025.”¹⁰⁹The TMDL drives planning, permitting, and land conservation decisions in the affected states. Many of the techniques that will be needed to meet the TMDL goals deal with land cover, buffers, ecological restoration, and best management practices. Watershed Implementation Plans (WIPs) are the way the TMDL targets are allocated to the numerous tributaries of the Bay. They support strategies and actions by the state and local governments and others that affect the region’s ability to meet the requirements of the TMDL.¹¹⁰

The Chesapeake Bay Program recently updated its Chesapeake Bay model for the region. The Phase 6 Watershed Model makes predictions about land use and land cover, provides more categories of land use data, and improves the predictive capacity of the model by connecting numerous best management practices and land uses to modeled impacts on nutrient and sediment loadings.¹¹¹ By simulating future conditions, the updated model can make it possible to determine the likely impacts of land use changes, or of conservation and restoration activities, on the water quality of Bay and its tributaries. Thus, it can inform permitting decisions, water quality certifications, and determinations about land use and restoration targeting.

A recent presentation on the Bay Model identified the important factors involved in crediting land conservation and planning in the Bay TMDL:¹¹²

¹⁰⁸ Sierra Club v. Corps of Engineers, No. 18-1173 (LRH-2015-582-GBR) (4th Cir. June 21, 2018)(order granting stay).

¹⁰⁹ <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-tmdl-fact-sheet>

¹¹⁰ <https://www.epa.gov/chesapeake-bay-tmdl/chesapeake-bay-watershed-implementation-plans-wips>

¹¹¹ <https://www.chesapeakebay.net/what/programs/modeling>

¹¹² Peter Claggett, *Accounting for Growth in the Bay TMDL: Conservation Plus BMPs* (April 17, 2018).

Reducing non-point sources of pollution to the Bay requires:

1. Changing land cover conditions; or
2. Changing land management; or
3. Installing engineered solutions to reduce pollution.

Land conservation can improve water quality by:

1. Including the installation, monitoring, and maintenance of Best Management Practices (BMPs) on conserved lands (e.g., planting trees in the riparian zone);
2. Reducing the future conversion of land to more polluting land uses (e.g., placing an easement on land that would otherwise be developed).
3. Targeting conservation in areas which have a disproportionate impact on the Bay.

These land conservation categories can now be linked to projected water quality outcomes. Hence, decisions on where to focus compensatory mitigation actions and investments, and calculations of water quality impacts of linear energy projects can be supported by a tool recognized by all three states and by EPA. This means that piecemeal analysis permit-by-permit, and default reliance on standard conditions, can now be supplemented with landscape-level tools.

Pennsylvania

Water Quality Certification Process

Pennsylvania's Department of Environmental Protection (DEP) issues water quality certifications under section 401.¹¹³ Applicants must provide DEP with environmental assessments outlining potential impacts of the project.¹¹⁴ DEP has stated that, generally, projects that comply with all state environmental laws and regulations will receive certification.¹¹⁵ A recent 401 certification approved by DEP for a natural gas pipeline simply references required compliance with applicable Pennsylvania permits.¹¹⁶

Water quality certifications are linked to water quality standards and other requirements. US EPA encourages the protection of water quality by having states classify their waters into three tiers.¹¹⁷ Tier III (Outstanding Natural Resource Waters - "ONRW") is known in Pennsylvania as Exceptional Value Waters. Pennsylvania also protects its Tier II waters, or High Quality Waters, as well as Tier III waters.¹¹⁸

¹¹³ 25 PA CODE § 105.15(b).

¹¹⁴ 25 PA CODE § 105.15(b).

¹¹⁵ DEPT. OF ENVTL. PROTECTION, POLICY FOR STATE WATER QUALITY CERTIFICATION ISSUANCE FOR INTERSTATE NATURAL GAS TRANSMISSION PIPELINE PROJECTS REGULATED BY FERC 1 (2017), document expected to be finalized in first quarter 2019. <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-116811/310-2100-001.pdf>. This default assumption means that Pennsylvania rarely looks beyond the four corners of the permit application and standard permit conditions to determine cumulative effects.

¹¹⁶ DEPT. OF ENVTL. PROTECTION, WATER QUALITY CERTIFICATION, ATLANTIC SUNRISE PIPELINE PROJECT (APRIL 5, 2016). The water obstruction (chapter 105) and sediment and erosion (chapter 102) permits were issued by DEP more than a year later, on August 31, 2017.

¹¹⁷ 40 C.F.R. § 131.12 (2012).

¹¹⁸ 25 PA CODE § 93.4c (2017).

Pennsylvania prohibits activities that would degrade the quality or otherwise interfere with the use of those waters.¹¹⁹

Under the Clean Streams Law,¹²⁰ the DEP must consider Commonwealth policies when issuing permits and orders.¹²¹ It should also do so when issuing water quality certifications. Relevant policies in the law include the following relevant to water quality:

- (1) Clean, unpolluted streams are absolutely essential if Pennsylvania is to attract new manufacturing industries and to develop Pennsylvania's full share of the tourist industry;
- (2) Clean, unpolluted water is absolutely essential if Pennsylvanians are to have adequate outdoor recreational facilities in the decades ahead;
- (3) It is the objective of the Clean Streams Law not only to prevent further pollution of the waters of the Commonwealth, but also to reclaim and restore to a clean, unpolluted condition every stream in Pennsylvania that is presently polluted;
- (4) The prevention and elimination of water pollution is recognized as being directly related to the economic future of the Commonwealth; and
- (5) The achievement of the objective herein set forth requires a comprehensive program of watershed management and control.¹²²

To implement these policies, the Clean Streams Law requires the DEP to consider:

- (1) Water quality management and pollution control in the watershed as a whole;
- (2) The present and possible future uses of particular waters; . . .
- (5) The immediate and long-range economic impact upon the Commonwealth and its citizens.¹²³

Each of these considerations can be interpreted more expansively to require additional mitigation for projects. DEP could, for example, require mitigation that would “prevent further pollution”¹²⁴ or reclaim and restore¹²⁵ polluted waters. Additionally, DEP could be justified in requiring landscape-scale mitigation by considering the “long-range economic impact” of projects¹²⁶ and their impact on Pennsylvania’s tourism.¹²⁷

¹¹⁹ DEPT. OF ENVTL. PROTECTION, WATER QUALITY ANTIDegradation IMPLEMENTATION GUIDANCE, at i (2003), <http://www.eLibrary.dep.state.pa.us/dsweb/Get/Document-47704/391-0300-002.pdf>.

¹²⁰ 35 P.S. § 691.1 et seq. (2017).

¹²¹ 35 P.S. § 691.5(a) (2017) (“The department . . . in issuing orders or permits . . . shall[,] . . . for the purpose of implementing the declaration of policy set forth in section [691.4] of this act, consider [several factors].”).

¹²² 35 P.S. § 691.4 (2017).

¹²³ 35 P.S. § 691.5(a) (2017).

¹²⁴ 35 P.S. § 691.4(3) (2017).

¹²⁵ 35 P.S. § 691.4(3) (2017).

¹²⁶ 35 P.S. § 691.5(5) (2017).

¹²⁷ 35 P.S. § 691.4(2) (2017).

Chapter 105 Waterway Obstruction Permits

Chapter 105 water obstruction and encroachment permits are issued under Pennsylvania’s Dam Safety and Encroachments Act,¹²⁸ and are intended to, among other goals, “protect the natural resources, environmental rights and values secured by PA. Const. Art. I, § 27¹²⁹ and conserve and protect the water quality, natural regime and carrying capacity of watercourses.”¹³⁰ These permits regulate obstructions that would impede water flow in the Commonwealth’s waterways, and protect wetlands.¹³¹ Such permits are not required when an obstruction occurs in a stream or floodway with a drainage area of 100 acres or less; however, obstructions in wetlands must have a permit, regardless of the drainage area. Chapter 105 permits are not required for mere “aerial” crossings of non-navigable streams or wetlands by electric transmission lines, provided that the crossing is not in a state or federally-designated “wild or scenic river” or federal wilderness area.¹³²

While Chapter 105 permits are issued individually for each activity, some general permits are available for minor crossings resulting in water obstructions. General Permit BWEW-GP-5 applies to utility pipelines and transmission lines that cross water bodies – unless the crossing is within 100 feet of a body of water designated as or nominated for a national or state wild or scenic river, or within Exceptional Value waters and wetlands, or wetlands greater than 10 acres in size, or historic, cultural or archaeological sites on the National Register or Pennsylvania Inventory of Historical Places.¹³³ A general permit authorizing crossing or occupying the Commonwealth’s “submerged lands” also requires a separate license from the DEP.¹³⁴ Gas utility lines utilizing the general permit may not be greater than 36 inches in diameter.

Projects built in non-wetland waterbodies must be evaluated for their detrimental effect on the environment. If a project will impact “natural, scenic, historic or aesthetic values of the environment,” the DEP will perform a balancing test, comparing the public benefits of the project with the environmental harm.¹³⁵ These public benefits include, but are not limited to:

1. Correction and prevention of pollution
2. Protection of public health and safety
3. Reduction of flood damages
4. Development of energy resources
5. Creation or preservation of significant employment
6. Provision of public utility services

¹²⁸ 35 P.S. §§ 693.1-693.27 (2017).

¹²⁹ Pennsylvania’s Environmental Rights Amendment, discussed *infra*.

¹³⁰ 25 PA CODE § 105.2(4).

¹³¹ 25 PA CODE § 105.2(3); 25 PA CODE § 105.3(a)(4).

¹³² 25 PA CODE § 105.12(a).

¹³³ 25 Pa. Code Chapter 105. https://www.pacode.com/secure/data/025/chapter105/025_0105.pdf.

¹³⁴ Pa. Dept. Envntl. Protection, General Permit BWEW-GP-5, paragraph 4. See 32 P.S. §693.15, 25 Pa Code §105.31. (occupation of submerged lands). Licenses may be granted for “providing a public utility service” by a “public utility” or public service corporation. 25 Pa. Code §105.32, 105.33.

¹³⁵ 25 PA CODE § 105.16(a).

7. Other essential social and economic development which benefits a substantial portion of the public.¹³⁶

While linear energy projects may aid in the “provision of public utility services,” the DEP has the discretion to weigh the environmental harms more heavily.

If the water affected is an exceptional value wetland, the project applicant must demonstrate and DEP must find that the “water obstruction . . . will not have an *adverse impact* on the wetland,” that there are no practicable alternatives, that the project will not cause pollution that would interfere with uses of groundwater or surface water, and that “[t]he cumulative effect of this project and other projects will not result in the impairment of the Commonwealth’s exceptional value wetland resources;” and the applicant has the duty to replace affected wetlands in accordance with regulatory standards.¹³⁷ Pennsylvania’s compensatory wetland replacement criteria were adopted in 1991 and require replacement of areas, and functions and values, at a minimum ratio of 1:1, and siting of the compensatory mitigation adjacent to the affected wetland area unless the DEP approves an alternative, which must generally be within the same watershed.¹³⁸

For all other wetlands, the project applicant must demonstrate and DEP must find that “[t]he project will not have a *significant adverse impact* on the wetland,” measured by the area affected, the values and function of the wetland, and whether those values and functions are “unique to the area or region.”¹³⁹ DEP must further find that detrimental impacts will be minimized, that there are no practicable alternatives, and that “[t]he cumulative effect of this project and other projects will not result in a *major* impairment of this Commonwealth’s wetland resources.”¹⁴⁰ Replacement of affected wetlands is required, using the criteria above.

However, the DEP can grant a permit that will have a “significant adverse impact on a wetland” if it finds that a project “is necessary to abate a substantial threat” to public health or safety, and all ameliorative requirements are met.¹⁴¹ This test is unlikely to apply to linear energy projects.

The key language in these mandates is the need to consider cumulative effect. This allows DEP to consider the landscape-scale impacts of a linear project. Further, the mandate’s concern with wetlands of the entire Commonwealth suggests that off-site mitigation could be incorporated into the permit requirements.

Chapter 102 Erosion and Sediment Permits

These permits are meant to “protect, maintain, reclaim and restore water quality and the existing and designated uses of waters of [the] Commonwealth.”¹⁴² The permits include a Best Management Plan

¹³⁶ 25 PA CODE § 105.16(b).

¹³⁷ 25 PA CODE § 105.18a(a).

¹³⁸ 25 PA CODE § 105.20a

¹³⁹ 25 PA CODE § 105.18a(b).

¹⁴⁰ 25 PA CODE § 105.18a(b).

¹⁴¹ 25 PA CODE § 105.18a(c).

¹⁴² 25 PA CODE § 102.2(b) (2017).

that must be followed “to minimize the potential for accelerated erosion and sedimentation”¹⁴³
Such permits are required for linear energy project construction sites when the project:

- Will disturb more than 5,000 square feet or more of earth;¹⁴⁴
- Has the potential to discharge into High Quality or Exceptional Value waters;¹⁴⁵
- Involves “earth disturbance associated with oil and gas . . . transmission facilities”¹⁴⁶ that will, over the life of the project, disturb 5 or more acres of earth.¹⁴⁷ An erosion and sediment control general permit (ESCGP-2) is available for these facilities.¹⁴⁸

Chapter 102 permit review is administered by county conservation districts in coordination with the DEP. Neither Chapter 102 permits nor NPDES permits (discussed below) are required for an impact area that is covered by a Corps of Engineers Clean Water Act § 404 permit.¹⁴⁹

Projects built in exceptional value or high quality watersheds may also require riparian buffers.¹⁵⁰ This prohibits activities within 150 feet of any river, stream, creek, lake, pond, or reservoir.¹⁵¹ However, the DEP may grant a waiver from this restriction for linear projects.¹⁵² The waiver is available so long as there are “reasonable alternatives for compliance with [the riparian buffer requirements]” and existing riparian buffer are “undisturbed to the extent practicable.”¹⁵³

NPDES Permit

When a construction project involves greater than or equal to 1 acre of earth disturbance, the project lead must obtain an NPDES permit from the DEP.¹⁵⁴ Such permits may be issued individually project, or the project may be covered by a general NPDES permit for Stormwater Discharge Associated with Construction Activities. There are two such general permits that may be applicable: PAG-02 Stormwater Discharge Associated with Construction Activities and PAG-10 Hydrostatic Testing.

This PAG-02 permit applies to construction activities that will cumulatively disturb 1 or more acres of earth, but does not apply to oil and gas activities.¹⁵⁵ The permit is unavailable for construction activities

¹⁴³ 25 PA CODE § 102.4(b)(1).

¹⁴⁴ 25 PA CODE § 102.4(b)(2)(i).

¹⁴⁵ 25 PA CODE § 102.4(b)(2)(iii).

¹⁴⁶ 25 PA CODE § 102.1.

¹⁴⁷ 25 PA CODE § 102.5(c).

¹⁴⁸ Pennsylvania DEP, EROSION AND SEDIMENT CONTROL GENERAL PERMIT FOR EARTH DISTURBANCE ASSOCIATED WITH OIL AND GAS EXPLORATION, PRODUCTION, PROCESSING, OR TREATMENT OPERATIONS OR TRANSMISSION FACILITIES, ESCGP-2, 8000-PM-OOG M0005 12/2012,

<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-92174/8000-PM-OOGM0005%20Permit%20doc.pdf>

¹⁴⁹ 33 U.S.C.A. § 1344 (2016); 25 PA CODE § 102.5(i).

¹⁵⁰ 25 PA CODE § 102.14.

¹⁵¹ 25 PA CODE § 102.14(a)(1).

¹⁵² 25 PA CODE § 102.14(d).

¹⁵³ 25 PA CODE § 102.14(d)(2).

¹⁵⁴ 25 PA CODE § 102.5(a).

¹⁵⁵ Permit Summary Sheet, <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-114287/01%203150-PM-BWEW0035%20NOI%20Instructions.pdf>. Oil and gas pipelines will use ESCGP-2.

in high quality watersheds, exceptional value watersheds, or exceptional value wetlands.¹⁵⁶ The permit is also unavailable for activities that may impair existing water quality standards, may result in hazardous or toxic discharge,¹⁵⁷ or may affect any threatened or endangered species.¹⁵⁸ Note, this general permit was to expire on December 7, 2017, but its coverage has been administratively extended to December 7, 2018.¹⁵⁹

The PAG-10 permit is intended to cover discharges resulting during hydrostatic testing of pipelines. The permit does not apply when the discharge may result in pollution (including any hazardous or toxic material), may result in noncompliance with a water quality standard, or when the discharge will be initiated by an individual who has demonstrated an inability to comply with permits or DEP orders.¹⁶⁰ The permit also does not apply when the discharge would enter into high quality or exceptional value water or would affect any threatened or endangered species or critical habitat.¹⁶¹

Maryland

Water Quality Certification Process

All projects requiring a federal approval must obtain a Water Quality Certification from the Maryland Department of the Environment (“MDE”).¹⁶² MDE must certify that the permitted activity will not cause violations of state water quality standards.¹⁶³ Maryland protects its waters using three tiers: “fishable-swimmable” (Tier I), High Quality Waters (Tier II), and ONRW (Tier III).¹⁶⁴ Each of these waters has designated uses and water quality criteria that protect the designated use.¹⁶⁵ Maryland’s antidegradation policy prohibits the issuance of permits if the water quality is not maintained.¹⁶⁶

¹⁵⁶ 25 PA CODE § 92a.54(a)(8); PAG-02 at 1, <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-114287/01%203150-PM-BWEW0035%20NOI%20Instructions.pdf>.

¹⁵⁷ 25 PA CODE § 92a.54(a)(5).

¹⁵⁸ PAG-02 at 1,

<http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-114287/01%203150-PM-BWEW0035%20NOI%20Instructions.pdf>.

¹⁵⁹ Pennsylvania Department of Environmental Protection, Construction Stormwater, <http://www.dep.pa.gov/Business/Water/CleanWater/StormwaterMgmt/Stormwater%20Construction/Pages/default.aspx>. Before the general permit is reviewed, a draft will be published in the *Pennsylvania Bulletin* and the public will have 30 days to provide comments. 25 PA CODE § 92a.84.

¹⁶⁰ Pennsylvania Department of Environmental Protection, PAG-10 Notice of Intent Instructions 3 (2017), <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-116168/3800-PM-BCW0173a%20NOI%20Instructions.pdf>.

¹⁶¹ Pennsylvania Department of Environmental Protection, PAG-10 Notice of Intent Instructions 3 (2017), <http://www.elibrary.dep.state.pa.us/dsweb/Get/Document-116168/3800-PM-BCW0173a%20NOI%20Instructions.pdf>.

¹⁶² COMAR 26.08.02.10.

¹⁶³ COMAR 26.08.02.10(E)(1).

¹⁶⁴ Dept. of Envntl. Protection, Maryland’s Surface Water Quality Standards, <http://mde.maryland.gov/programs/water/TMDL/WaterQualityStandards/Pages/index.aspx>.

¹⁶⁵ COMAR 26.08.02.01(B).

¹⁶⁶ COMAR 26.08.02.04-2(I).

Water quality certifications ordinarily reference the requirements of Maryland permits described below, but may include additional requirements where needed to meet water quality standards. In interpreting its water quality standards Maryland may rely on policies which include:

(b) [I]t is the policy of this State: (1) to improve, conserve, and manage the quality of the waters of this State; (2) to protect maintain, and improve the quality of water for public supplies, propagation of wildlife, fish, and aquatic life, and domestic, agricultural, industrial, recreational, and other legitimate beneficial uses....(c)(1) The Department shall cooperate with local governments, agencies of other states and the federal government in carrying out the objectives of subsection (b).¹⁶⁷

It is also possible to use 401 certification more expansively where the conditions can be closely linked to water quality outcomes. In MDE's certification for the Conowingo Dam relicensing, for example, it determined impacts of future nutrient loadings (annual loadings of 6 million pounds of nitrogen, 260,000 pounds of phosphorous), adversely affecting attainment of the dissolved oxygen standard in the Chesapeake Bay. MDE imposed a condition on the licensee that it develop and submit for approval a nutrient corrective action plan to include any combination of strategies including: an annual in-lieu fee payment per pound of nitrogen and phosphorous; installation of "best management practices and/or ecosystem restoration actions;" and/or dredging of the reservoir.¹⁶⁸ In effect, the licensee may fund up to \$172 million/year in actions supporting achievement of water quality goals, or undertake activities on the land/or waters that will achieve reductions – including ecosystem restoration activities. The availability of the updated Bay model and the underpinnings of the Bay TMDL can make it possible to link such conditions to water quality.¹⁶⁹ The certification also contains conditions related to various affected aquatic, reptile, amphibian, and waterfowl species.

NPDES Permit

Maryland requires NPDES permits, issued by the MDE, for discharges associated with construction and hydrostatic testing.¹⁷⁰ There are general permits available for both of these activities, General Permit 3.23¹⁷¹ and General Permit No. 11-HT¹⁷² respectively. General Permit 3.23 is required for all construction activity that cumulatively disturbs one or more acres, and is available only for stormwater discharges

¹⁶⁷ Md. Code Ann.-Env't. §9-302.

¹⁶⁸ Maryland Dept. of the Environment, Clean Water Act Section 401 Certification for the Conowingo Hydroelectric Project FERC Project No. P-405/MDE WSA Application No 17-WQC-02 (April 22, 2018), at 15-16.

¹⁶⁹ The plan is due no later than December 31, 2019, along with a sediment and nutrient monitoring plan. The certification also provides that nitrogen and phosphorous reduction otherwise achieved in a final Conowingo WIP may be credited against the licensee's requirements. Id.

¹⁷⁰ COMAR 26.08.04.01.

¹⁷¹ COMAR 26.08.04.09(A);

<http://mde.maryland.gov/programs/Permits/WaterManagementPermits/Documents/2014MDRC-GeneralPermit.pdf>.

¹⁷² COMAR 26.08.04.09(K);

http://www.mde.state.md.us/programs/Permits/WaterManagementPermits/Documents/GDP%20-%20HT%20Documents/11_HT_PERMIT_FINAL.pdf.

and certain enumerated discharges.¹⁷³ If operations would otherwise violate a state or federal water quality standard, neither permit may be used and the project lead must apply for an individual NPDES permit.

Water Obstruction Activities

MDE issues permits for activities that obstruct or “change in any manner the course, current, or cross section of a stream or [nontidal] body of water,”¹⁷⁴ including temporary changes.¹⁷⁵ Such permits are strictly required for all pipelines and transmission lines that go under or over the Potomac River.¹⁷⁶ There is one general permit available by regulation for temporary projects and minor clearing and grading within the floodplain.¹⁷⁷ Otherwise, MDE must issue an individual permit for Waterway and 100-Year Floodplain activities.¹⁷⁸

Nontidal Wetlands

Operations in nontidal wetlands or within the buffer area are prohibited unless the applicant first obtains a permit or a letter of exemption.¹⁷⁹ Letters of exemption are unavailable for linear projects if the activity “[m]ay result in significant individual or cumulative impacts to nontidal wetlands, attributable to an entire and complete project.”¹⁸⁰ A letter of exemption is also not available if the project would impact 5,000 or more square feet of nontidal wetlands and buffer.¹⁸¹ However, natural gas pipelines smaller than 12 inches in diameter and overhead transmission lines will qualify for a letter of exemption.¹⁸²

Regulated activities include grading or filling, excavating or dredging, changing existing drainage patterns, disturbing the water level or water table, or destroying or removing vegetation. The MDE must find that the applicant has demonstrated that the activity:

- (1) (i) Is water dependent and requires access to the nontidal wetland as a central element of its basic function; or (ii) Is not water dependent and has no practicable alternative;
- (2) Will minimize alteration or impairment of the nontidal wetland, including existing topography, vegetation, fish and wildlife resources, and hydrological conditions;

¹⁷³<http://mde.maryland.gov/programs/Permits/WaterManagementPermits/Documents/2014MDRC-GeneralPermit.pdf>.

¹⁷⁴ COMAR 26.17.04.03(A).

¹⁷⁵ COMAR 26.17.04.08.

¹⁷⁶ COMAR 26.17.04.09.

¹⁷⁷ COMAR 26.17.04.10.

¹⁷⁸ <http://mde.maryland.gov/programs/Permits/Documents/2008permitguide/WMA/3.20.pdf>. COMAR 26.17.04.11 outlines criteria MDE must use when evaluating applications for such permits; requests to depart from these criteria must come from the applicant.

¹⁷⁹ COMAR 26.23.02.01(A). The 25-foot buffer in certain circumstances is extended to 100 feet. Md. Ann. Code, Env. Art. Tit. 5, § 5-906(i)(1).

¹⁸⁰ COMAR 26.23.03.02(B)(2).

¹⁸¹ COMAR 26.23.03.01(B)(2).

¹⁸² COMAR 26.23.03.01(B)(3)–(4).

- (3) Will not cause or contribute to a degradation of groundwaters or surface waters; and
- (4) Is consistent with any comprehensive management plan.¹⁸³

With respect to the alternatives requirements, the applicant must show that it has analyzed practicable alternatives, and that there is no practicable alternative.¹⁸⁴ An applicant is further required to “take all necessary steps to first avoid significant impairment and then minimize losses of nontidal wetlands.”¹⁸⁵ If losses or significant impairment is “unavoidable,” then the applicant is required to adopt mitigation practices.¹⁸⁶

Applications for nontidal wetland permits must identify wetlands that have or may have significant plants or wildlife.¹⁸⁷ Before issuing a permit, MDE will allow for public comment,¹⁸⁸ and must consider such comments when making its final decision.¹⁸⁹ Maryland has a stated goal of achieving “no net overall loss in nontidal wetland acreage and function and to strive for a net resource gain in nontidal wetlands.”¹⁹⁰ MDE recognizes that this may not be possible for each individual project,¹⁹¹ but still requires at least a 1:1 replacement of lost nontidal wetlands in terms of both acreage and function.¹⁹²

MDE recently issued a nontidal wetlands and waterways permit for a linear energy project, the Eastern Panhandle Expansion Project, conveying natural gas from Pennsylvania across three miles of the Maryland panhandle and under the Potomac River into West Virginia. The MDE found that the state’s regulatory requirements would be met and that the horizontal drilling under the river and one tributary would minimize impacts on wetlands and habitats; it accepted the applicant’s determination that alignment alternatives would have greater environmental impacts. The MDE imposed certain construction and time-of-year requirement to protect species and habitats; and it required certain scoping and remediation in karst landscapes (if any, which were not found in the geological survey).¹⁹³

¹⁸³ *Id.* § 5-906(a).

¹⁸⁴ *Id.* § 5-906(b). The statute further sets out criteria for determining whether there are no practicable alternatives to the proposed regulated activity,

¹⁸⁵ *Id.* § 5-909(a).

¹⁸⁶ *Id.* The parameters for mitigation are further specified in Department of the Environment Regulations. See COMAR 26.23.04.02.

¹⁸⁷ COMAR 26.23.02.01(D)(7).

¹⁸⁸ COMAR 26.23.02.02(G).

¹⁸⁹ COMAR 26.23.02.03(A)(1).

¹⁹⁰ MD Code § 5-902(b).

¹⁹¹ COMAR 26.23.04.03(A).

¹⁹² COMAR 26.23.04.03(B)–(G).

¹⁹³ MDE, Summary of the Basis for MDE’s Decision to Issue Nontidal Wetlands & Waterways Permit No. 17-NT-3089/201760592 (March 16, 2018). The MDE found that climate change, effects on land condemnation in other states, encouragement of fossil fuel development, and changes in appearance of the landscape were outside the scope of its review. (The Maryland Historical Trust determined that the project would have no adverse effects on cultural resources).

Tidal Wetlands and Submerged Lands

MDE has a stated goal to “strive for a net resource gain in tidal wetland acreage and function.”¹⁹⁴ As such, all linear projects impacting tidal wetlands require a license from the Board of Public Works or a permit from the MDE.¹⁹⁵

Though there are general licenses available, most large linear projects would not qualify.¹⁹⁶ Some may qualify under MDE’s general permit for underground natural gas pipelines with a diameter of 12 inches or less, but only if the wetland’s original elevation and vegetation are restored.¹⁹⁷ Note, before using this general permit, a project applicant must still apply to the MDE, which will evaluate the project’s “ecological, economic, developmental, recreational, and aesthetic values.”¹⁹⁸

In evaluating an application for permit or license, the MDE must consider “the degree to which....the proposed activity is consistent with State, federal, and local land use plans and laws, including Critical Area laws.”¹⁹⁹ The provision for consideration of “plans” as well as laws, may provide some basis for different determinations as to siting, impacts, and mitigation for energy facilities if MDE bases its findings on adopted plans.

If loss is unavoidable, MDE will recommend that the Board of Public Works require mitigation, or, if issuing the permit itself will require mitigation “designed to replace the values and functions associated with the wetlands to be impacted.”²⁰⁰ Mitigation must be connected to tidal wetlands or waters, with a preference first for on-site mitigation, then for mitigation within the same watershed.²⁰¹ As with nontidal wetland mitigation, the replacement wetlands must cover at least the same acreage, though there is no similar provision requiring a 1:1 functional replacement.²⁰² MDE also has the authority to create additional conditions on a case-by-case basis.²⁰³ Regulations direct the Board of Public Works to “protect State wetlands” when including conditions on licenses.²⁰⁴

Erosion and Sediment

Maryland requires Erosion and Sediment Control Plans for all activities that disturb 5,000 or more square feet of land and 100 or more cubic yards of earth, as well as for utility right-of-ways.²⁰⁵

¹⁹⁴ COMAR 26.24.01.01(A).

¹⁹⁵ COMAR 26.24.02.01. In general, a “permit” is issued by MDE for activities in private wetlands, while a “license” is issued by the BPW for state wetlands after receipt of MDE’s recommendation. However, if a project qualifies for a general wetlands license and does not require mitigation, the MDE may issue the license. COMAR 26.24.02.04.

¹⁹⁶ COMAR 26.24.02.04.

¹⁹⁷ COMAR 26.24.02.05(B)(1).

¹⁹⁸ COMAR 26.24.02.05(A).

¹⁹⁹ COMAR 26.24.02.03(B)(8).

²⁰⁰ COMAR 26.24.05.01(B).

²⁰¹ COMAR 26.24.05.01(B).

²⁰² COMAR 26.24.05.01(C).

²⁰³ COMAR 26.24.02.06(K).

²⁰⁴ COMAR 23.02.04.14(A).

²⁰⁵ COMAR 26.17.01.05(A)(2), 26.17.01.05(B). *See also*

<http://mde.maryland.gov/programs/Permits/Documents/2008permitguide/WMA/3.21.pdf>.

Applications for approval of these plans are evaluated using the 2011 Maryland Standards and Specifications for Soil Erosion and Sediment Control published by the MDE. This highly technical document does not address landscape-scale or siting concerns.²⁰⁶

Critical Areas Act

Maryland has created special protections for the Chesapeake Bay and coastal bays under its Critical Areas Act.²⁰⁷ Implementing regulations and guidelines place limits on what activities may occur within the critical area.²⁰⁸ No roads or utilities are allowed in the critical area or its buffer “unless there is no feasible alternative and [the project] is located, designed, constructed, and maintained in a manner that maximizes erosion protection; minimizes negative impacts to wildlife, aquatic life, and their habitats; and maintains hydrologic processes and water quality.”²⁰⁹ Similarly, transmission lines may only be built in the critical area or buffer if they “account for their impact on the physical, biological, aesthetic, and cultural features of the site and adjacent areas; identify contributions to air and water pollution; recommend mitigation opportunities; and adequately consider recommendations of local government.”²¹⁰

Virginia

Water Quality Certification Process

Section 401 certification review is conducted by the Virginia Department of Environmental Quality, with approval by the Virginia Water Control Board. Like the other states, Virginia uses the three-tier approach to determine levels of protection for its waters.²¹¹ DEQ has issued regulations outlining designated uses for these waters, and criteria that must be met to allow for those uses.²¹² Permitted activities must not contribute to the degradation of any of these waters.²¹³

Project applicants are required to obtain a Virginia Water Protection Permit (“VWPP”) before conducting activities in waters and wetlands, or withdrawing surface waters.²¹⁴ In most instances, issuance of this VWPP satisfies § 401 of the Clean Water Act.²¹⁵

In interpreting its water quality standards and administering 401 certification, the Board may consider the Code of Virginia’s goals, that “the public welfare and interest of the people” require “proper

²⁰⁶ Note, however, its connection to Maryland’s Forest Conservation Act, discussed below.

²⁰⁷ Annotated Code of Maryland §8-1801 to 8-1817 (2017).

²⁰⁸ COMAR 27.01.01.01.

²⁰⁹ MARYLAND’S ENFORCEABLE COASTAL POLICIES 6 (2011), <http://dnr.maryland.gov/ccs/Documents/mecp.pdf>.

²¹⁰ MARYLAND’S ENFORCEABLE COASTAL POLICIES 19 (2011), <http://dnr.maryland.gov/ccs/Documents/mecp.pdf>.

²¹¹ E.g., Dept. of Env’tl. Quality, Exceptional State Waters (Tier III), [http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards/ExceptionalStateWaters\(TierIII\).aspx](http://www.deq.virginia.gov/Programs/Water/WaterQualityInformationTMDLs/WaterQualityStandards/ExceptionalStateWaters(TierIII).aspx).

²¹² 9 VAC 25-260-10 to 25-260-30.

²¹³ 9 VAC 25-260-30(A)(3)(b).

²¹⁴ VA CODE §62.1-44.15:20(A).

²¹⁵ Virginia Department of Environmental Quality, Virginia DEQ – Wetlands & Streams, <http://www.deq.virginia.gov/Programs/Water/WetlandsStreams.aspx>.

development, wide use, conservation and protection of water resources together with protection of land resources, as affected thereby”²¹⁶ and that the “waste or unreasonable use or unreasonable method of use of water should be prevented.”²¹⁷

Virginia conducts public hearings in connection with its 401 certification of major pipeline projects in the Commonwealth, including hearings on the draft conditions.

Special Section 401 Guidance for Pipeline Projects in Virginia

Because of the scale of upland effects on water quality posed by large pipelines, Virginia developed a guidance document to provide staff and owners of large natural gas pipeline projects regulated by the FERC with “information needed to evaluate whether additional Section 401 conditions may be appropriate to *supplement* those associated with either a US Army Corps of Engineers (Corps) Permit and/or a Virginia Water Protection (VWP) Permit.”²¹⁸ DEQ notes that in the case of large pipeline projects “there may be activities in upland areas that may have the potential to affect water quality but do not fall within the scope of the VWP regulation.... In such appropriate cases, DEQ may request additional information from the project owner and conduct a separate supplemental review of the project with respect to upland impacts that may indirectly affect state waters. If warranted, the Department may make a recommendation to the [State Water Control] Board for additional conditions on upland activities.”²¹⁹ Such measures have included reducing the disturbance area in uplands, additional riparian buffer requirements, individual project-specific plans for sediment and erosion control, special protections in karst terrains, blasting and slide prevention measures, additional monitoring and pre-construction notice requirements, surface water withdrawal requirements and water quality monitoring, among others.

For example, the 401 certification issued by the Water Quality Control Board to the Mountain Valley Pipeline in December 2017 includes such conditions with respect to “all proposed upland activities associated with the construction, operation, maintenance and repair of the pipeline, any components thereof or appurtenances thereto, and related access roads and rights-of-way as well as certain project-related surface water withdrawals.” This was in addition to required compliance with VWPP requirements, erosion and sediment control provisions, and Virginia Marine Resources Commission and Corps permits, among others.²²⁰

²¹⁶ Va. Code §62.1-11.D.

²¹⁷ Va. Code §62.1-11.C.

²¹⁸ Virginia DEQ, Guidance Memo No. GM17- 2003, Interstate Natural Gas Infrastructure Projects Procedures for Evaluating and Developing Additional Conditions for Section 401 Water Quality Certification (May 19, 2017), <http://www.deq.virginia.gov/Portals/0/DEQ/Water/Pipelines/GuidanceMemoGM17-2003Section401WaterQualityCertification.pdf>.

²¹⁹ Id.

²²⁰ Virginia Water Quality Control Board, Certification No. 17-001, issued to Mountain Valley Pipeline, LLC (Dec.8, 2017). DEQ staff approved the erosion, sediment and stormwater control plans on March 26, 2018, and concurred in the supplemental karst evaluation plan on March 13, 2018. DEQ concludes that the MVP certification is final and that “these approvals are not under the board's purview.” Memorandum, M. Davenport to Members of the State Water Control Board (March 26, 2018). <http://www.deq.virginia.gov/MVP.aspx>

The Board made its 401 certification for the Atlantic Coast Pipeline *contingent* on the completion of additional studies and plans on erosion and sediment control measures, stormwater management, and karst topography.²²¹ This meant that while the Mountain Valley Pipeline had its 401 certificate in hand upon issuance in December 2017, the Atlantic Coast Pipeline did not.

DEQ's approval of the annual standards and specifications for erosion and sediment control and stormwater management (see below) are conditions of the 401 certifications. In July 2018, DEQ issued a detailed notice of violation to Mountain Valley Pipeline for numerous violations of these requirements at multiple construction sites.

Virginia Water Protection Permit

Project applicants are required to obtain a Virginia Water Protection Permit ("VWPP") before conducting activities in wetlands or withdrawing surface waters.²²² However, construction of utility lines (natural gas and oil pipelines, electric or communication transmission lines), provided that each impact does not result in loss of greater than ½ acre of waters of the U.S., is covered under the Army Corps of Engineers NWP-12. So in many circumstances, no VWPP would be required.²²³ However, because NWP-12 applies only to waters of the United States, a VWPP would still be necessary for construction affecting any other bodies of water.²²⁴ Also for utility projects that are regulated by FERC or the State Corporation Commission, Virginia General permit WP-2 covers impacts to up to one acre of nontidal wetlands and up to 1,500 linear feet of nontidal stream beds.²²⁵

The Virginia Water Control Board on April 12, 2018 directed the DEQ to issue a public notice seeking comment on whether the Board should require individual assessments and permits for waterbody crossings associated with the Mountain Valley Pipeline and Atlantic Coast Pipeline projects.

²²¹ Virginia Water Quality Control Board, Certification No. 17-002 (Dec. 12, 2017). This contingent certification is the subject of differing views between the Board and DEQ as to their respective authority to determine when (or if) the conditions have been fulfilled. DEQ describes it as a completed 401 certificate with "delayed effective date": "The certification approved by the Board and reviewed by our attorneys is in place and becomes effective upon the issuance of the Department's report to the Board and the public. By law the Erosion, Sediment and Stormwater approvals upon which the effective date is conditioned are approved by certified staff and those approvals are not under the State Water Control Board's purview.....Upon submittal of the report documenting approval of the Supplemental Karst Evaluation Plan annual standards and specifications, erosion and sediment control plans, and stormwater management plans, Virginia's Section 401 water quality certification for activities in upland areas becomes effective. No further action by the board is required for the certification to become effective. As provided in the certification, the board may, after review of the report, consider further actions on the certification." <http://www.deq.virginia.gov/Programs/Water/ProtectionRequirementsforPipelines/ACP.aspx>

²²² VA CODE §62.1-44.15:20(A). This certification satisfies § 401 of the Clean Water Act. Virginia Department of Environmental Quality, Virginia DEQ – Wetlands & Streams, <http://www.deq.virginia.gov/Programs/Water/WetlandsStreams.aspx>.

²²³ <http://www.deq.virginia.gov/portals/0/deq/water/wetlandsstreams/publicguiderevised2012.pdf> at 2-2.

²²⁴ http://www.nao.usace.army.mil/Portals/31/docs/regulatory/NationwidePermits/Nationwide_Permit_12.pdf.

²²⁵ 9 VAC 25-670-100.

VPDES

All discharges into Virginia's waters require a Virginia Pollutant Discharge Elimination System ("VPDES") permit.²²⁶ Hydrostatic testing, however, is covered under General Permit 83.²²⁷

Erosion and Sediment Control Plan

All land-disturbing activities must create and submit to DEQ or a local authority for approval a Virginia Erosion and Sediment Control Plan ("VESCP").²²⁸ Companies involved in linear energy projects may submit general VESCPs to DEQ,²²⁹ and these VESCPs must meet minimum standards.²³⁰

Moreover, detailed "annual standards and specifications" for erosion and sediment control and stormwater management may be required under Virginia law for "construction, installation or maintenance of electric transmission, natural gas and telephone utility lines and pipelines, and water and sewer lines."²³¹

Tidal Wetlands and Submerged Lands

Use and encroachment on subaqueous lands are subject to permitting by the Virginia Marine Resource Commission ("VMRC").²³² VMRC charges an encroachment royalty for occupation of subaqueous lands.²³³

Activities in tidal wetlands must comply with local wetlands zoning ordinances or obtain a permit from the VMRC.²³⁴ Such zoning ordinances in turn require a permit from a local wetlands board that each locality has the option of creating.²³⁵ The VMRC has issued guidance regulations, stating its "no-net-loss"

²²⁶ 9 VAC 25-31-50.

²²⁷ See

<http://www.deq.virginia.gov/Programs/Water/PermittingCompliance/PollutionDischargeElimination/PermitsFees.aspx>. See also <http://www.deq.virginia.gov/Portals/0/DEQ/Water/PollutionDischargeElimination/VAG83-GeneralPermit2013.pdf>.

²²⁸ VA CODE § 62.1-44.15:55(A).

²²⁹ VA CODE § 62.1-44.15:55(D).

²³⁰ 9 VAC 25-840-40. Virginia Erosion and Sediment Control Handbook.

²³¹ VA CODE § 62.1-44.15:55(I); VA Code § 62.1-44.15:31 ("interstate and intrastate natural gas pipeline companies shall...annually submit a single set of standards and specifications for Department approval that describe how land-disturbing activities shall be conducted.") See also DEQ Guidance Memorandum No. 15-2002 (GM15-2003) for linear utility projects that will operate without a separate stormwater management plan.

²³² VA Code § 28.2-1204. This applies to the beds of streams and rivers, as well as of estuaries and marine waters controlled by the Commonwealth.

²³³ For example, \$2/sq. foot for transmission tower footings, and \$3/linear foot for transmission lines, for Dominion Energy's Skiffes Creek 500kv line over the James River.

²³⁴ VA CODE §28.2-1306(A).

²³⁵ VA CODE §28.2-1302.

policy, requiring compensatory mitigation for all projects requiring use of a wetlands habitat.²³⁶ This policy also prefers on-site compensation, then off-site compensation within the same watershed.²³⁷

Chesapeake Bay Preservation Act

The Chesapeake Bay Preservation Act also provides water quality protection²³⁸ Local governments in the tidewater adopt programs to protect water quality and designate resource protection areas and resource management areas. The Act and regulations require a vegetated buffer no less than 100 feet wide adjacent to and landward of all tidal shores, tidal wetlands, and non-tidal wetlands connected by surface flow and contiguous to tidal wetlands or along water bodies with perennial flow. However, construction, installation, operation, and maintenance of electric, natural gas, fiber-optic, and telephone transmission lines, railroads, and public roads and their appurtenant structures in accordance with” state or local erosion and stormwater management plan requirements are deemed to satisfy the requirements.²³⁹

Recommendations

- The states should adopt protocols for conducting 401 certification for large linear energy projects that are expressly based on the “purposes and policies” in state water laws to add conditions and requirements that meet these objectives in the affected watersheds. These include provisions providing for “water quality management and pollution control in the watershed as a whole,” provisions to “improve, conserve, and manage the quality of the waters” of the state, and “conservation and protection of water resources together with protect of land resources as affected thereby.” 35 P.S. § 691.5(a), Md. Code Ann. Env’t. § 9-301(b), Va. Code § 62.1.11.D, respectively.) *Implementation Method: Administrative Interpretation or Rulemaking*
- The states should define landscape level compensatory mitigation requirements for § 401 certification by expressly relying on and referring to the Chesapeake Bay model of land cover and condition, forecasting, and relevant best management practices (BMPs). While temporary land disturbances and vegetation removal during construction, and long term land cover alteration during project life, might not produce explicit outcomes for all pollutants in terms of pollution loadings, nevertheless the model can identify appropriate locations and scale for mitigation activities. States can construct water quality certification requirements and conditions for upland and terrestrial actions, and mitigation requirements on those lands, using these tools that connect landscapes with water quality outcomes. This provides justification for the conditions, and can withstand the deferential standard of review used to sustain state § 401 determinations. *Implementation Method: Administrative Interpretation*

²³⁶ 4 VAC 20-390-20 (“If Virginia is to meet this goal, wetland losses permitted through the tidal wetland regulatory program, no matter how small, must be replaced.”).

²³⁷ 4 VAC 20-390-50.

²³⁸ VA CODE § 62.1-44.15:67 et seq., 9 VAC 25-830-10.

²³⁹ 9 VAC 55-830-150.

- Pennsylvania DEP and Maryland MDE should emulate Virginia DEQ's 401 certification guidance for uplands that will be affected by pipeline activities, and adopt their own supplemental guidance. This creates expectations for applicants at the outset and defines the basis for compensatory mitigation in multiple dimensions. This approach can be further implemented by building upon the Virginia forest impact methodology (discussed infra), as a reproducible, consistent methodology, to link requirements to water quality. Virginia can update its own guidance based on its recent experience with applying these conditions. *Implementation Method: Administrative Interpretation*
- Require individual permits with § 401 certifications (or condition future 401 certifications of Corps of Engineers general permits/nationwide permits for stream crossings and wetland impacts), when large linear energy projects involve multiple uses of NWPs/SPGPs. Each state environmental agency should adopt a policy to require cumulative consideration of these impacts, especially where the impacts affect tributary networks and where the impact of failure may be significant. Such a requirement would support triggering the kind of compensatory mitigation conditions identified above in instances where currently there is no opportunity for such requirements. *Implementation Method: Administrative Interpretation or Rulemaking*
- Coordinate action on all relevant permits associated with a single project, including coordination of consistent, comprehensive landscape-scale evaluation and mitigation. *Implementation Method: Administrative Interpretation, Rulemaking, Legislation*
- Incorporate watershed information into permit conditions, including offsets/mitigation. *Implementation Method: Administrative Interpretation, Rulemaking*
- Determine when use of Corps NWP or SPGP is not appropriate (viz. multiple stream and wetland crossings), and when individual permits should be required with alternatives analysis and site-specific review, as well as cumulative impacts assessment. Strictly apply avoidance and minimization requirements and require individualized review and coordination of mitigation. *Implementation Method: Administrative Interpretation, Rulemaking*

Wildlife and Habitat Conservation

Each of the states has a robust natural heritage program with multiple datasets that can help to identify habitats, landscape characteristics, and species of concern when setting priorities for conservation or when making a siting or permitting decision.²⁴⁰ Additional data and expertise are housed in other parts of state government, including data maintained by state fish and wildlife agencies, planning agencies, and others involved in project review, as well as mapping tools and conservation support tools housed in state and public institutions.

These systems serve three roles of potential interest when evaluating proposals for linear energy projects or siting of new solar and wind projects:

1. They can support planning for state agencies and conservation organizations concerning the identification of priority areas for preservation, conservation, and targeted restoration activities.
2. They can help project planners design their projects to avoid or minimize impacts, and/or to identify alternative routes and methodologies; they may also help planners identify potential mitigation opportunities in the area of the project impacts.
3. They provide a trigger (or “hit”) when an applicant consults the system to determine whether there may be adverse impacts on protected species or habitats, requiring further consultation and development of alternatives, suitable mitigation, or a decision to forgo the project.

A variety of landscape data and priority-setting methods are used by the states and conservation organizations throughout the region. LandScope Chesapeake is one region-wide effort by the Chesapeake Conservation Partnership to identify and aggregate map data supporting conservation goals for farms, forests, habitat, heritage, and human health in the watershed.²⁴¹ The habitat conservation priority goal, for example, maps a network of large natural areas and corridors, focusing on four landscape-level resource categories for which map data are available: rivers and streams, lakes and ponds, aquatic buffers, and a terrestrial core-connector network.²⁴²

Map layers and conservation priorities for various resource types and ecoregions are readily available in each of the states. Accessible resources include, among others, Maryland’s Environmental Resources and Land Information Network (MERLIN), Maryland’s Green Print, Maryland’s BioNet, Pennsylvania’s Core Habitat of Natural Heritage Areas, Pennsylvania’s Landscape Conservation Areas, Virginia’s Natural

²⁴⁰ Each of the programs also coordinates with the US Fish & Wildlife Service and NOAA in connection with species protected under the federal Endangered Species Act. Although the ESA is not a primary subject of this report, it can play a significant role in energy projects, particularly where a federal permit or certificate leads to the need for consultation. Recently, the U.S. Court of Appeal for the Fourth Circuit invalidated the incidental take permit issued by the FWS for the Atlantic Coast Pipeline. *Sierra Club v. U.S. Dept. of the Interior*, No. 18-1082 (4th Circ. May 15, 2018)(“the limits set by the agency are so indeterminate that they undermine the Incidental Take Statement’s enforcement and monitoring function under the....Act”).

²⁴¹ <http://www.landscape.org/chesapeake/Priorities/>

²⁴² It was produced by the North Atlantic Land Conservation Cooperative in consultation with the Regional Conservation Opportunity Areas Team of the Northeast Association of Fish and Wildlife Agencies.

Landscape Assessment, and Virginia’s Coastal GEMS. For the most part the heritage data are compatible across states, although the designations of particular priority areas and categories differ.

All three states have updated Wildlife Action Plans which identify species of conservation need and key habitats, and set priorities. These are used chiefly by the state wildlife agencies but also inform other conservation activities related to habitats.²⁴³

Pennsylvania

DCNR oversees Pennsylvania’s natural heritage program, which is managed and staffed by the Western Pennsylvania Conservancy under cooperative agreement. Legal responsibility for species and habitat conservation and regulation is divided among the Department of Conservation and Natural Resources, the Pennsylvania Fish and Boat Commission, and the Pennsylvania Game Commission.²⁴⁴ And, of course, the United States Fish and Wildlife Service has jurisdiction over federally-listed species. Most proposed projects that need permits under Pennsylvania law are required to assess their potential impact on endangered or threatened species and critical habitats.²⁴⁵ Pennsylvania has created a tool that allows users to do so easily through the Pennsylvania Natural Diversity Inventory (PNDI).²⁴⁶

Environmental Review

Anyone constructing a facility that will require permits from the Pennsylvania Department of Environmental Protection, including “authorization types such as: permits, plan approvals and registrations under general permits” must complete a Pennsylvania Natural Diversity Inventory Environmental Review.²⁴⁷ The permit trigger encompasses wetlands, water quality, storm water

²⁴³ <http://www.fishandboat.com/Resource/StateWildlifeActionPlan/Pages/default.aspx> (Pennsylvania 2015 Plan); http://dnr.maryland.gov/wildlife/Pages/plants_wildlife/SWAP_home.aspx (Maryland 2015 Plan); <http://bewildvirginia.org/wildlife-action-plan/> (Virginia 2015 Plan).

²⁴⁴ The following is the jurisdictional division of responsibility: Department of Conservation and Natural Resources (plants); Pennsylvania Fish and Boat Commission (fish, reptiles, amphibians and aquatic organisms); Pennsylvania Game Commission (birds and mammals). Federally-protected species are also under the jurisdiction of the U.S. Fish and Wildlife Service.

²⁴⁵ See 25 PA CODE § 102.6(a)(2); 25 PA CODE § 105.401(3)–(4).

²⁴⁶ Environmental Review, <https://conservationexplorer.dcnr.pa.gov/content/environmental-review>.

²⁴⁷ See Pa. Department of Environmental Protection, Policy for Pennsylvania Natural Diversity Inventory (PNDI) Coordination, at 1, (2013), available at <https://www.energy.gov/sites/prod/files/2015/06/f22/PDNI-1.pdf> (accessed April 20, 2018). This does not “include certifications and licenses.” *Id.* The requirement also includes permits issued by county health departments and county conservation districts as part of their authority delegated from DEP.

management, and erosion and sediment control, and air quality permits.²⁴⁸ A receipt for the completed review must be submitted along with the application for § 102 and § 105 permits.²⁴⁹

The PNDI process is initiated by the applicant. The online *Pennsylvania Conservation Explorer* tool is accessed by the applicant, who creates an account and logs in. It includes conservation planning and species habitat information, “leading to better project planning and fewer impacts,” according to DCNR.²⁵⁰

The online search leads to either: identification of potential impacts (together with tool-generated conservation or avoidance measures), or a determination of no impact.²⁵¹

Where potential impacts are identified (colloquially, a “hit”), consultation follows. This includes review by the agencies with jurisdiction, and notice to the applicant requesting additional information, studies, surveys, and/or development of conservation measures. The process is intended to result in conservation as well as avoidance, mitigation, and monitoring measures agreed upon between the agencies and the applicant. PNDI includes various datasets, but does not currently include scenic rivers and local parklands as part of the PNDI environmental review tool.²⁵²

Planning

Conservation Explorer also has a *conservation planning* interface that can be used by anyone. DCNR explains the difference as follows: “Both Conservation Planning and PNDI Environmental Review use web-mapping tools that allow users to search locations of (and potential impacts on) rare species and habitats; both produce reports used for planning and/or permitting. The difference is, Conservation Planning queries locations of natural heritage areas and protected lands while [the] PNDI Environmental Review analyzes project footprints against species locations and recommends conservation measures

²⁴⁸ A broader review is required for “Special Concern Species” under certain categories of activities. These include some activities that need a Section 105 permit. DEP’s Policy states that Section 105(14) (b) provides that “in reviewing a permit application under this chapter, the Department will use the following factors to make a determination of impact: *** (4) The effect of the dam, water obstruction or encroachment on ...fish and wildlife, aquatic habitat... (5) The impacts...on...natural areas, wildlife sanctuaries... Section 105.16 requires a process to be followed by DEP if there may be an impact on these species and non-wetland resources. However, DEP has discretion with regard to evaluating impacts to special concern species and resources, and in deciding how they should be addressed. For Chapter 105 permits, if the applicant objects to a request made by a jurisdictional agency regarding a *special concern species or resource*, it may communicate that to DEP. DEP will then determine: (1) if there is a potential impact to a special concern species or resource; (2) if that impact would be “adverse;” (3) if the applicant has made sufficient efforts to reduce or mitigate the adverse impact; and (4) whether the public benefits of a project outweigh the remaining adverse impacts to the special concern species or resource. Those public benefits include, among other things, correction and prevention of pollution, protection of public health and safety, development of energy resources, and creation or preservation of significant employment. 25 Pa. Code § 105.16(b).” *Id.*, Appendix C.

²⁴⁹ 25 PA CODE § 102.6(a)(2); 25 PA CODE § 105.401.

²⁵⁰ <https://conservationexplorer.dcnr.pa.gov/>

²⁵¹ Joint State Govt. Comm., *Comprehensive Study on the Use of Wind Turbines in Pennsylvania: A Staff Study* (Jan. 2016), Appendix E.

²⁵² These are included in the Conservation Planning interface, discussed below, but have been recently proposed by DCNR’s Bureau of Recreation and Conservation for addition to the PNDI tool.

and other actions needed to fulfill the requirements of a permit.” While PNDI Environmental Review requires registration and login, in contrast, anyone, including non-registered users, can access Conservation Planning.²⁵³ The conservation planning mapper offers numerous data layers including habitats, aquatic features, protected state lands, natural heritage areas (core habitats and supporting landscapes), and others, but does not provide detailed species information that resides in PNDI.²⁵⁴

In Pennsylvania, the term “natural heritage areas” does not have regulatory significance, but refers to categories of lands and ecologically important areas that have been identified through county-based surveys and mapping.

Conservation planning mapped data on Conservation Explorer do not include all conserved lands (particularly lands still in private hands), but the Pennsylvania Spatial Data Access (PASDA) has recently made available GIS layers for lands across the Commonwealth under conservation easements (including open space, agricultural, land trust, and other easements).²⁵⁵

Species Protection

Under Pennsylvania’s state endangered species laws, three different state agencies (the Pennsylvania Fish & Boat Commission, the Pennsylvania Game Commission, and the Pennsylvania Department of Conservation and Natural Resources) have authority to list threatened and endangered species and are responsible for protecting those species.²⁵⁶ A person may conduct certain activities, including authorized “taking” of a state-listed species under rules and regulations with a permit from the Game Commission or Fish & Boat Commission.²⁵⁷

In 2018 the Game Commission adopted a policy to exclude wind turbines from *state-owned* state game lands, finding this use incompatible with the other wildlife, recreational, and hunting uses for which the Commission manages these lands.²⁵⁸

Voluntary Guidelines for Wind Facilities

²⁵³ Pennsylvania Natural Heritage Program. Conservation Planning.

<https://conservationexplorer.dcnr.pa.gov/content/conservation-planning> (accessed March 14, 2018).

²⁵⁴ <http://conservationexplorer.dcnr.pa.gov/content/map> (accessed March 14, 2018).

²⁵⁵ <http://www.pasda.psu.edu> (search for PA Conserved Land, or select “Pennsylvania Land Trust Association” under “search by data provider”). The web map is available on <https://conservationtools.org> at “PA Mapping”.

²⁵⁶ See 30 Pa.C.S. § 2305 (Fish and Boat Commission – fish, amphibians, reptiles, aquatic organisms); 34 Pa.C.S. §2167 (Pennsylvania Game Commission – birds and mammals); 32 Pa. C.S. §5307 (DCNR - plants)

²⁵⁷ 34 Pa.C.S. § 2924; 30 Pa.C.S. § 2305(b).

²⁵⁸ Pennsylvania Game Commission, Resolution (April 24, 2018), <http://www.media.pa.gov/Pages/Game-Commission-Details.aspx?newsid=209> (accessed May 8, 2018). The Commission observed that it had denied all applications to site such facilities to date as creating a “high probability of adverse impacts to wildlife resources and recreational uses” incompatible with the management goals for state game lands. The resolution also declared “wind energy development on State Game Lands to be inconsistent with the responsibilities of the Pennsylvania Game Commission under both the Game and Wildlife Code and Article I, Section 27 of the Pennsylvania Constitution [the Environmental Rights Amendment].”

The Pennsylvania Game Commission created the *Pennsylvania Game Commission Wind Energy Voluntary Agreement* in 2007 in collaboration with wind energy developers. The agreement was amended in 2013. It is intended to “ensure that wind-energy development project sites are developed in both an environmentally conscientious manner and with best regard to the conservation of the Commonwealth’s wildlife resources.”²⁵⁹ The agreement was signed by 13 wind power developers, including most developers with projects in Pennsylvania (although some changes in ownership have occurred). It does not provide for public participation. Commitments include early notification to the Game Commission of prospective sites; sharing of information “in and around the project area and the potential adverse impact to those resources;” consultation, studies, and planning; monitoring, schedules, protocols; and reporting. It does not replace PNDI consultation (where required) but does provide an opportunity for interaction and consultation.

Maryland

Planning

Maryland’s Natural Heritage program has developed digital mapping resources for a variety of goals. BioNet is a digital map that “prioritizes areas for terrestrial and freshwater biodiversity conservation,” which supplements the mapping resources MDNR’s Natural Heritage program brings to analysis of impacts, sensitive species project review areas, and natural heritage areas.²⁶⁰ It provides a system to support landscape-level priority setting for biological diversity. The BioNet dataset includes “ecologically significant areas” sorted into five tiers. The higher tiers designate those areas with the rarest species, habitats, and natural areas, while the lower tiers identify contiguous forest blocks and interior species habitats.²⁶¹

Maryland’s GreenPrint and Maryland’s Environmental Resources and Land Information Network (MERLIN Online) provide interactive mapping tools with multiple data layers.²⁶² GreenPrint includes data layers for Targeted Ecological Areas (TEAs); these are lands and watersheds of high ecological value that have been identified as conservation priorities by the Maryland Department of Natural Resources. GreenPrint also identifies lands and easements held or acquired by Program Open Space, the Maryland Agricultural Land Preservation Foundation (MALPF), the Maryland Environmental Trust (MET), and Maryland’s Rural Legacy Program. Areas have been identified that have ecological importance and that require special attention when considering the effects of fragmentation and development. GreenPrint

²⁵⁹ Amended Cooperative Agreement, Pennsylvania Game Commission, available at <http://www.pgc.pa.gov/InformationResources/AgencyBusinessCenter/WindEnergy/Documents/Amended%20Cooperative%20Agreement%20and%20Exhibits%20-%202013.pdf> (accessed January 4, 2017).

²⁶⁰ Maryland Department of Natural Resources, BIONET: Biodiversity Conservation Network (Jan. 8, 2016); data and mapping available at <https://hub.arcgis.com/datasets/maryland::maryland-biodiversity-conservation-network-bionet>.

²⁶¹ *Id.* Tier 1 – Critically Significant for Biodiversity Conservation, Tier 2 – Extremely Significant for Biodiversity Conservation, Tier 3 – Highly Significant for Biodiversity Conservation, Tier 4 – Moderately Significant for Biodiversity Conservation, Tier 5 – Significant for Biodiversity Conservation.

²⁶² <http://dnrweb.dnr.state.md.us/MERLIN/>

also includes Maryland's Green Infrastructure, which maps intact "hubs" and their connections through forested waterways, ridgelines, and other natural "corridors."

Environmental Review

Maryland's Natural Heritage Database provides critically needed information in response to proposals for permits and applications for CPCNs.²⁶³ In the energy context, for example, the MDNR reviews a proposed project with respect to its impacts on rare, threatened, and endangered species and habitats. For example, with respect to the Dan's Mountain Wind project, MDNR reviewed the project and concluded that "the final turbine layout met guidelines for avoiding 'take' of the Allegheny Woodrat," a state-listed endangered species.²⁶⁴ MDNR then recommended to the PSC conditions to protect the species and other species.²⁶⁵

Species Protection

Maryland provides protections for endangered species through a program similar to the federal ESA.²⁶⁶ No person may take endangered wildlife species without a permit,²⁶⁷ and all state agencies must "tak[e] any action necessary to insure that actions authorized, funded, or carried out by them do not jeopardize the continued existence of the endangered species or threatened species or result in the destruction or modification of habitat of the species which is deemed by the Secretary to be critical."²⁶⁸ This jeopardy finding is primarily undertaken by using the Environmental Review system provided by Maryland's Department of Natural Resources, Wildlife and Heritage Service.²⁶⁹ The information from this Review will be used to create conditions for a project's permits.

Under the Maryland Nongame and Endangered Species Conservation Act, it is illegal to "take" a state- or federally-listed endangered species.²⁷⁰ Maryland can approve incidental take of species, based on, among other things, mitigation funding and conservation activities.

The MDNR's Wildlife and Heritage Service also designates and administers Natural Heritage Areas for the protection of rare, threatened, or endangered species²⁷¹ and provides state-wide analysis of

²⁶³ The Sensitive Species Project Review Areas dataset includes data from the Maryland Natural Heritage Database, but blur the data into large polygons. It is usable by project proponents to determine whether Environmental Review will be needed. If a project footprint is not within a polygon, then the application will identify that fact rather than trigger a consultation.

²⁶⁴ *In the Matter of the Application of Dan's Mountain Wind Force, LLC for a Certificate of Public Convenience and Necessity*, Md. PSC No. 9413, Proposed Order at 118 (Jan. 25, 2017).

²⁶⁵ *Id.*, Initial Recommended License Conditions, Conditions No. 3-6.

²⁶⁶ See Annotated Code of Maryland § 10-2A-05 (2017).

²⁶⁷ Annotated Code of Maryland § 10-2A-03 (2017); COMAR 08.03.08.03.

²⁶⁸ Annotated Code of Maryland § 10-2A-06(c).

²⁶⁹ Department of Natural Resources, Environmental Review, http://dnr.maryland.gov/wildlife/Pages/plants_wildlife/er.aspx.

²⁷⁰ Md. Ann. Code, Nat. Res. Art., § 10-2A-05(c).

²⁷¹ COMAR 08.03.08.10 (providing criteria and listing all existing areas by county).

significant vegetative communities.²⁷² Designated natural heritage areas must “(1) contain one or more threatened or endangered species or wildlife species in need of conservation; (2) be a unique blend of geological, hydrological, climatological or biological features; and (3) be considered to be among the best Statewide examples of its kind. There are 32 Maryland Natural Heritage Areas, 24 of which are in the Maryland critical area.”²⁷³

State law also provides for the designation of “restricted areas” closed to access for the protection of state-listed endangered or threatened species of wildlife or plants or identified species of conservation need.²⁷⁴ “Without written permission from the Secretary, a person may not trespass, enter, or release an animal on lands owned or controlled by the State which are located between the mean high and mean low water lines of waters of the State and which are posted in a conspicuous manner as a restricted area;” these include the state-owned areas below mean high water in Calvert counties adjacent to Flag Ponds Nature Park; the state-owned areas below mean high water at Assateague Island National Seashore; and the shoreline of Skimmer Island.²⁷⁵

Virginia

Planning

The Department of Conservation and Recreation (DCR) has explicitly recognized the need for landscape-scale planning by creating the Virginia Natural Landscape Assessment (“VaNLA”).²⁷⁶ Within this program, DCR identified ecological cores throughout Virginia and landscape corridors that can connect the cores with the highest ecological integrity. It is used to identify, prioritize, and link natural areas – mapping ecological cores, corridors and nodes, and natural landscape habitat blocks.²⁷⁷ The priority identification function of VaNLA was used to identify five tiers of landscape cores based on ecological integrity: C1 - Outstanding; C2 - Very High; C3 - High; C4 - Moderate; and C5 - General. This information is available for the public, and while there are no requirements for project proponents to utilize VaNLA, the information supports landscape-level planning for avoidance, minimization, and mitigation of potential impacts. VaNLA can be viewed using the Virginia Natural Heritage Data Explorer.²⁷⁸

²⁷² See MDNR, *Maryland Wildlife Diversity Conservation Plan*, http://www.dnr.state.md.us/wildlife/Plants_Wildlife/WLDP/divplan_about.asp

²⁷³ COMAR 08.03.08.10

²⁷⁴ COMAR 08.03.08.11

²⁷⁵ Id.

²⁷⁶ See Dept. of Conservation and Recreation, *Virginia Conservation Vision Natural Landscape Needs Assessment* (2011), <http://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>.

²⁷⁷ “Although the VaNLA is predominantly an analysis of forests, ecological cores include marshes, dunes, and beaches where these covers are abundant and exceed minimum size requirements... Over fifty attributes were assigned to the ecological cores providing information about rare species and habitats, environmental diversity, species diversity, patch characteristics, patch context, and water quality benefits... VNHP selected nine ecological attributes and used them in a principal components analysis to develop a prioritization by ecological integrity.” <http://www.dcr.virginia.gov/natural-heritage/vaconvisvnl>

²⁷⁸ Id.

Additional mapping tools with geospatial information included Coastal GEMS, which has numerous data layers including numerous geospatial data sets within a Conservation Planning layer.²⁷⁹

In April 2018 Governor Northam announced a goal to conserve the top two percent of lands with highest conservation value in the Commonwealth, as step toward conserving the top ten percent of lands, identified using “innovative tools” developed by DCR, in the next ten years.²⁸⁰

Environmental Review

Virginia’s Natural Heritage Program is administered by the DCR,²⁸¹ which has created and maintains a database of Virginia’s biological and geological resources.²⁸² The Virginia Natural Heritage Data Explorer²⁸³ includes a mapper with data on conservation status of lands, as well as information on species and natural communities.²⁸⁴ With a subscription the Explorer allows access to detailed species and habitat information and locations;²⁸⁵ and project applicants can submit project boundaries and get a detailed report on potential impacts. DCR’s Environmental Review section identifies a project’s potential impacts to Virginia’s natural heritage resources including threatened and endangered species.²⁸⁶ If a potential impact is found with respect to a DEQ-permitted project, the project lead should also contact the DEQ.²⁸⁷ The Virginia Department of Game and Inland Fisheries (DGIF) also maintains a species observations database, which is used to determine where there may be impacts on nongame and protected species in the Commonwealth; and registered users can get even more detailed spatially specific information.²⁸⁸ Virginia is currently developing a new tool using distribution models for 140 state and federally listed species found in Virginia to identify locations where the models predict that species may be found and should be reviewed in the context of proposals.²⁸⁹

²⁷⁹ Virginia Dept. of Environmental Quality, Coastal Resources, <https://www.virginia.gov/services/coastal-gems/>, mapper at <http://www.coastalgems.org/>

²⁸⁰ Office of the Governor, Governor Northam Announces New, Innovative Land Conservation Strategy (April 24, 2018).

²⁸¹ VA CODE § 10.1-212.

²⁸² VA CODE § 10.1-209, § 10.1-202(B)(1). See Dept. of Conservation and Recreation, *Virginia Natural Heritage Data Explorer*, <https://vanhde.org/>.

²⁸³ Virginia Department of Conservation and Recreation, Natural Heritage Data Explorer <http://www.dcr.virginia.gov/natural-heritage/nhdeinfo>.

²⁸⁴ Conservation lands data can also be downloaded from the Natural Heritage Conservation Lands database, <http://www.dcr.virginia.gov/natural-heritage/clinfo>.

²⁸⁵ <https://vanhde.org/>. There are three tiers of access that require an agreement: Tier 1 provides polygons of locations of rare, threatened, or endangered species, adjacent habitat and a buffer; Tier 2 adds species information; and Tier 3 is the core data which are accessible only to Virginia state agencies and “conservation partners” under agreement.

²⁸⁶ See Dept. of Conservation and Recreation, *Natural Heritage Environmental Review*, <http://www.dcr.virginia.gov/natural-heritage/ereview>.

²⁸⁷ Ellen Gilinsky, Guidance Memo 07-2007, Threatened and Endangered Species Screening for VPDES Permits 4–7 (2007), https://townhall.virginia.gov//GetFile.cfm?File=C:%5CTownHall%5Cdocroot%5CGuidanceDocs%5C440%5CGDoc_DEQ_3157_v1.pdf

²⁸⁸ Va. Dept. of Game and Inland Fisheries, Fish & Wildlife Information Service, <http://vafwis.org/fwis/>.

²⁸⁹ Pers. Communication, May 24, 2018 (Virginia DCR – Natural Heritage Program).

Species Protection

Virginia protects state-listed endangered and threatened species through the Virginia Endangered Species Act²⁹⁰ and the Endangered Plant and Insect Species Act.²⁹¹

The Virginia Endangered Species Act is administered by Virginia's DGIF.²⁹² The "taking, transportation, possession, sale, or offer for sale within the Commonwealth of any fish or wildlife appearing on" the list, is prohibited.²⁹³ The Department of Game and Inland Fisheries may allow for incidental takes,²⁹⁴ though it has only done so for the Little Brown Bat and Tri-Colored Bat.²⁹⁵

The Department of Agriculture and Consumer Services (DACS) and the Board of Agriculture and Consumer Services administer Virginia's Endangered Plant and Insect Species Act. It is "unlawful for any person to dig, take, cut, process, or otherwise collect, remove, transport, possess, sell, offer for sale, or give away any species native to or occurring in the wild in the Commonwealth that are listed in this chapter or the regulations adopted hereunder as threatened or endangered, *other than from such person's own land*, except in accordance with the provisions of this chapter or the regulations adopted hereunder."²⁹⁶ Virginia law authorizes the DACS to "establish programs as are deemed necessary for the management of threatened or endangered species." It also authorizes the Commissioner to "issue a permit authorizing the removal, taking, or destruction of threatened or endangered species on the state list upon good cause shown and where necessary to alleviate damage to property, the impact on progressive development, or protect human health, provided that such action does not violate federal laws or regulations." The Commissioner "may conduct investigations of species of plants and insects to develop information relating to the population, distribution, habitat needs, limiting factors, and other biological and ecological data in order to determine management measures necessary to assure their continued ability to sustain themselves successfully. As a result of this investigation and recommendations received regarding candidate species from the Director of the Department of Conservation and Recreation and from other reliable data, the Board shall approve proposed species to be added to or deleted from the list of threatened species or the list of endangered species, or to be transferred from one list to the other."²⁹⁷ Although DACS is responsible for threatened and endangered plants and insects, under an agreement the DCR's Division of Natural Heritage handles and coordinates comment and review of actions and proposals that may affect these resources

Virginia's Natural Area Preserve program, administered by DCR, designates protected lands for "rare or declining species of plants and animals and for protecting outstanding examples of both common and

²⁹⁰ VA CODE § 29.1-563 et seq.

²⁹¹ VA CODE § 3.2-1000 to 3.2-1011.

²⁹² The state-listed threatened and endangered wildlife and fish species are identified at 4 VAC15-20-130.

²⁹³ Va. Code § 29.1-564.

²⁹⁴ VA CODE § 29.1-568(B)(2).

²⁹⁵ 4 VAC 15-20-130.

²⁹⁶ Va. Code § 3.2-1003. DACS-listed threatened and endangered plant and insect species are identified at 2 VAC 5-320-10.

²⁹⁷ Va. Code § 3.2-1002.

rare natural community types.” It includes lands in DCR-DNH ownership and others held by The Nature Conservancy or other institutional or governmental owners.²⁹⁸

Other Information

In siting energy facilities that may occupy substantial areas of land or interfere with particularly important habitat areas, a number of conservation organizations and states have undertaken to identify areas of preference or avoidance. This has primarily occurred in the context of wind energy facilities although not, to date, within Pennsylvania, Maryland, or Virginia.²⁹⁹

A 2012 report for the National Association of Regulatory Utility Commissioners suggests that state level “best practices” associated with wind facility siting should include advance identification of “constraint areas” where wind development is less preferred, and “preferred areas” where wind energy facilities should be encouraged to locate.³⁰⁰ These practices could include elements relating to habitat as well as regulatory issues and transmission planning.

Recent efforts to avoid impacts include a number of projects associated with The Nature Conservancy (TNC). The American Wind Wildlife Institute produced the online Wind and Wildlife Landscape Assessment Tool (LAT), focused initially on the northern plains states. The LAT is “a landscape-level planning tool to identify sensitive wildlife habitat and areas that are likely to have low wildlife risk where wind energy development could be prioritized [and] ...can offer early guidance about possible sensitivity of a site within a larger landscape context.”³⁰¹ It includes data layers for wind resources, existing turbines, disturbed areas, protected areas, TNC priority areas, wetlands, important bird areas and other geospatial data generated from public sources. It is on the web and can be used by anyone.

In 2014 TNC and the New York Natural Heritage Program released an online planning tool for use in New York under contract with the New York Energy Research and Development Authority (NYSERDA). It provides a mapper to assist wind developers and decision makers to identify areas of habitat concern, and to address tradeoffs with wind resources and distance to transmission, using publicly available geospatial data layers.³⁰²

²⁹⁸ Va. Code § 10.1-209 - 217 (Virginia Natural Area Preserves Act). About 56,000 acres of lands are managed as NAPs. <http://www.dcr.virginia.gov/natural-heritage/document/napmgt.pdf>

²⁹⁹ James Madison University’s Center for Wind Energy does map wind energy potential throughout the Commonwealth of Virginia, and has a residential and distributed wind interactive mapper that includes additional layers showing wildlife management areas, conservation lands, lands under conservation easements, and other information in a screening tool. <https://www.jmu.edu/wind/resource-assessment.shtml>.

³⁰⁰ National Regulatory Research Institute, *Put It There! – Wind Energy & Wind-Park Siting and Zoning Best Practices and Guidance for States* (NARUC, 2012), at 23-24.

³⁰¹ www.wind.tnc.org/#

³⁰² G. Lampman, et al., *Wind Power and Biodiversity in New York: An Online Tool for Siting Assessment and Scenario Planning at the Landscape Scale* (NYSERDA Report 14-46, Nov. 2014)(using ROI approach to balance priorities). The mapping tool is available at <http://www.ebd.mapny.info/> Cara Lee was the TNC project lead.

The 2016 siting assessment for Kansas, Oklahoma, and the Texas Panhandle prepared by TNC’s Central Great Plains Grasslands Initiative Project Office identifies areas of potentially less risk for utility-scale wind facilities, identifying these as “low-risk wind energy development areas.”³⁰³

The Nebraska Wind & Wildlife Working Group, a collaboration including state and federal agencies, utilities, and nongovernmental organizations, developed a statewide map in 2015, *Nebraska’s Biodiversity and Wind Energy Siting and Mitigation Map*, which is used in conjunction with voluntary *Guidelines for Avoiding, Minimizing, and Mitigating Impacts of Wind Energy on Biodiversity in Nebraska*.³⁰⁴ It relies on geospatial data layers on wind resources, conservation concerns, and other landscape level data to identify three types of areas: Minimum mitigation areas, moderate mitigation areas, and maximum mitigation areas. This approach identifies areas where greater levels of mitigation are likely to be needed if a project were to be approved.³⁰⁵

In 2010, TNC’s Eastern Washington Program published an assessment of species, habitats, and conservation concerns together with data on wind potential to create a “conservation blueprint.”³⁰⁶ The blueprint creates a series of risk classes, and displays them on a regional map together with wind resource data, showing the lands potentially suitable for development and their relative risk from a biodiversity point of view.

Maine mapped regions in which permitting of wind energy facilities is “expedited” and others in which it is not (mostly northern Maine). This approach applies additional scenic impact reviews in non-expedited areas, as well as additional procedures by the Maine Land Use Planning Commission which has jurisdiction in northern Maine; it does not, however, impose additional habitat analysis. In 2013, Maine Audubon prepared an analysis and mapping project that analyzes wind energy potential, habitat and conservation constraints, and the expedited and non-expedited areas.³⁰⁷

None of the formal public utility procedures in Pennsylvania, Maryland, or Virginia requires analysis of *alternative sites* for proposed wind facilities or solar facilities. One way to promote consideration of alternative sites is to improve the quality of voluntary site evaluation in advance of formal applications. Advance identification of such areas (as in TNC’s *Siting by Design*, and approaches used in the western

³⁰³ The Nature Conservancy, *Low-risk wind energy development areas in the Central Great Plains* (2016), <http://www.nature.org/sitewindright>.

³⁰⁴ <http://wind-energy-wildlife.unl.edu/biodiversity-and-wind-map>; <http://wind-energy-wildlife.unl.edu/nebraska-guidelines>.

³⁰⁵ In 2007, Iowa DNR created a map showing “protected natural resource areas” and TNC “priority areas for biodiversity conservation areas” together with the locations of then-existing wind facility sites, as a general guide. This early effort in one of the most active wind-development states did not attempt to establish risk analyses or provide anything more than a gross screen. <http://www.iowadnr.gov/Conservation/Wildlife-Stewardship/Non-Game-Wildlife/Conservation/Wind-and-Wildlife>

³⁰⁶ Conley, J. et al., *An Ecological Risk Assessment of Wind Energy Development in Eastern Washington* (2012), available at <https://databasin.org/datasets/94e89b57ac9449e7a0188e68508e3ca3>

³⁰⁷ S. Gallo, *Wind Power & Wildlife in Maine* (2013) available at <http://wind-energy-wildlife.unl.edu/biodiversity-and-wind-map>. This wind map determined that only about 16 percent of Maine’s developable wind resource lies within wildlife and habitat areas of concern; however, about 2/3 of those lands are within the expedited permitting area.

U.S. by the Bureau of Land Management for siting renewable energy facilities on federal lands) can help advance these approaches. In this region, pre-identification of areas with substantial wind resources and access to transmission could identify previously disturbed or previously mined areas that should be evaluated by any proposed wind (or solar) development venture.

At the same time, improvements in the public availability of planning tools by the states can continue to encourage project developers to avoid and minimize impacts on critically important natural resources and habitats. The expansion of these tools (and greater clarification of what kinds of data are represented in blurred polygons) can help at the earlier phases of project planning.

Recommendations

- Robust GIS and data tools should be used and further developed to continue to define critical landscapes and habitat cores and to prioritize protection (e.g., the Maryland, Virginia Tier 1-5 ecological value systems used for different non-regulatory planning purposes). These could be built into the natural resource spatial planning tools available to assist in project design and in identifying mitigation options. These could be used by state agencies in developing comments to FERC and state public utility regulators, and in proposing compensatory mitigation requirements under §401 and other regulatory tools. *Implementation Method: Administrative Interpretation*
- Support applicants' and agencies' ability to address impacts to privately-owned lands (such as their ability to identify impacts to forest cores on private lands, or natural heritage areas on private as well as public lands). *Implementation Method: Administrative Interpretation, Education and Outreach*
- States should adopt statewide policies applicable to energy development and other activities for all habitat types identified in the policy. These policies should include: (1) Sequencing – avoid, then minimize, then compensate, and (2) No net loss, net benefit for natural resources, habitats. Include prohibitions on using compensatory mitigation to offset or supplant conservation investments from the general fund. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation*
- Expressly connect adopted Wildlife Action plans to planning tools/resources consulted by applicants, and to development of mitigation opportunities. *Implementation Method: Administrative Interpretation, Education and Outreach*
- Create a checklist of databases and mapping tools that project applicants, applicants for 401 certification, and developers must consult when beginning to develop proposals and alternatives. *Implementation Method: Administrative Interpretation, Education and Outreach, Rulemaking*

- Prepare resources to support advance identification of areas suitable for wind or solar energy facilities with a minimum of conflicts (as in TNC's *Siting by Design* and other cooperative efforts). In this region, pre-identification of areas with substantial wind resources (or solar access) and access to transmission could identify previously disturbed (such as previously mined) areas or brownfields not in core habitats, that are suitable for evaluation by project developers.
Implementation Method: Education and Outreach
- For wind/solar siting develop a model or voluntary agreement to facilitate appropriate siting, design, and operation parameters (expanding on the limited approach developed by the Pennsylvania Game Commission for wind development). *Implementation Method: Administrative Interpretation, Education and Outreach*

Forest Conservation

There are wide variations in state laws and policies to conserve the forested landscape. While protection of interior forest parcels and encouragement of riparian forest buffers are critical landscape goals, the available tools differ. Information relevant to forests in the context of decisions about energy facilities includes:

- regional and state goals under the Chesapeake Bay Agreement and under state laws,
- the Chesapeake Bay TMDL and WIPs,
- buffer requirements under state laws protecting waterways and the Bay,
- state and local management policies for conservation lands,
- regulation of forest-clearing activities (in Maryland),
- water quality 401 certifications requiring forest-based landscape measures, and
- environmental impact review processes for FERC or Corps of Engineers decisions.

The Chesapeake Bay Program’s Phase 6 Watershed Model, Chesapeake Assessment Scenario Tool (CAST), was developed to support the midpoint assessment on the Chesapeake Bay TMDL. This tool links landscape conditions to water quality outcomes. Specifically, the approach will use forecast 2025 land use conditions as the basis for the Phase III watershed implementation plans. The land use model includes various tree canopy classifications, riparian/floodplain forests and disturbed forests, and defined forest BMPs. Among other implications, the tool indicates a need for compensation for every acre of forest loss before 2025.³⁰⁸ This means that there is a basis to include forest conservation in many permitting and certification decisions where there is authority to do so. The tool can also show where to prioritize forest retention across the watershed in order to meet TMDL goals.

Pennsylvania

Pennsylvania has no statewide forest conservation law, but manages a very large state forest system, as well as state parks and state game lands. Pennsylvania, like the other states, provides technical assistance to private forest land owners.

Mitigation and avoidance of forest fragmentation resulting from projects is largely case-by-case, where it occurs at all, and driven in some instances by habitat requirements related to PNDI species.

Pennsylvania does maintain a “core forest” data layer at DCNR, based on forest cover and patch mapping initially done by The Nature Conservancy, but it is not yet available on the Conservation

³⁰⁸ Forestry Workgroup, Chesapeake Bay Program Office, A Guide for Forestry Practices in the Chesapeake TMDL Phase III WIPs DRAFT (December 2017): “By electing to use the 2025 projected land use, CBP has essentially provided a financial incentive to conserve and retain forests through improved zoning by state and local governments, land acquisition, or conservation easements. States will benefit from retaining as much forested land as possible.”

Explorer tool offered by the Natural Heritage Program. It is used chiefly by DCNR in developing comments or for its own review purposes.

Maryland

In 2013, Maryland’s General Assembly enacted a no-net loss policy for the state, establishing the policy to maintain 40 percent of all public and private land in tree canopy cover. The law required MDNR to provide counties and local jurisdictions with a statewide forest resource inventory (with tree canopy data and forest resource information) to assist in updating local comprehensive land use plans.³⁰⁹ Maryland operates a state forest system and also provides technical assistance to private forest landowners.

Maryland’s long-standing Forest Conservation Act (FCA), enacted in 1991, requires that in order to obtain a grading or sediment control permit, a person engaged in land clearing of 40,000 square feet or greater must have an approved forest conservation plan and stand delineation. The applicant is responsible for forest retention, and for offsetting of forest clearing actions by planting of forest acreage in compensatory ratios prescribed by the Act, or by local ordinance where more stringent.³¹⁰ For afforestation or reforestation, the forest plan must prioritize forest buffers adjacent to streams and coastal bays, corridors connecting existing forests, establishing or enhancing forest buffers adjacent to critical habitats, forest in 100-year floodplains, steep slopes, buffers to differing land uses, adjacency to existing forests, and use of native plan materials. It is administered by Maryland counties and local governments that choose to so, with authority delegated from the state. The MDNR can accept in-lieu fees for these activities to facilitate afforestation or reforestation when the applicant cannot reasonably accomplish the requirements on or off-site; local governments can establish their own such funds for these purposes (and this has been the route for most current in-lieu payments).³¹¹

The FCA does apply to projects such as the linear Eastern Panhandle extension pipeline project, recently approved by MDE. However, the FCA does not apply to “clearing or routine maintenance of public utility right-of-way or land for electric generating stations,” so in the context of this report does not apply directly to facilities issued a CPCN by the Public Service Commission. However, as noted in the public utility chapter above, the PSC must consider minimizing forest loss and appropriate offset requirements when reviewing the application for CPCN.

While the FCA is an important tool for forest conservation, it can be improved by further identifying forest priority areas. A 2018 bill introduced into the General Assembly proposed to redefine priority areas for forest retention and offsets for such areas to further define contiguity and connectivity for

³⁰⁹ Acts 2013, Chap. 384, Md. Ann. Code – Land Use §1-408, §3-104; Md. Ann. Code- Nat. Res. §5-101(i), 5-102(b)(1).

³¹⁰ Md. Ann. Code, Nat. Res. §§ 5-1601 – 5-1613. The Act does not apply in Maryland’s two westernmost counties. And its provisions do not apply in the Critical Area, as the detailed regulations of the Critical Area Commission apply to land clearing there.

³¹¹ Md. Dept. of Legislative Services, Forest Conservation Act and Other Forestry Programs in Maryland (November 2017).

purposes of the FCA, and to add areas defined in MERLIN or iMap as “targeted ecological areas” or as forest interior species habitat, as well as forests in a drinking water reservoir watershed or wellhead protection area.³¹² However, the substantive provisions of the bill were stripped out and replaced with language calling for a six month technical study of statewide changes in forest cover and tree canopy, including analysis using the Bay Phase 6 Model and CAST scenarios as well as data from state and local FCA programs. But the bill failed, with House and Senate-passed versions still being different when the legislative session ended.³¹³

Maryland’s Agricultural Lands Preservation Foundation discourages FCA forest mitigation on MALPF easements and districts, but will consider approving it on a case-by-case basis, where the landowner shows a legitimate resource conservation purpose under a soil conservation and water quality plan that meets additional goals.³¹⁴ This may mean that occasionally afforestation opportunities may be impeded in particular places by the existence of an agricultural easement.

MDNR has invoked a provision of Maryland’s Scenic and Wild River Act as a basis for seeking conservation of forests and mitigation for forested riparian buffers affected by transmission projects crossing such rivers. The Act states that “every state unit shall recognize the intent of the Scenic and Wild Rivers Program and take whatever action is necessary to protect and enhance the scenic and wild qualities of the designated river.”³¹⁵

Virginia

Virginia also has forest resources on state lands, as well as programs that provide technical assistance to private forest land owners.

Virginia’s resource agencies have acted to calculate and seek mitigation for projected forest losses associated with recent interstate pipelines permitted by FERC. In Virginia’s April 2017 comments on the Draft EIS for the Atlantic Coast Pipeline (ACP), the Commonwealth recommended that FERC direct the pipelines to “coordinate with Virginia’s natural resource agencies and applicable federal agencies on an acceptable mitigation plan to offset and compensate for the significant forestland impacts in Virginia, including direct and indirect losses and fragmentation effects.” It observed that failing to account for indirect impacts of the project would “gravely underestimate the extent to which the project will impact Virginia’s forests.”³¹⁶ The same approach was used in Virginia’s comments concerning the Mountain Valley Pipeline application.

³¹² General Assembly Session 2018, HB 766, SB 610.

³¹³ Id. The House passed its version on the last day of the session, but the Senate did not take it up.

³¹⁴ MALPF Forest Mitigation Policy and Procedures (Jan. 22, 2008).

³¹⁵ Md. Ann. Code, Nat. Res. §8-407, cited in G. Golden to D. Lange & W. Francis, MDNR comments to MDE and the Corps of Engineers on the proposed MAPP transmission project (Feb. 28, 2011).

³¹⁶ Letter from B. Sullivan, Virginia DEQ, to N. Davis, FERC, Re: Federal Energy Regulatory Commission Draft Environmental Impact Statement for the Atlantic Coast Pipeline and Supply Header Project (April 6, 2017)(transmitting Virginia coordinated review recommendations and comments).

To support these comments, Virginia’s natural resources agencies (DCR, DOF, DGIF) produced a supporting analysis identifying direct and indirect impacts of the proposed pipelines to upland forests, as well as initial long-term and landscape-level mitigation recommendations.

- They defined *direct impacts* as loss of forest cover within the project footprint, and calculated it for all intersections of the construction right-of-way with forest patches of more than 10 acres of interior forest.
- They defined *indirect impacts* to address diminished ecosystem services in the surrounding forest area and the “separation of previously unified” forest patches. Virginia assessed indirect impacts where pipeline routes intersected patches of forest containing at least 100 acres of intact interior forest (defined as the area of the forest patch minus the 100-meter transition zone measured from its edge). This definition is also the one used in the Virginia Natural Landscape Assessment (VaNLA) to define a forest core.
- VaNLA determined the ecological values of forested cores relative to each other by analyzing numerous variables representing specific natural resource values. This was used to produce an “ecological integrity score” for each forest core, ranging from 1 (Outstanding) to 5 (General Significance). Indirect impacts on these forest cores were then calculated with respect to three fragmentation effects: increased edge effects, creation of smaller fragmented patches, and reduced size of original forest cores. These were used to calculate a “Core Integrity Impact” to capture the outcome for each forest core intersected by the route.³¹⁷

Impacts were then aggregated for the total number of VaNLA forested cores and non-core habitat fragments intersected by the pipeline – for the Atlantic Coast Pipeline, these were 145 and 58 habitat features, respectively. Then the affected cores were grouped by their ecological integrity ranks (1-2) and (3-5) in order to develop proposed *mitigation ratios* and *mitigation activities* to compensate for the total impacts. Virginia recognized three mitigation activities: (1) afforestation, (2) avoided deforestation (viz. preservation from deforestation by others), and (3) improvement of forest habitats.³¹⁸

Ratios for Forest Mitigation

Activity	Forest Habitat Class	Direct Impacts	Indirect Impacts
Afforestation	C1-C2 Cores	5:1	n/a
	C3-C5 Cores	3:1	
	Non-Cores	1.5:1	
Avoided Deforestation	C1-C2 Cores	7:1	4:1
	C3-C5 Cores	5:1	2:1
	Non-Cores	3:1	n/a

³¹⁷ Virginia calculated both a Fragmentation Factor and a Depth Factor for each intersected core. The Core Integrity Impact is expressed in acres, and is equal to the original (parent) core size x the Fragmentation Factor x the Depth Factor.

³¹⁸ Mitigation ratios borrow from the no-net-loss principle for wetlands, which requires higher ratios for preservation, for example. And enhancement activities (improvement of forest habitats) would be allowed only to mitigate for indirect (rather than direct) impacts.

Forest Habitat Improvement	C1-C2 Cores	n/a	3:1
	C3-C5 Cores		1.5:1

For the ACP, the methodology identified 3,243 acres of direct impact and 44,227 acres of indirect impact; the calculated compensatory mitigation based on the ratios resulted in claims for over 17,000 acres for direct impacts and over 112,000 acres for indirect impacts.³¹⁹

This forest impact mitigation methodology benefits from its basis in existing Virginia practice for assessing landscape values, and from its well-documented and reproducible sequence. This makes the result more likely to be accepted as a ground for negotiated results or for reliance on it by the Commonwealth in applying it to a 401 certification or other regulatory decision.

FERC’s final order in October 2017 granting the Certificate for the ACP identified impacts to forest lands. The FERC order found that even with several “specific” mitigation measures proposed in the Final EIS and certain mitigation requirements imposed as conditions of FERC’s order, there would still be “long-term to permanent significant impacts” to forested areas as a result of forest fragmentation from the project. FERC nevertheless expressly stated that “the Commission does not require or encourage applicants to participate in compensatory mitigation to groups, governments, or agencies.”³²⁰ FERC as a condition of the Certificate required the pipeline company to file an Implementation Plan, with descriptions of various environmental plans and protocols, and mitigation for various resources. However, while these conditions addressed certain specific local impacts (such as right of way through national forest lands, stream crossings, and protection of listed species) they *did not include* overall mitigation for forest fragmentation.³²¹ This left actual requirements for most mitigation for forest fragmentation effects up to the Commonwealth and the applicant.

Without direct backing from the FERC license, Virginia cited NEPA, Endangered Species Act consultation, compliance with the Migratory Bird Treaty Act, and maintenance of water quality, as bases for entering into mitigation agreements with the pipeline developers for forest conservation.

In the case of the ACP, the Commonwealth and pipeline developer entered into a Memorandum of Agreement on December 28, 2017 to mitigate the identified forest fragmentation effects.³²² The agreement recited the methodologies relied on, including Habitat Equivalency Analysis, and the VaNLA analysis to “analyze and design compensatory mitigation for forest fragmentation” described above.

³¹⁹ See Virginia Forest Conservation Partnership, *Assessing Impacts of Large Development Projects on Core Forest* (Powerpoint 2018). Corresponding MVP mitigation requests were nearly 5,000 acres for direct impacts, and 40,000 acres for indirect impacts.

³²⁰ *Atlantic Coast Pipeline, LLC*, Order Issuing Certificates, 161 FERC ¶161,042 (October 13, 2017), at 93. A similar approach was used for the Mountain Valley Pipeline Certificate, issued the same day.

³²¹ *Id.* at Appendix A:Environmental Conditions.

³²² Memorandum of Agreement for Mitigation of Virginia Forest Fragmentation Impacts of Atlantic Coast Pipeline (Dec. 28, 2017).

ACP agreed to pay \$57.85 million to support forest mitigation and related water quality actions. Of this total, \$38.65 million will be provided to the Virginia Outdoors Foundation, the U.S. Endowment for Forestry and Communities, and the Charlottesville Area Community Foundation to acquire easements and fee interests in forest lands that are “in reasonable proximity to, and within the same terrestrial ecoregion as, the location of forest impacts” to achieve “durable restoration and/or enhancement of forest habitats similar to those adversely impacted by the project,” and that will be additive to (not replacing) otherwise funded forest conservation projects in the areas.³²³ A similar agreement was entered into with the developers of the Mountain Valley Pipeline.³²⁴

Although the Commonwealth’s robust forest mitigation methodology was used to support Virginia’s comments to FERC and the development of its negotiating position on the scale of forest impacts to be addressed with each pipeline, outsiders cannot determine how the relevant numbers in the agreements were determined and how closely or not they track with the forest mitigation methodology.³²⁵

Recommendations

- Each state water quality regulator should explicitly require forest impact evaluation as part of each state’s § 401 water quality certification methodology. Link determination of forest landscape impacts and opportunities for compensatory mitigation to the Bay TMDL and Bay Model, as well as to state requirements. Adopt or modify Virginia’s detailed forest impact assessment methodology as a way of determining *direct and indirect impacts* across multiple forest parcels (public and private) in order to develop a mitigation methodology that is clear and reproducible. *Implementation Method: Administrative Interpretation, Rulemaking*
- Use the forest mitigation methodology on both private and public lands as a condition of public utility approvals of transmission and new generation capacity.³²⁶ *Implementation Method: Administrative Interpretation, Commission Decision, Rulemaking*
- Adopt additional forest conservation requirements. Maryland can improve on its existing Forest Conservation Act (FCA) to target afforestation and reforestation, such as recent proposed

³²³ Id. The ACP agreement also provided \$11.5 million to the Virginia Association of Soil and Water Conservation Districts for water quality projects to be implemented through activities and grants by the soil and water conservation districts in proximity to the project; \$7 million to the Virginia Environmental Endowment for water quality grants; and \$700,000 to the US Geological Survey to support water quality monitoring in Virginia.

³²⁴ Memorandum of Agreement for Mitigation of Virginia Forest Fragmentation Impacts of Mountain Valley Pipeline (Dec. 22, 2017) (funding of \$20 million to the VOF and U.S. Endowment for Forestry and Communities for forest land conservation; and for water quality, \$3.85 million to the Virginia Association of Soil and Water Conservation Districts; \$3 million to the Virginia Environmental Endowment; and \$650,000 to the US Geological Survey for monitoring).

³²⁵ Critics of the pipeline agreements suggest that the final numbers bear more relationship to parallel settlements in North Carolina than to a methodology. See, e.g. J. Socolow, North Carolina Document Dump Proves Terry McAuliffe’s Pipeline Immunity Deals Are McAwful, BlueVirginia (March 7, 2018).

³²⁶ Pennsylvania’s public trust obligation applies to all forest lands; it is not limited to publicly owned forests, and so provides a basis for state and local agency action and permit and right-of-way conditions.

legislation seeking to further define priority areas. Pennsylvania and Virginia may adopt legislation expressly requiring forest mitigation for certain large-scale impacts occurring in watersheds relevant to Bay TMDL goals. Even if a Maryland-style FCA is not politically feasible, it may be possible to create such requirements for specific kinds of activities (transmission, pipelines, solar facilities) resulting in land disturbance. *Implementation Method: Legislation*

Historic/Scenic Resources

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effects of their undertakings on historic properties (those resources eligible for the National Register of Historic Places) and to afford the Advisory Council on Historic Preservation (ACHP) the opportunity to comment on federal undertakings.³²⁷ The ACHP regulations for implementation of the Section 106 process require federal agencies to consult with other parties – the State Historic Preservation Officer (SHPO), Indian tribal historic preservation office (THPO), and the public – with an interest in the effects on historic properties.³²⁸ The Section 106 process includes initiating the Section 106 process, identifying historic properties, assessing adverse effects, and resolving adverse effects. Federal decision makers integrate Section 106 compliance with the NEPA process.³²⁹

The regulations implementing the NHPA require agencies to identify the Area of Potential Effects (APE).³³⁰ This defines the scope of the analysis. It includes consideration of direct effects, such as the area of ground disturbance, site access, and construction and permanent structures, and indirect effects, such as visual effects which extend from the direct effect area. Agencies must seek to avoid adverse effects on historic properties and mitigate those effects that cannot be avoided. The assessment is intended to lead to determinations of methods of avoidance, minimization, and mitigation with respect to the adverse effects identified. Visual impacts are often assessed qualitatively; but some quantitative methods (survey and property-value-based) can also be used. Consultation is used to develop alternatives or modifications to the federal undertaking, and to resolve potential adverse effects.³³¹ Federal agencies enter into a memorandum of agreement (MOA) or an alternative programmatic agreement with the ACHP and SHPO/THPO, to ensure that they carry out the requirements of Section 106.³³²

Protection of scenic resources not tied to historic properties and cultural landscape APEs must rely on state laws or conditions imposed by public utility regulators or FERC under their public interest reviews. Local governments may have some authority to address scenic values to the extent not preempted by state or federal law.

The states of this region all have experience with these issues.

³²⁷ 16 U.S.C. § 470.

³²⁸ 36 C.F.R. Part 800

³²⁹ 36 C.F.R. § 800.8(c)(1)(i)-(v).

³³⁰ 36 C.F.R. § 800.16.

³³¹ 36 C.F.R. § 800.14(b).

³³² 36 C.F.R. §§ 800.6(c), 800.14(d).

Pennsylvania

The Pennsylvania Historical and Museum Commission produced Guidelines for Projects with Potential Visual Effects.³³³ The Guidelines describe the identification of historic resources, the delineation of the Area of Potential Effects, and the assessment of visual and other effects. The Guidelines explicitly encompass the impacts of wind turbines and transmission corridors on historic resources. The Commission advises the use of photos, both aerial and directional, and photo-simulations of new features or towers (that are more than 10 percent taller or 20' than existing features). The Guidelines provide examples of “adverse visual effects” on historic properties that should be addressed, avoided, minimized, or mitigated:

- Elimination of open space or a scenic view that is critical to the ability of a property to convey its historic significance.
- Elimination of a sufficient number of small scale features (fence rows, tree lines, field patterns, etc.) that a property can no longer convey its historic use and significance.
- Introduction of a visual element that is incompatible, out of scale, detracts, or is out of character with the setting of a property or district.
- Blocking or intruding on a scenic view or blocking the view from one historic property to another.

They advise that “If adverse effects cannot be avoided or minimized, then it may be necessary to mitigate to compensate for the loss of integrity.”³³⁴

Such approaches and others were applied to the Susquehanna to Roseland transmission line in the Delaware watershed. In 2009, Pennsylvania Power and Light Electric Utilities (PPL) and Public Service Electric and Gas Company (PSE&G) requested a construction and right-of-way permit from the National Park Service (NPS) for construction of a 500kv electric transmission line. The line followed an existing route across NPS lands including the Delaware Water Gap NRA, Middle Delaware National Scenic and Recreational River, and Appalachian National Scenic Trail, and other routes outside these units. On October 1, 2012, after completion of an EIS and § 106 consultation, the NPS Regional Director signed the Record of Decision granting the permits.

For visual effects that could not be avoided or minimized, the NPS accepted as mitigation preparation of interpretive and historic educational materials, and improvements to physical aspects of historic properties in the affected area. The companies also agreed to contribute \$56 million dollars “to a mitigation fund to purchase and preserve lands for public use, enhance wildlife habitat and pathways for

³³³ Pennsylvania Historical and Museum Commission, *Guidelines for Projects with Potential Visual Effects* (2014).

³³⁴ *Id.* at 6-7.

migratory birds, improve public access to the Delaware River and the Appalachian Trail, and to offset impacts to wetlands, cultural and historic properties, and other impacts of the project.”³³⁵

Maryland

The State Division of Historic and Cultural Programs is in the Maryland Department of Planning, which includes the Maryland Historical Trust.³³⁶ The Trust creates and maintains the Historic Register to include all properties in the State that are listed in or eligible for listing in the National Register of Historic Places. There is a duty to consult on state capital projects and projects funded with general obligation bonds.³³⁷

A review of cultural resource files maintained by the Maryland Historical Trust identifies properties that must be addressed in considering approvals and CPCNs.

The Maryland Heritage Areas Authority in the Department of Planning recognizes and certifies state heritage areas.³³⁸ An area must contain resources of statewide significance that have retained integrity of setting and a cohesive character, and encompass one or more historic districts either listed in, or determined to be eligible for listing in, the Maryland Register of Historic Properties, or natural or recreational resources determined by the Secretary of Natural Resources to be of statewide significance.³³⁹ If there is direct state support for a project, the state agency supporting the project must show that “the activities will not have an adverse effect on the historic and cultural resources of the certified heritage area, unless there is no prudent and feasible alternative.”³⁴⁰

Maryland makes a viewshed analysis tool available on the state’s iMAP using LIDAR data.³⁴¹ Viewshed submittals are often required and are submitted in connection with the CPCN process conducted by Maryland’s Public Service Commission. The Maryland PSC’s environmental review criteria under statute expressly include “esthetics.”³⁴²

³³⁵ U.S. Dept. of Interior, Interior Approves Susquehanna-Roseland Transmission Line (Oct. 2, 2012). The project was upheld in a court challenge. *Natl. Parks Conserv. Assn v. Jewell*, 965 F. Supp.2d 67 (D.D.C. 2013), were the district court found that NPS took a hard look under NEPA, properly limited the alternatives, and considered compensatory mitigation for impacts.

³³⁶ Md. Ann. Code, State Fin & Proc., §5a-101 et seq.

³³⁷ Id. at §§ 5A-323, 5a-325.

³³⁸ Md. Ann. Code, Fin. Inst., § 13-1103, 13-1110, 13-1111.

³³⁹ Id. at 13-1110.

³⁴⁰ See Md. Ann. Code, Fin. Inst. Art., § 13-1112.

³⁴¹ http://imap.maryland.gov/Documents/Training/LiDAR_Mod6_ViewshedAnalysis.pdf

³⁴² Md. Ann. Code, Pub. Util. Cos. § 7-207(e)(2); as well as consistency local comprehensive planning and zoning. Id. at § 7-207(e)(3).

Virginia

Virginia's Department of Historic Resources (DHR) has adopted guidelines to assess impacts of proposed electric transmission lines on historic and cultural resources.³⁴³ These include evaluation of areas listed or eligible for listing in the Virginia Landmarks Register and National Register of Historic Places, surveys by qualified professionals, and avoidance, minimization, and/or mitigation of any moderate to severe impacts to eligible resources in consultation with DHR. The scale used by DHR identifies:

- a “minimal” impact on a listed or eligible property if the facility is in a viewshed with existing transmission lines and the change will be minor or the views are already obstructed by vegetation or topography;
- “moderate” impact if the viewshed has expansive views of the transmission line, there are more dramatic changes in line and tower height, and/or overall increases in visibility from the historic property; and
- “severe” impact if the relevant viewshed does not have existing transmission lines and where view are primarily unobstructed, where dramatic increase in tower visibility due to proximity, and viewsheds where visual introduction of the line is a significant change in the setting of the historic property.

Consultations can affect state decisions, including SCC certificate determinations for energy facilities. As a condition of approval of a transmission line, the SCC must determine that the line is needed and that the route “will reasonably minimize adverse impact on the scenic assets, historic districts and environment of the area concerned.”³⁴⁴ Environment includes “historic” as well as consideration of probable effects of the line on health and safety in the area concerned.³⁴⁵

Rappahannock Line 65

In December 2017, the SCC ordered Dominion Energy to install several miles of a transmission line replacement *beneath the bed* of the Rappahannock River, rather than overhead from proposed steel towers in the river as the company had sought.³⁴⁶ The SCC adopted the hearing examiner's findings that the underground option best serves to reasonably “minimize adverse impact on the scenic assets, historic districts and environment of the area concerned.” The SCC made this finding even though the Virginia DHR in its comments did not identify more than “minimal” impacts on listed or eligible resource properties. The SCC considered additional factors, including health and safety and reliability.

Skiffes Creek – James River Crossing

³⁴³ Va. Dept. Historic Resources, *Guidelines for Assessing Impacts of Proposed Electric Transmission Lines and Associated Facilities on Historic Resources in the Commonwealth of Virginia (2008)*. See also Virginia DHR, *Assessing Visual Effects on Historic Properties (2010)*.

³⁴⁴ Va. Code § 56-46.1.B.

³⁴⁵ Va. Code § 56-46.1D.

³⁴⁶ Application of Virginia Electric and Power Company, for approval and certification of electric transmission facilities: Line #65 rebuild across the Rappahannock River, Case No. PUE-2016-00021, Final Order (Dec. 21, 2017).

Dominion Power applied to the SCC for approval of an 8-mile 500kv line crossing the James River on overhead towers (4.1 miles over the river on 17 towers), and approval of related switching facilities and a 230kv transmission line. The SCC rejected underwater crossing of the James River as not technically viable and approved the overhead crossing.³⁴⁷ Because of the structures and discharges into waters of the United States, a federal Army Corps of Engineers permit was needed, which in turn required NEPA analysis and NHPA § 106 consultation. Like the SCC, the Corps also rejected underwater crossing, and issued a permit July 2017 conditioned on an agreement between applicant and the Virginia State Historic Preservation Office, the Advisory Council on Historic Preservation, and the Corps.³⁴⁸ Although, the National Parks Conservation Association and National Trust for Historic Preservation and Preservation Virginia filed suit against the Corps, alleging violations of NEPA, the NHPA, and the Clean Water Act, in May 2018 the U.S. District Court for the District of Columbia granted summary judgment for the Corps.³⁴⁹

The Memorandum of Agreement (MOA) relied on by the Corps addresses impacts to both direct and indirect Areas of Potential Effects, including numerous listed and eligible properties, historic districts, cultural landscapes and archeological sites. The MOA identified certain specific mitigation requirements including landscape documentation and compensatory mitigation projects. Dominion also agreed to provide \$85 million for “additional compensatory mitigation projects” classed by category of mitigation activities. The MOA allocates these funds among the Conservation Fund, the Virginia Department of Conservation and Recreation and Department of Game and Inland Fisheries, and the Virginia Environmental Endowment and Virginia Land Conservation Foundation. Funds include mitigation for direct, indirect, and cumulative adverse effects on historic properties and their related cultural and natural landscapes. Funding is to support projects that enhance or contribute to the setting and feel of sites in affected areas associated with early colonial, African-American, and Native American cultures. The agreement says it will support efforts associated with particular landscapes, construction activities, interpretation, support of Indian cultural values, water quality improvements relating to the landscape, and others.³⁵⁰

This third-party mitigation recipient approach had been outlined in the final 106 consultation document. In addition to a list of specific projects, the parties provided for projects and activities to be determined: “Dominion believed a more flexible approach was appropriate and therefore determined a total funding amount for each category of project or activity set out in the current MOA that are keyed to specifically affected historic properties... and provided guidelines for the timing and use of money from those funds by qualified third-parties” to carry out the mitigation with oversight by the Corps, SHPO, and ASHP, and

³⁴⁷ Application of Virginia Electric and Power Company d/b/a Dominion Virginia Power, for approval of and certification of electric facilities: Surry-Skiffes Creek, Case No. PUE-2012-0029, Final Order (Nov. 26, 2013).

³⁴⁸ Memorandum of Agreement Among Virginia Electric and Power Company, the Virginia State Historic Preservation Office, U.S. Army Corps of Engineer Norfolk District, and the Advisory Council on Historic Preservation (April 24, 2017, signed May 2, 2017).

³⁴⁹ National Parks and Cons. Assn. v. Semonite, Civ. No. 17-CV-01361-RCL (D.D.C. May 24, 2018). The judge found that the Corps had given “serious consideration” to alternatives and to visual and historic resource effects even though differing from National Park Service analysis.

³⁵⁰ Id. at II, III.

input from Dominion and the consulting parties. This approach is described as intended to enhance the integrity and values of the historic properties in different ways and “to resolve the identified adverse effects, nearly all of which are visual effects.”³⁵¹

The MOA also includes a commitment by Dominion *not to construct* in the future any new or additional transmission line infrastructure or height increases within the affected areas until such time as the towers are dismantled. It includes a further commitment to remove the structures if at any time during the next 50 years they are determined to be not needed, as well as agreement to, at the end of 50 years if transmission is still needed, replace the overhead crossing with a submerged crossing if feasible and permitted.³⁵²

Mountain Valley Pipeline and Atlantic Coast Pipeline

The Commonwealth of Virginia and the Mountain Valley Pipeline applicant entered into a Memorandum Agreement for Historic Resource Mitigation on December 22, 2017.³⁵³ The Commonwealth and the Atlantic Coast Pipeline applicant entered into a similar Memorandum of Agreement on January 12, 2018.³⁵⁴ These MOAs recited FERC’s determinations, following § 106 consultation, that the projects would result in adverse effect to historic properties. FERC’s determinations were followed by execution of programmatic agreements directing the pipelines to prepare specific treatment plans for all adversely affected properties to satisfy §106. However, the MOAs with the pipeline applicants expressly recite that “the Commonwealth’s commitment to our shared heritage and public benefit is *broader than that defined under Section 106.*” They state that the MOAs establish “a comprehensive, exceptional approach for compensatory mitigation” that is at least commensurate with project impacts, and meets the Commonwealth’s historic resources objectives. The Mountain Valley Pipeline committed to pay \$1.5 million to implement the site-specific treatment plans developed pursuant to FERC’s programmatic agreement, and \$1 million to the Virginia Historical Society to endow a mitigation fund to make grants to document, preserve, and interpret historic resources in pipeline-affected localities. The Atlantic Coast Pipeline committed \$3 million and \$7 million, respectively, for the same purposes.

The National Park Service granted approval to the Atlantic Coast Pipeline to install the pipeline beneath the Blue Ridge Parkway via horizontal directional drilling to ensure that there will be no visual impacts or surface impacts affecting users of the parkway.³⁵⁵

Virginia local governments may have some capacity to protect scenic resources, although the scope of this has not been tested in the energy context (and would not apply to FERC-certificated facilities). In 2010, Tazewell County adopted a zoning ordinance to prohibit tall structures on certain ridgelines, in

³⁵¹ Final Section 106 Consultation and Public Involvement Plan, Dominion Power’s Surry-Skiffes Creek-Wheaton Project, NAO-2012000080/13-V0408 (May 9, 2017).

³⁵² Memorandum of Agreement, at IV.

³⁵³ Memorandum of Agreement for Historic Resource Mitigation of Virginia Resource Impacts of Mountain Valley Pipeline (Dec. 22, 2018).

³⁵⁴ Memorandum of Agreement for Historic Resource Mitigation of Virginia Resource Impacts of Atlantic Coast Pipeline (Jan. 12, 2018).

³⁵⁵ Richard Zullo, Atlantic Coast Pipeline gets another approval, December 14, 2017 (Richmond.com)

response to the possibility of a utility-scale wind energy facility on East River Mountain.³⁵⁶ The county defined a “protected mountain ridgeline area” as areas above 3,200 feet in elevation and designated on its protected mountain ridgeline area map. The ordinance prohibited tall buildings or structures exceeding 120 feet in height within the mapped area or exceeding 40 feet in height on ridge tops within the area, except by variance, and established presumptions in favor of or against a variance within four subzones.

Other Information

The National Park Service has developed a *Guide to Evaluating Visual Impacts for Renewable Energy Projects*.³⁵⁷ This Guide includes a variety of tools that can be used to evaluate the completeness and quality of Visual Impact Assessments. It addresses not only various types of wind and solar generation facilities, but also associated transmission facilities. Of particular value are sets of checklists; these include elements of the visual impact analysis such as scope and methodologies, descriptions, key observation point (KOP) establishment and selection, viewer information, presentation of simulations, use of contrast assessment tools, impact assessment, and mitigation measures. The Guide also has individual detailed checklists for visual simulations and for mitigation measures. Mitigation measures addressed in the checklists include hundreds of potential best management practices, and specific practices targeted to onshore and offshore wind, to solar arrays, and to transmission. In considering methods to identify and address visual impacts, state agencies can use this guide to assist their consideration (or their development of comments and conditions related to public utility and FERC approvals).

There are additional technical tools available to assess visual impacts, including some developed specifically to address wind and solar facilities. For example, Argonne National Laboratory’s Environmental Science Division has completed a number of studies of visual impacts for the Bureau of Land Management to determine methods and measures of major, moderate, and minor impacts.³⁵⁸ They have also developed a Visual Impact Risk Assessment and Mitigation Mapping System, which is a prototype GIS software tool to generate maps that show relative visual impact zones associated with projected wind energy development.

Various tools make use of the Key Observation Point approach together with various forms of simulations to discern impacts, identify alternatives, and develop approaches to mitigation.

³⁵⁶ Tazewell County Code of Ordinances, Art. VI, §15-110 to -127.

³⁵⁷ National Park Service, *Guide to Evaluating Visual Impacts for Renewable Energy Projects*. Natural Resource Report NPS/ARD/NRR—2014/836, available at http://blmwyomingvisual.anl.gov/docs/NRR_VIAGuide-RenewableEnergy_2014-08-08_large.pdf.

³⁵⁸ <http://visualimpact.anl.gov>. Studies include *Wind Turbine and Visual Impact Threshold Distances in Western Landscapes*; and *Visual Impacts of Utility-Scale Solar Facilities on Southwestern Desert Landscapes*. See also, *Best Management Practices for Reducing Visual Impacts Associated with Renewable Energy Facilities on BLM-Administered Lands* (2013). Although developed for the western United States, this best management practices guide includes numerous methods to reduce visual impacts of wind, solar, and geothermal facilities, including ancillary facilities. http://blmwyomingvisual.anl.gov/docs/BLM_RenewableEnergyVisualBMPs_LowRes.pdf.

Legal tools can play a role as well. Under Maine’s Wind Energy Act, developers of most wind power projects (in the incorporated areas of Maine) must provide a visual impact assessment if the project is within 3 miles of a scenic resource of state or national significance, and the approving body may require such assessment based on a potential for significant adverse effects on scenic resources within 8 miles of the project.³⁵⁹ There is a substantial list of land and water categories that are defined as scenic resources of state or national significance: including state parks, great ponds, segments of a scenic river or stream identified as having unique or outstanding scenic attributes, a scenic viewpoint located on state public reserved land or on a trail that is used exclusively for pedestrian use, such as the Appalachian Trail, that the Department of Agriculture, Conservation and Forestry designates by rule, a scenic turnout constructed by the Department of Transportation, and others.³⁶⁰ Statutory criteria used to determine impact include: “A. The significance of the potentially affected scenic resource of state or national significance; B. The existing character of the surrounding area; C. The expectations of the typical viewer; D. The expedited wind energy development’s purpose and the context of the proposed activity; E. The extent, nature and duration of potentially affected public uses of the scenic resource of state or national significance and the potential effect of the generating facilities’ presence on the public’s continued use and enjoyment of the scenic resource of state or national significance; and F. The scope and scale of the potential effect of views of the generating facilities on the scenic resource of state or national significance, including but not limited to issues related to the number and extent of turbines visible from the scenic resource of state or national significance, the distance from the scenic resource of state or national significance and the effect of prominent features of the development on the landscape.”³⁶¹

Issues still arise how best to integrate scenic and visual resources with laws that are primarily directed at protecting natural resources and cultural resources. How can visual values be rigorously accounted for and integrated into systems that aim primarily at environmental and cultural and historic resources? Even in those regulatory systems that specifically include “esthetics” in decision criteria (as in the Maryland statute governing PSC approval of transmission lines and new generation facilities), it is desirable to identify and use reproducible and consistent methodologies where available. Current approaches in the field include not only new analytical tools, but also ways to define scenic and visual resources as “ecosystem services.”³⁶²

³⁵⁹ 35-A M.R.S. §3452. “The primary siting authority shall consider the primary impact and the cumulative scenic impact or effect of the development during both day and night on scenic resources of state or national significance. In evaluating cumulative scenic impact or effect associated with sequential observation, the department shall consider, in addition to the criteria in this subsection, the distance between viewpoints on the linear route and other forms of development along the linear route that effect the expectation of the user of the scenic resource of state or national significance.”

³⁶⁰ 35-A M.R.S. §3451(9).

³⁶¹ 35-A M.R.S. §3452(3).

³⁶² See generally, Argonne National Laboratory, Visual Resource Stewardship Conference (Nov. 7-9, 2017), and especially presentations by R. Smardon, R. Ribe.

Recommendations

- Improve scenic resource assessments for transmission corridors and wind and solar generating facilities. Require evaluation of undergrounding of transmission and pipelines by public utility regulators. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation*
- Adopt use of advanced scenic resource evaluation techniques and checklists, as the basic requirement for public utility commission reviews, and develop preferred compensatory measures for these particular kinds of impacts. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision*
- Ensure protection of viewsheds under state law, public utility regulation, or local land use regulations even where there is not a historic property affected – relying either on existing legislation (e.g., Maryland PSC authority to address “esthetic” impacts) or with new legislation allowing consideration of such impacts. *Implementation Method: Rulemaking, Commission Decision, Legislation*
- Expand advanced identification of cultural landscapes where possible. Approaches like the map-based tools used for natural heritage and sensitive habitat early identification could help project planners consider avoidance and minimization, and help permitting agencies identify potential cumulative impacts in areas of possible future interest for linear facilities or wind and solar generation. Advance identification should improve siting decisions with respect to cultural landscapes well before the mitigation stage. *Implementation Method: Administrative Interpretation, Education and Outreach*
- State agencies could provide incentives for the adoption of local ordinances in priority locations: Local governments have authority to affect the siting of wind and solar electric generating facilities either directly or through public utility regulatory deference. They can also provide for conservation of ridge tops under local ordinances. And local governments can designate local conservation investments that can be preferred for compensatory mitigation when linear energy facilities traverse local conservation lands/cultural resources. *Implementation Method: Administrative Interpretation, Commission Decision, Legislation*

Conservation Easements and Lands Programs

Several state programs allow state agencies, local governments, and/or dedicated nonprofit land trusts to buy land and conservation easements. These constrain incompatible development and penalize nonconforming uses of the property. However, many of these programs have exceptions that allow for the exercise of eminent domain pursuant to linear energy projects or for the voluntary purchase of a right-of-way easement through protected land if the proposed energy project has been certified as serving the public convenience and necessity.

Further, programs differ on compensatory mitigation for converting or condemning protected land.

Readily identifying conserved lands in advance of a project proposal has historically been an issue, but all three states now have GIS-based tools that identify lands held under conservation easements under various programs. The Chesapeake Bay Agreement commitments to add to the total quantity of lands in conservation status has led to additional improvements and requirements for transparency and tracking.³⁶³

The states also confront issues of siting pipelines and transmission lines on state-owned conservation lands such as state parks, forests, and game lands.

Pennsylvania

Pennsylvania has a number of relevant land conservation programs. The Agricultural Conservation Easement Purchase Program, under the Pennsylvania's Agricultural Area Security Law, authorizes the Commonwealth and counties to acquire easements to protect "farming operations in agricultural security areas from incompatible nonfarm land uses" and "assure permanent conservation of productive agricultural lands."³⁶⁴ Among other requirements, at least half the protected tract must be cropland, pasture, or grazing land. While there are provisions for heightened considerations and board approvals to carry out condemnation of land in an agricultural security area, those provisions do not apply to public utilities "the necessity for and the propriety and environmental effects of which has been reviewed and ratified or approved by the Pennsylvania Public Utility Commission or the Federal Energy Regulatory commission."³⁶⁵

Agricultural conservation easements under the Agricultural Area Security Law are perpetual³⁶⁶ and any conveyance of such easements requires State or county board approval.³⁶⁷ Further, a "public entity,

³⁶³ In 2018, the Chesapeake Bay Program officially adopted the Protected Areas Database (PAD_US) standards to define the attributes of datasets to be used to make sharing of conserved lands data useful and compatible across all agencies and users.

³⁶⁴ 3 P.S. § 902

³⁶⁵ 3 P.S. §913

³⁶⁶ 3 P.S. §914.1(c)(1)

³⁶⁷ 3 P.S. §914.1(c)(5)

authority or political subdivision” exercising eminent domain over such lands, must provide “just compensation” that includes payments to the county for replacement agricultural conservation easements.³⁶⁸ Those payments are intended for the purchase of new agricultural conservation easements, and counties are penalized for failing to make such purchases within two years. Enforcement of agricultural easements is only by the county agricultural preservation boards. A third party cannot bring an enforcement action contending that the easement has been impaired by activities on the land such as use by energy facilities.³⁶⁹

Pennsylvania’s Open Space Lands Act allows the Department of Conservation and Natural Resources to “acquire any interest in real property” to (among other goals) “protect and conserve forests;” the Department of Agriculture (PDA) to acquire property interests to “protect and conserve farmland;” and local governments to acquire property interests for any of the conservation purposes enumerated in the act.³⁷⁰ Any property acquired in fee simple by the DCNR or PDA under the Act must be resold publicly within two years, subject to “restrictive covenants or easements limiting the land to...open space use.”³⁷¹ However, the DCNR, the PDA, or local government holding a property interest other than fee simple can, with the approval of the State Planning board or County Planning Commission, terminate or sell such open space property interest when doing so is “essential for the orderly development of an area.”³⁷²

Open space property interests are not protected from “acquisition, by lease, purchase, or eminent domain, and use of right of way” by public utilities if the Pennsylvania Public Utility Commission has found “such acquisition and use are necessary or proper for the service, accommodation, convenience or safety of the public.”³⁷³ However, in June 2018 the General Assembly passed a bill to require prior court approval of the condemnation by public utilities or government agencies of lands that are subject to an open space conservation easement. (Such approval is not required for condemnation of lands for underground public utility facilities that do not permanently affect the open space benefits protected by the easement.) The court must determine that there is “no reasonable and prudent alternative” to the proposed condemnation. The approval requirement does not apply to condemnations carried out under FERC authority.³⁷⁴

In 2016, Pennsylvania’s governor received the report of the Governor’s Pipeline Infrastructure Task Force.³⁷⁵ This 600-page report made numerous recommendations related to siting and approval of natural gas and petroleum liquids pipelines. One of the recommendations was to require pipeline developers to identify affected conservation lands and demonstrate that they have first avoided these lands (or limited their impacts on these lands) wherever possible; the state could provide a central database of these lands and the types of protections needed. Best management practices would be

³⁶⁸ *Id.*

³⁶⁹ *Schwartz v. Chester County Agricultural Pres. Bd.* (Pa. Commw. March 2, 2018).

³⁷⁰ 32 P.S. § 5005

³⁷¹ 32 P.S. § 5007

³⁷² 32 P.S. § 5010

³⁷³ 32 P.S. § 5011

³⁷⁴ Pa. General Assembly HB 2468, 2018 Session, enacted as Act 45 of 2018.

³⁷⁵ Pennsylvania DEP, Governor’s Pipeline Infrastructure Task Force (PITF) Report (February 2016).

required for the lands affected. Then compensatory mitigation would be required for unavoidable impacts.³⁷⁶ As noted earlier in this report, the Pennsylvania Spatial Data Access (PASDA) has recently (May 2018) made available GIS layers for all lands across the Commonwealth under conservation easements (including open space, agricultural, land trust, and other easements), and conserved lands in public ownership, making it possible to carry out the recommendation, should it be implemented.³⁷⁷

An additional recommendation of the Task Force addressed the need to establish mitigation payments and requirements to make up for lost uses (e.g. for viewsheds, landscape fragmentation), noting the use of such an approach for mitigation for the Susquehanna to Roseland electric transmission line in the upper Delaware region.³⁷⁸

The Pennsylvania DCNR is developing a guidance document for mitigation funds resulting from impacts to state park lands from electric transmission projects and transportation. DCNR established a special mitigation account in 2017, and is currently developing a “mitigation assessment methodology” to determine the monetary compensation due for lost recreational use and natural resource values (using methodologies similar to those used for determining Natural Resource Damages under federal hazardous substance and oil pollution laws).

The State Bureau of Forestry has issued Guidelines for Administering Oil and Gas Activity on State Forest Lands³⁷⁹ which advocates a “strategic landscape approach” for siting of pipelines, including principles of avoiding incompatible areas and evaluation of alternative routes, as well as consideration of co-location, construction methods, materials, stream crossings, restoration, and vegetation management.³⁸⁰

Maryland

Maryland has several programs for publicly funded acquisition of lands and easement interests.

The *Rural Legacy Program* is administered by the Rural Legacy Board in the MDNR. It provides state funds to local governments and land trusts to acquire land and conservation easements to protect agricultural and forest lands.³⁸¹ Criteria for evaluating and comparing applications include the “degree to which proposed fee or easement purchases will protect the location, proximity, and size of *contiguous* blocks of lands, green belts or greenways, or agricultural, forestry, or natural resource corridors” and “how well the plan will maximize acquisition of real property interests in *contiguous* blocks of land within the Rural Legacy Area while providing for protection of isolated acquisitions

³⁷⁶ Id. Conservation and Natural Resources Recommendation #4.

³⁷⁷ <http://www.pasda.psu.edu> (search for PA Conserved Land, or select “Pennsylvania Land Trust Association” under “search by data provider”). The map is available on <https://conservationtools.org> at “PA Mapping”.

³⁷⁸ Pennsylvania DEP, Governor’s Pipeline Infrastructure Task Force (PITF) Report - Conservation and Natural Resources Recommendation #5.

³⁷⁹ Pa. DCNR, Bureau of Forestry, Guidelines for Administering Oil and Gas Activity on State Forest Lands (4th ed. 2016).

³⁸⁰ Id. at 48-53.

³⁸¹ Md. Code Ann. Nat. Res. §5-9A-01

important to the plan.”³⁸² Defining breach of easement terms by a grant sponsor and available remedies are specified in the grant agreements.

Any property interest acquired under the Rural Legacy Program is in perpetuity and may not be amended or modified without the approval of the grantee, the Board, and the Board of Public Works. Fee simple properties can be managed for passive recreation as well as scenic and open-space value, and all easements must be monitored according to the stewardship protocol written by the Sponsor and approved by the Rural Legacy Program. Violation of the maintenance requirements under the grant agreement can result in the Rural Legacy Board withholding approval of grant requests, withholding payment for the costs of approved projects, assuming direct responsibility to maintain the project and charging the sponsor for the costs of doing so, or initiating legal action to enforce “the terms of the Grant Agreement, the conservation easement, or the restrictive covenants on property acquired with Rural Legacy funds.”³⁸³

Maryland’s *Program Open Space* provides grant funds to counties and local governments for open space easements. It also supplies funds to the Maryland Environmental Trust (MET) and Maryland Agricultural Land Protection Foundation (MALPF).³⁸⁴

MALPF purchases agricultural preservation easements that restrict development in perpetuity on farms and woodlands. All easements approved for purchase by the Board of Public Works on or after October 1, 2004, are perpetual and not eligible for termination.³⁸⁵ With few exceptions, the landowner whose land is subject to an agricultural preservation easement cannot subdivide the land or use it for a commercial, industrial, or residential purpose.³⁸⁶

Condemnation of protected lands for public purposes is authorized. However, when an “agency of the State or of a county or other governmental authority” seeks to condemn land under a MALPF or county-held agricultural preservation easement for “economic or residential development,” the condemning authority must demonstrate to the satisfaction of the Board of Public Works that (1) a greater public purpose exists than that served by the Foundation easement, and (2) there is no reasonable alternative site. However, power transmission lines or natural gas pipelines are expressly exempt from this board review.³⁸⁷ When eased land is condemned, the condemning authority must reimburse MALPF or a county agricultural land preservation program the amount they paid for that portion of the easement; in 2018, the General Assembly amended the law to provide that on or after July 1, 2018, the amount reimbursed would be the current fair market value of the interest condemned.³⁸⁸

In 2018, the General Assembly considered, but did not pass, a bill that would have authorized condemnation of lands under permanent conservation easements for an electric transmission or

³⁸² Md. Code Ann. Nat. Res. §5-9A-05(c)(5)(iv)

³⁸³ *Rural Legacy Program Manual*, pg 31 (April 2009), available at <https://tinyurl.com/y9akduun>

³⁸⁴ Md. Code Ann., Nat. Res. § 3-201

³⁸⁵ Md. Code Agric. §2-514.1

³⁸⁶ Md. Code Agric. §2-513

³⁸⁷ Md. Code Agric. §2-515

³⁸⁸ 2018 Sess. Chap. 622 (amending Md. Code Agric., § 2-515).

qualified generator lead line *only* if there is no “physical alternative route” (without consideration of cost, and considering need for the line based solely on physical capacity and not economic benefit), and requiring payment for full value of the easement to the trustees.³⁸⁹

Virginia

The *Virginia Land Conservation Foundation* was established by law to plan state conservation land acquisitions.³⁹⁰ The *Open Space Lands Preservation Trust Fund* provides direct funds to state agencies for state land acquisition and is administered by the Virginia Outdoor Foundation (VOF), a quasi-governmental land trust established by law that owns a combination of open space land and easements.³⁹¹

The *Virginia Conservation Easement Act* (VCEA) authorizes nonprofit organizations to acquire easements on real property to protect scenic, natural, or open space values.³⁹² The VCEA requires a Virginia-based land trust to have been in existence for 5 years, or a national land trust to have maintained an in-state office for 5 years, before either is permitted to hold a conservation easement (or co-hold with a qualifying entity).

The VCEA expressly provides that it “does not...in any way limit the power of eminent domain as possessed by any public body,” and that “in any such proceeding the holder of the conservation easement shall be compensated for the value of the easement.”³⁹³ While the specific reference to public bodies could be interpreted to leave open the possibility of using the VCEA against a private entity’s attempt to use eminent domain, but (1) a public utility may constitute (or be acting on behalf of) a “public body” for the purposes of the VCEA and (2) the reference to public bodies does not preclude the provision from applying to private entities.³⁹⁴

The *Open-Space Land Act* allows public bodies to purchase (or receive as a gift) open-space land or easements.³⁹⁵ Open-space easements include interests in land created to retain or protect natural or open-space values, including assuring availability for agricultural, forestal, recreation, or open-space values, protecting natural resources, and maintaining or enhancing air or water quality. Open-space lands and easements held by public bodies may not be “converted or diverted” from open-space land use unless:

³⁸⁹ 2018 Sess. HB 812 (amending Md. Ann. Code, Pub. Utils. §7-207.)

³⁹⁰ Va. Code § 10.1-1017

³⁹¹ Va. Code § 10.1-1020(C)

³⁹² Va. Code Ann. § 10.1-1009

³⁹³ Va Code Ann. §10.1-1010

³⁹⁴ See Nancy McLaughlin, *Condemning Open Space: Making Way for National Interest Electric Transmission Corridors (Or Not)*, 26 Va. Env'tl. L.J. 399 (2008) (arguing the inclusion of “public body” could be interpreted to mean utility companies do not qualify for the unrestricted use of eminent domain under the provision, but acknowledging that argument would likely fail).

³⁹⁵ Va. Code Ann. § 10.1-1701

- (i) the public body holding the easement determines that it is essential to “orderly development and growth” and adheres to the local “official comprehensive plan” of the locality;
- (ii) property of at least equal fair market value and of greater conservation value is substituted for the land converted or diverted; and
- (iii) the substitute property is subject to the provisions of the Open-Space Land Act.³⁹⁶

The Open-Space Land Act thereby restricts voluntary conversion or diversion of open-space lands or easements held by public bodies for linear energy projects. Specifically, the provision requiring substitute property to be of greater conservation value could be applied in analyzing the adequacy of whatever land is offered as compensatory mitigation for linear energy projects.

Applying the requirements of the Open-Space Land Act to eminent domain for construction of a linear energy project is less straightforward. Under Virginia law, public service corporations can exercise eminent domain to acquire land or a right-of-way easement from any person if the land or easement is necessary for the construction or alteration of its lines, facilities, or works.³⁹⁷ But the Open-Space Land Act provides that “insofar as the provisions of [the Act] are inconsistent with the provisions of any other law, the provisions of [the Act] shall be controlling.”³⁹⁸ Therefore, in a conflict between an exercise of *state*-delegated eminent domain and the terms of an open-space easement or property held by a public body, the Open-Space Land Act may offer protection against a condemnation that violates the terms of the Act.

If the power of eminent domain is granted by the *federal* government, the protections of the Open-Space Land Act likely do not apply. The VOF recently confronted this issue. In 2016, Dominion Energy informed VOF that the Atlantic Coast Pipeline (ACP) would need to cross 10 VOF-held open-space easements and the developer of the Mountain Valley Pipeline (MVP) advised that it would require a permanent access road across another VOF-held open-space easement. On October 13, 2017, the Federal Energy Regulatory Commission granted a Certificate of Public Convenience and Necessity for both the ACP and the MVP.³⁹⁹ A CPCN to construct a natural gas pipeline issued by FERC confers the power of eminent domain on the certificate holder.⁴⁰⁰

VOF maintained that each certificate holder had failed to demonstrate that the projects were “essential to the orderly development and growth of the locality” as required by the Open-Space Land Act, but also acknowledged that the Natural Gas Act supersedes and preempts the requirements of the Open-Space Land Act.⁴⁰¹ VOF ultimately accepted an “easement swap” whereby the ACP right-of-way would pass

³⁹⁶ Va. Code Ann. §10.1-1704

³⁹⁷ Va. Code Ann. § 56-49.2 (2006)

³⁹⁸ Va. Code Ann. §§10.1-1705

³⁹⁹ 161 FERC 61,042 (2017); 161 FERC 61,042 (2017)

⁴⁰⁰ Natural Gas Act, 15 USCA §717f(h)

⁴⁰¹ Virginia Outdoors Foundation Board of Trustees Resolution Regarding Atlantic Coast Pipeline, LLC § 10.1-1704 Conversion Applications, available at

http://www.virginiaoutdoorsfoundation.org/download/issues/20171016_vof_bot_acp_mvp_resolutions.pdf

through 53 acres of easement-protected areas but Dominion Energy would convey to VOF two other properties amounted to about 1100 acres and \$4 million for conservation management on the newly obtained land. The MVP developer agreed to convey approximately 10 acres in substitute for a 0.32-acre easement for the access road, and about \$75,000 in stewardship funds.⁴⁰²

Some negotiation to avoid conservation lands occurred in connection with the MVP FERC process. The state and conservation organizations played an active role in identifying impacts of the proposed route on conservation lands, including sensitive landscapes and resources. This resulted in some re-routing in the final certificate from the original proposal under license conditions approved by FERC.⁴⁰³

Linear projects crossing federal lands also trigger review under substantive federal land management statutes and regulations, and require analysis under NEPA. In July 2018, the U.S. Court of Appeals for the Fourth Circuit reversed the approvals by the U.S. Forest Service and Bureau of Land Management for rights-of-way across federal lands for the Mountain Valley Pipeline, finding deficiencies in the analysis the agencies used when relying on the FERC EIS.⁴⁰⁴

Recommendations

- Enact exclusions of some or all conservation easement lands from eminent domain under state law or require additional showings related to physical necessity and lack of practicable alternatives. *Implementation Method: Legislation*
- Legislation can define the compensatory mitigation required for impairment of an easement, including whether a compensation ratio greater than 1:1 should be required.
 - Define offsets that recognize that crossing of these lands with a linear energy feature needs to be offset by more than just funding for replacement of the physical occupation, but reflecting impairment of the forest/agricultural/recreational parcel for many landscape-level purposes
 - Define requirements for expenditure or offset in the same vicinity, serving same purpose or higher priority conservation purpose as defined by state policy (see above). *Implementation Method: Legislation*

⁴⁰² Id.

⁴⁰³ The certificate approved a route avoiding the Mill Creek Springs Natural Area Preserve, for example.

⁴⁰⁴ *Sierra Club v. United States Forest Service*, No. 17-2399 (4th Cir. July 27, 2018), <http://www.ca4.uscourts.gov/opinions/172399.P.pdf>. The court found that the Forest Service failed to explain its acceptance of a revised hydrological study that did not address its concerns expressed in its comments on the Draft EIS, and also failed to explain how its amendment to a Forest Management plan to allow the pipeline complied with newer standards for forest plans. BLM failed to consider alternative routes across federal land as required by the Mineral Leasing Act (standard of making use of existing rights of way except where impractical), and was not excused from making its own analysis by FERC's alternatives discussion.

- Legislation can define limits on solar/wind siting allowed on easement parcels. *Implementation Method: Legislation*
- Each state now requires some mitigation for direct impacts to state-owned lands. Each should complete adoption of offset/funding policies/regulations, and determine what mitigation for indirect impacts should be required. *Implementation Method: Administrative Interpretation, Rulemaking, Legislation*
- Avoidance of conservation lands by project developers can be improved by states continuing to integrate GIS data on conservation easements with their natural heritage and other data accessible to project developers and applicants. *Implementation Method: Administrative Interpretation, Education and Outreach*

Public Trust Doctrine

The public trust doctrine is a state constitutional (or pre-constitutional) doctrine that obliges a state to manage certain resources for the benefit of its citizens. In most of the U.S. it is limited to submerged lands and tidally-influenced or navigable waters, but in several states (including Pennsylvania) the state constitution extends it to a broader array of resources.

Pennsylvania

In 1971 Pennsylvania adopted a constitutional provision as part of the Commonwealth's Declaration of Rights ("the Environmental Rights Amendment"). Article 1, Section 27 of the Pennsylvania Constitution provides:

The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.⁴⁰⁵

For more than forty years this provision has been held by the Pennsylvania courts to apply to all instrumentalities of Pennsylvania state and local government. But until recently, the test employed by the Pennsylvania courts to determine whether a state or local action would pass constitutional muster was primarily a procedural one. And although often applied, the amendment had never been invoked successfully to overturn an action of the state legislature, state agency, or a local government.⁴⁰⁶

Recently, however, the Pennsylvania Supreme Court revitalized the Environmental Rights Amendment. In 2013, a plurality of the Court in *Robinson Twp. v. Commonwealth*,⁴⁰⁷ and in 2017, a majority of the Court in *Pennsylvania Environmental Defense Fdn. v. Commonwealth* (hereafter *PEDF*),⁴⁰⁸ invoked the Amendment to strike down separate acts of the Pennsylvania legislature. The Court expressly abolished

⁴⁰⁵ Pa. Const., Art. 1, §27.

⁴⁰⁶ The Commonwealth Court (Pennsylvania's intermediate appellate court) in *Payne v. Kassab*, 312 A. 2d 86 (Pa. Commw. 1973), *aff'd*. 361 A.2d 263 (Pa. 1976), set up a 3-part test for evaluating state and local actions under the Amendment: 1) was there compliance with all applicable statutes? 2) Does the record demonstrate a reasonable effort to reduce the environmental incursion to a minimum? 3) Does the resulting environmental harm so clearly outweigh the benefits as to constitute an "abuse of discretion"? The *Payne* test was used by the Pennsylvania lower courts for forty-five years, although it was never adopted by the Pennsylvania Supreme Court.

⁴⁰⁷ 83 A.3d 901 (Pa. 2013) (Plurality of three justices relied on Amendment to strike down legislative preemption of local land use powers affecting oil and gas operations, finding that Pennsylvania's 2012 Oil and Gas Act illegally destroyed local governments' ability to implement their duty under the Amendment to protect the environment; the concurring justice reached the same result on substantive due process grounds).

⁴⁰⁸ J-35-2016, No. 10 MAP 2015, (slip op.) (Pa., June 20, 2017) (Court holds that the Pennsylvania legislature violated public trust in publicly owned natural resources by diverting oil and gas royalties from state-owned lands into the general fund rather than to maintenance and improvement of public natural resources).

the previous procedural test as having no basis in the text; it further confirmed that the amendment is self-executing and needs no legislation to give it enforceability.⁴⁰⁹

In *PEDF* the Court explained that the first sentence of the amendment creates a *civil right*, and that the second and third sentences create a *public trust* obligation. Both parts of the amendment apply to the actions and decisions of the Commonwealth and to local governments.⁴¹⁰

Public Trust Obligation

The *PEDF* Court used the “public trust” portion of the amendment to invalidate the legislature’s wholesale diversion of oil and gas revenues derived from leases on state forest and park lands to the general fund rather than to conservation purposes. The Court held that the Commonwealth must deal with public natural resources as a fiduciary, with obligations of “prudence, loyalty, and impartiality.”⁴¹¹

The Court explained that the public trust responsibility imposes two basic duties: “First, the Commonwealth has a duty to prohibit the degradation, diminution, and depletion of our public natural resources, whether these harms might result from direct state action or from the actions of private parties... Second, the Commonwealth must act affirmatively via legislative action to protect the environment.”⁴¹² Moreover, while a trustee has discretion over the corpus (contents) of the trust, its exercise of that discretion is “limited by the purpose of the trust.....and does not equate ‘to mere subjective judgment.’”⁴¹³

While the scope of public trust rights will be discerned through future litigation and legislation, this is a live area for advancement in the law. Among the many areas up for interpretation will be understanding how concepts of trust law should apply to a variety of public natural resources (such as air, water, and natural and scenic and historic and esthetic resources) whose “ownership” may be less clear than state forest and park lands.

The nature of these trust obligations also will be further explored. Relevant trust responsibilities might include duties to inventory and account for the assets of the trust (just as the executor of an estate must do), and what it means to manage the corpus for the beneficiaries “including generations yet to come.” Thus, it is possible that Pennsylvania’s investments in its natural heritage program and further definition of habitats and areas of special concern may be foundational to future applications of the doctrine.

⁴⁰⁹ *PEDF*, slip. op. at 39-40. Over several decades, scholarly commentary on whether the amendment was self-executing has been far more muddled than the actual case law. Ever since the Pennsylvania Supreme Court’s 1976 decision affirming *Payne*, the amendment was treated by the Pennsylvania courts as self-executing: “No implementing legislation is needed.” *Payne*, 361 A. 2d at 272 (1976). However, some commentators had been misled by a plurality opinion in *Commonwealth v. National Gettysburg Tower, Inc.*, 311 A.2d 588 (Pa. 1973), in which two justices had opined that the amendment was not self-executing. See *Robinson Twp.* 83 A.3d at 940.

⁴¹⁰ The court largely endorsed the analysis of Widener Law Professor John Dernbach, *Taking the Pennsylvania Constitution Seriously When it Protects the Environment: Part 1- An Interpretive Framework for Article I, Section 27*, 103 Dick. L. Rev. 693 (1999).

⁴¹¹ *PEDF*, slip op. at 31, quoting *Robinson Twp.* 83 A.3d at 956-957.

⁴¹² Slip op. at 32-33 (citation omitted).

⁴¹³ Slip op. at 33 (citation omitted).

The amendment is a source of legislative authority. And it must be used as a guide for statutory construction and rulemaking. It may also be used by state and local governments to defend environmentally protective actions whose authority might otherwise be subject to challenge. There is a current legal challenge pending before Pennsylvania’s Commonwealth Court concerning whether a public utility seeking to exercise PUC-conferred condemnation powers for a natural gas pipeline is obliged to carry out the trusteeship duty itself (arguably acting as an entity or agent of the Commonwealth).⁴¹⁴

Civil Rights

Moreover, the “environmental rights” portion of the amendment has not yet been interpreted by the Pennsylvania courts under the new approach. Perhaps the vindication of the rights of the people in “preservation of the natural, scenic, historic, and esthetic values of the environment” means that piecemealism in reviewing the impacts of large projects is actually unconstitutional in Pennsylvania. For example, analysis of impacts on “the rights of the people” in these resources might be required whenever a large-scale project is under consideration, and where individual assessment of components (such as permitting of stream crossings, sediment and erosion control plans, impact on state-owned lands) would not capture all the impacts.

A court might also consider defining a duty of the Commonwealth and local governments to use a “non-impairment” or “least restrictive means” analysis when considering whether to approve impacts to the public’s rights in environmental resources. This analytical doctrine is used when governments take actions that may affect *other civil rights* (such as the free exercise of religion, freedom of speech, or equal protection of the laws). Thus, avoidance and minimization of impacts may be constitutionally required across the entire range of landscape values – not just wetlands or species as under statutory law.⁴¹⁵

Among the other states with state constitutional amendments protecting the environment for future generations or declaring environmental rights, the most developed case law has been in Montana, Louisiana, and Hawaii. Hawaii’s Supreme Court in December 2017 invoked that state’s “right to a clean and healthful environment” under the state constitution, to guarantee citizens the right to intervene in a state Public Utilities Commission proceeding to oppose an applicant’s approval of an agreement that the citizens believed was too reliant on coal-fired generation, and to require the Commission to consider

⁴¹⁴ The court, *en banc*, agreed to decide this issue, transferring a case from Common Pleas court to the Commonwealth Court, while dismissing certain other claims as premature. *Clean Air Council v. Sunoco Pipeline, L.P.*, No. 1112 C.D. 2017 (Pa. Cmlth. April 30, 2018).

⁴¹⁵ Pennsylvania’s Environmental Hearing Board, an administrative appeal tribunal that reviews permitting and other actions by the Pennsylvania Dept. of Environmental Protection, made a first attempt to develop an approach to evaluate permit approvals and denials for mining under the “environmental rights” language, after the *PEDF* decision was rendered. Strangely, however, in upholding one set of permits issued by the DEP, it seems to have almost instinctively recreated the abolished *Payne* test. *Center for Coalfield Justice v. Commonwealth*, EHB 20140972-B (August 15, 2017) (Permit issuance does not violate environmental rights amendment because: 1) Action does not violate a statute or regulation; 2) the Department “considered” the “environmental effects” of the proposed action; 3) the action does not cause “unreasonable degradation or deterioration” of the protected resource).

their arguments about greenhouse gas emissions in determining whether the agreement was prudent and in the public interest.⁴¹⁶ Such precedent may be informative as Pennsylvania begins to determine the scope of its revitalized amendment.

Other Public Trust Sources

Apart from the modern constitutional provision, Pennsylvania also recognizes a common law public trust in submerged lands under navigable waters that are “navigable-in-fact.”⁴¹⁷ These are public trust lands, and cannot be sold but can be licensed for use, such as by public utilities.⁴¹⁸

Pennsylvania law historically also recognized a common law public trust in lands donated or dedicated to municipalities for public use.⁴¹⁹ This doctrine has been modified by statutes that incorporate the “principles” of the common law public trust doctrine, but still operates under these statutes: these require court approval for modifications in purpose or for alienation of such lands, and include substitutions of other lands or application of received funds to support trust purposes.⁴²⁰

Maryland

Maryland has no express constitutional provision recognizing a public trust in its lands, waters, or natural resources.⁴²¹ Maryland common law recognizes a public trust consisting of the traditional fishing and navigation, and state ownership of submerged lands subject to ebb and flow of the tides.⁴²² One Maryland wildlife statute uses “benefit of future generations” language in its findings, but does not create a public trust.⁴²³ In litigation, Maryland public trust law has largely dealt with property claims and management of submerged lands and oyster grounds.

⁴¹⁶ In re Application of Maui Electric Co., 47 ELR 20165, No. SCWC-15-0000640 (Haw. Dec. 14, 2017). The court held that the residents’ constitutionally protected interest in a “clean and healthful environment” (as defined by a statute requiring the public utilities commission to consider the need to reduce the state’s reliance on fossil fuels) was a “protectable property interest,” that the agency decision adversely affected that interest, and that they were entitled to due process consideration of that interest by the public utility commission.

⁴¹⁷ See M. Blumm, et al., *The Public Trust Doctrine in Forty-Five States*, Lewis & Clark Law School Legal Studies Research Paper (2013), at 723.

⁴¹⁸ 25 Pa. Code §§105.1, 105.31; a schedule of annual charges applies to “public service lines” crossing submerged lands. 25 Pa. Code §105.35.

⁴¹⁹ Board of Trustees of Philadelphia Museums v. Trustees of University of Pennsylvania, 96 A. 123 (Pa. 1915).

⁴²⁰ In re Erie Golf course, 992 A. 2d 75 (Pa. 2010) (applying Donated and Dedicated Property Act). In re Petition of Borough of Downingtown, J0125A-L-2016 (Pa. June 20, 2017) (giving effect to Act, requiring court approval for alienation of public park by borough).

⁴²¹ Md. Declaration of Rights, Art. 6, makes legislative and executive bodies “trustees of the public,” but this does not create or expand public trust in waters or natural resources. Kerpelman v. Board of Public Works, 276 A. 2d 56 (Md. 1971).

⁴²² Dept. of Nat. Resources v. Mayor and Council of Ocean City, 332 A.2d 630 (Md. 1975).

⁴²³ Md. Nat. Res. Code Ann. §1-201 (2) “An increased understanding by citizens of the intrinsic value of the fisheries and wildlife of the State will help to ensure the perpetuation of these coveted natural resources for the benefit of future generations.”

Virginia

Virginia's Constitution contains a provision adopted in 1971 (Article XI, Section 1) addressing natural resources and historic sites:

To the end that the people have clean air, pure water, and the use and enjoyment for recreation of adequate public lands, waters, and other natural resources, it shall be the policy of the Commonwealth to conserve, develop, and utilize its natural resources, its public lands, and its historical sites and buildings. Further, it shall be the Commonwealth's policy to protect its atmosphere, lands, and waters from pollution, impairment, or destruction, for the benefit, enjoyment, and general welfare of the people of the Commonwealth.⁴²⁴

However, the Virginia Supreme Court in 1985 ruled that (unlike the Pennsylvania provision) this constitutional provision is not self-executing. The Court found that it confers no specific enforceable rights upon the people, nor does it create any obligations on the Commonwealth or its agencies enforceable by any party.⁴²⁵ The amendment "confines itself to an affirmative declaration of...very broad public policy."⁴²⁶ Thus, the provision can be given effect only by action of the General Assembly, and has no independent utility in challenging decisions by state agencies. This provision of the Virginia Constitution has been given express effect by the General Assembly only in one instance, in the laws governing uses of state-owned submerged lands. The law instructs the Virginia Marine Resources Commission when determining whether to grant or deny permits for use of submerged lands⁴²⁷ to "be guided in its deliberations" by Article XI §1 of the Constitution, as well as by the historical "common law of public trust" adopted by the Commonwealth.⁴²⁸

The latter common law public trust doctrine in Virginia is entirely related to the Commonwealth's ownership as trustee of submerged lands and the use of navigable waters for public navigation, and the management thereof.⁴²⁹ Virginia's common law public trust doctrine does not extend to uplands or the beds of lakes.⁴³⁰

⁴²⁴ Va. Const. Art. XI, §1.

⁴²⁵ *Robb v. Shockey Slip Fdn.*, 324 S.E.2d 674 (Va. 1985).

⁴²⁶ *Id.* at 676.

⁴²⁷ Such permits are for reasonable uses of state-owned bottomlands, and to recover underwater historic property. Va. Code 28.2-1204.

⁴²⁸ Va. Code 28.2-1205.A, citing Va. Code §1-200 ("The common law of England, insofar as it is not repugnant to the principles of the Bill of Rights and Constitution of this Commonwealth, shall continue in full force within the same, and be the rule of decision, except as altered by the General Assembly.")

⁴²⁹ *Taylor v. Commonwealth*, 47 S.E. 875 (Va. 1904)(Commonwealth control of submerged lands); *Commonwealth v. City of Newport News*, 164 S.E. 689 (Va. 1932)(holding that general assembly could prioritize use of navigable waters for sewage disposal). See generally, Michael Blumm, "The Public Trust Doctrine in Forty-five States," Lewis & Clark Law School Legal Studies Research Paper, 2013, revised 2015 ("Virginia has not expressly recognized that the public trust protects non-traditional uses of trust resources"). However, Virginia has relied upon the public trust doctrine to support a claim for damages to waterfowl from an oil spill. *In re Steuart Transp. Co.*, 495 F. Supp. 38 (E.D. Va. 1980) (denying motion for summary judgment).

⁴³⁰ *Bradford v. Nature Conservancy*, 294 S.E. 2d 870, 872 (Va. 1982)(public trust not extended to uplands); *Smith Mountain Lake Yacht Club v. Ramaker*, 261 Va. 240 (2001)(artificial lake bed can be privately owned; statutory construction of Va. Code 28.2-1200)

Other Information

Analysis by the Environmental Law Institute classes 16 U.S. states as having explicit “environmental constitutional protections.”⁴³¹ These are, on the surface, broad declarations, although many vary in their effectiveness. As with Virginia, in some states the effect of the provision has been eviscerated by the courts.⁴³²

Nearly all of the state constitutional environmental protections were adopted in the environmental decade of the 1970s. However, other interest groups have been active in seeking state constitutional amendments to protect certain values, suggesting that there may be ways to target activities to support constitutional change. For example, seventeen states have adopted a constitutional protection for “hunting and fishing,” sixteen of these since 1996.⁴³³ While these are not framed as environmental protections – indeed, most are aimed at ensuring hunters’ rights – their enactment offers some possible interest in terms of drafting, marketing, and coalition building that might inform possible efforts to develop an environmental constitutional strategy for Maryland or Virginia.

Recommendations

- The Pennsylvania Const. Art. 1 §27 should be interpreted as a basis for the following actions:
 - Duty of Commonwealth to inventory and prioritize landscape resources (as the corpus of the trust that must be maintained and preserved)
 - Duty of Commonwealth to achieve net gain/no net loss on all resources;
 - Apply trust responsibility to all 401 water quality certifications, to expand their scope;
 - Duty of Public Utility Commission for trusteeship in transmission line siting evaluations;
 - Duty of Public Utility Commission to develop criteria for pipeline siting within its jurisdiction;
 - Duty of state agencies and commissions to require adequate compensation, offset, and mitigation for all occupation of state-owned natural resource lands and waters.

Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation, Education and Outreach

⁴³¹ See J. McElfish, “State Environmental Law and Programs”, Chapter 7 in Environmental Law Institute, *Law of Environmental Protection* (2013 edition). Alaska Const. art. VIII; Fla. Const. art. II, §7; Ga. Const. art. III, §6 para. 2(a)(1); Hawaii Const. art. XI, §1, §9; Ill. Const. art. XI; La. Const. art. X; Mass. Const. art. XLIX; Mich. Const. art. IV, §52; Mont. Const. art. IX, §1; N.Mex. Const. art. XX; N.Y. Const. art. XIV, §4; N.C. Const. art. XIV, §5; Pa. Const. art. I, §27; R.I. Const. amend. 37; Tex. Const. art. XVI, §59(a); Va. Const. art. XI, §1.

⁴³² ELI considers only state constitutional provisions that declare a right to a clean and healthy environment or declare a constitutional trust relationship. A separate count by Professor May asserts that there are 22 states with constitutional provisions with environmental protection dimensions. James R. May and William Romanowicz, “Environmental Rights in State Constitutions,” in James. R. May (ed.), *Principles of Constitutional Environmental Law* (2011). The two lists do not entirely overlap. May, for example, lists some state provisions that codify doctrines of beneficial use in state water law (but that don’t necessarily require environmental protection), as well as provisions that merely authorize the state to incur indebtedness to acquire parkland or clean up brownfields (Ohio) or that require the state to protect state-owned forests on state lands from destruction (Utah).

⁴³³ Alabama, Alaska, Arkansas, Colorado, Georgia, Idaho, Louisiana, Minnesota, Montana, Nebraska, North Dakota, South Carolina, Tennessee, Vermont, Virginia, Wisconsin, Wyoming.

- Virginia general assembly can use Art. XI, §1 of Va. Constitution to enact legislation protecting other public trust resources, including protecting lands, waters, and other natural resources from impairment, as it has for VMRC resources. *Implementation Method: Legislation*
- Maryland could adopt a constitutional amendment protecting the environment, and Virginia could amend its existing amendment to make it self-executing, both of which could support additional measures for avoidance, minimization, and compensatory mitigation for a wider array of resources. *Implementation Method: Constitutional Amendment*

Coastal Zone – Federal Consistency

The federal Coastal Zone Management Act (CZMA) encourages coastal states to implement state coastal zone management plans (CZMP), through a federal grant program within the Department of Commerce administered by NOAA.⁴³⁴ Each state defines the boundaries of the coastal zone subject to the management program.⁴³⁵

Under the CZMP the state identifies “enforceable policies,” which are “[s]tate polices which are legally binding through constitutional provisions, laws, regulations, land use plans, ordinances, or judicial or administrative decisions, by which a State exerts control over private and public land and water uses and natural resources in the coastal zone.”⁴³⁶ A coastal state may review a federal project or an application for a federal permit or license that may affect the coastal zone to determine whether it is consistent with the state’s enforceable policies. State laws and policies are only recognized for federal consistency if they have been submitted to NOAA for review and approved as part of the CZMP.

A federal agency provides a state with a consistency *determination* for federal agency activities affecting coastal uses or resources. Applicants for federal licenses or permits for activities affecting the coastal zone must *certify* that they comply with approved enforceable policies.⁴³⁷ No federal official or agency may grant a license or permit for the activity unless the state *concurs* with the determination or certification of consistency; or, alternatively, the Secretary of Commerce finds that the plan is consistent with the objectives of the Act or is necessary in the interest of national security.⁴³⁸ State can condition their concurrence in finding federal consistency of a proposed project or application.

While CZM federal consistency provides another avenue for state influence on federal decisions, including FERC decisions, the state’s authority is limited by the terms of its approved enforceable policies. A state cannot readily expand the interpretation of its own laws or permits, but must apply those tools that NOAA has approved and recognized.

The CZMA also provides that each state’s coastal management program shall include, among other elements, “a planning process for energy facilities likely to be located in, or which may significantly affect, the coastal zone, including a process for anticipating the management of the impacts resulting from such facilities.”⁴³⁹

⁴³⁴ 16 U.S.C. §§1455, 1456.

⁴³⁵ 16 U.S.C. §§1455(d)(2)(A).

⁴³⁶ Coastal Zone Management Act Federal Consistency Regulations, 71 Fed. Reg. 788, 789 (Jan. 5, 2006).

⁴³⁷ 16 U.S.C. § 1456(c)(1)(A).

⁴³⁸ 16 U.S.C. § 1456(c)(3)(B)(iii).

⁴³⁹ 16 U.S.C. §1455(d)(2)(H). At the time enacted, the expectation was of offshore oil and gas operations and on-shore oil terminals.

Pennsylvania

Pennsylvania's CZM activities are management by the Coastal Resources Management (CRM) Program within DEP. Pennsylvania has defined two small areas as coastal zone under the CZMA, neither in the Chesapeake watershed. The Lake Erie coastal zone is located entirely within Erie County and includes the shorelines of major tributaries; it extends inland an average of 1.4 miles. The Delaware Estuary Coastal Zone lies within Bucks, Philadelphia, and Delaware counties in southeastern Pennsylvania.

In Pennsylvania, the federal agency provides its consistency determination in writing to the CRM at least 90 days before final approval of the federal agency activity unless both the CRM and the federal agency agree to an alternative notification schedule. Persons that are required to apply for federal licenses or permits listed by the state submit a copy of the application to the CRM along with the necessary data and information. The CRM coordinates its consistency review with appropriate state permitting and resource agencies, and responds in writing to both the applicant and federal agency. Enforceable policies associated with Pennsylvania's CZMP address: Coastal Hazard Areas, defined as bluff recession along Lake Erie and coastal flooding in both coastal zones; Dredging and Spoil Disposal; Fisheries Management; Wetlands; Public Access for Recreation; Historic Sites and Structures; Port Activities; Energy Facilities Siting; Intergovernmental Coordination; Public Involvement; and Ocean Resources.⁴⁴⁰

Maryland

Maryland's Chesapeake and Coastal Service within MDNR administers the CZMP. Most of Maryland is in the defined coastal zone. Maryland's enforceable policies include core policies, policies on water quality and flood hazards, coastal resources (including the critical area, tidal and nontidal wetlands, forests, historical and archeological resources, and living aquatic resources), and policies affecting identified coastal uses.⁴⁴¹

Proponents of new power plants and transmission lines must account for their impact on the physical, biological, aesthetic, and cultural features of the site and adjacent areas and identify mitigation opportunities. (Policy C.2.2 – Electrical Generation and Transmission).⁴⁴² If the activity will alter the

⁴⁴⁰<http://www.dep.pa.gov/Business/Water/Compacts%20and%20Commissions/Coastal%20Resources%20Management%20Program/Pages/About-the-Program.aspx> ; see Form 3010-FM-IWO0007 (2014), <http://www.depgreenport.state.pa.us/elibrary/GetFolder?FolderID=2938>

⁴⁴¹ Maryland's Enforceable Coastal Policies (2011), <http://dnr.maryland.gov/ccs/Documents/mecp.pdf#page=4>. These policies *are being updated*, subject to NOAA review and approval. The policies described are the current approved policies.

⁴⁴² Md. Enforceable Policies, C.2.1. "Power plants shall be sited, constructed, and operated in a manner which minimizes their impacts on tidal wetlands, aquatic resources, terrestrial resources, significant wildlife habitat, public open space, recreational, and natural areas, air and water quality, and the public health, safety, and welfare. DNR/PSC (D2) Md. Code Ann., Nat. Res. §§ 1 - 302, 3 - 303, 3 - 304, 3 - 306; Md. Code Ann., Pub. Util. Cos. § 7 - 208." Md Enforceable Policies C.2. 2. "Proposals for new power plants and transmission lines must account for their impact on the physical, biological, aesthetic, and cultural features of the site and adjacent areas; identify contributions to air and water pollution; recommend mitigation opportunities; and adequately

natural character in, on, or over tidal wetlands; tidal marshes; or tidal waters of Chesapeake Bay and its tributaries, the coastal bays, and the Atlantic Ocean, the proponent must avoid dredging and filling and provide appropriate mitigation for necessary but unavoidable adverse impacts on these areas or their resources. (Policy B.2.1 – Tidal Wetlands) All development must, among other things, avoid and then minimize the alteration or impairment of tidal and non-tidal wetlands, minimize the cutting or clearing of trees and other woody plants, and minimize erosion and keep sediment onsite. (Policy C.9.1, C.9.2 – Development). No activity may adversely affect the integrity and natural character of Assateague Island. (Policy A.1.9 – Core Policies)

Maryland’s enforceable policies include special protections for the Critical Area, which includes all waters of and lands under the Chesapeake Bay and Atlantic Coastal Bays and their tributaries to the head of tide and all wetlands in addition to all land and water areas within 1,000 feet beyond the landward boundaries of wetlands and the heads of tides. The Critical Area is divided into three types: intensely developed areas, limited development areas, and resource conservation areas. The Critical Area also contains a buffer, of at least 100 feet of natural vegetation landward of the mean high water of tidal waters, the bank of a tributary stream, or a tidal wetland.

The state’s enforceable policies prohibit the siting of utility transmission facilities, including electric lines, in the Critical Area except in intensely developed areas, and only after the activity or facility has demonstrated that there will be a net improvement in water quality to the adjacent body of water. (Policy B.1.29 – The Chesapeake and Atlantic Coastal Bays Critical Area) In addition, industrial facilities may only be sited in the portions of areas of intense development that are exempted from buffer designation. (Policy B.1.14 – The Chesapeake and Atlantic Coastal Bays Critical Area) The enforceable policies require activities in intensely developed areas to, among other things, conserve fish, wildlife, and plant habitats; maintain areas of public access to the shoreline; minimize the destruction of forest and woodland vegetation; and cross or affect a stream only if there is no feasible alternative. (Policy B.1.30 – The Chesapeake and Atlantic Coastal Bays Critical Area) If the activity will involve any land disturbance by the movement of earth, the enforceable policies require the proponent to develop a soil erosion and sedimentation control plan. (Policy B.1.26 – The Chesapeake and Atlantic Coastal Bays Critical Area)

Maryland’s enforceable policies require proponents of new power plants and transmission lines to account for their impact on the biological features of the site and adjacent areas and to recommend mitigation opportunities. (Policy C.2.2 – Electrical Generation and Transmission) In addition, operations on the Outer Continental Shelf are to be conducted in a manner that prevents or minimizes damage to the environment, and power plants must be sited, constructed, and operated so as to minimize their impacts on significant wildlife habitat. (Policy A.1.14 – Core Policies, Policy C.2.1 – Electrical Generation and Transmission)

consider recommendations of local government. PSC (D2) Md. Code Ann., Pub. Util. Cos. § 7- 207(e); COMAR 20.79.03.02(B); COMAR 20.79.04.04.”

Maryland's enforceable policies prohibit the damaging of natural oyster bars as well as land and water resources acquired by the state to protect, propagate, or manage fish. (Policy B.6.3, B.6.9 – Living Aquatic Resources) In addition, no more than a 60-foot wide strip surrounding a utility crossing may be cut through submerged aquatic vegetation; no chemical may be used for this purpose; and the timing and method of the activity must minimize the adverse impact on the growth and proliferation of fish and aquatic grasses. (Policy B.6.8 – Living Aquatic Resources) Dredging is prohibited within 500 yards of submerged aquatic vegetation from April 15 through October 15. (Policy C.5.6 – Dredging and Disposal of Dredged Material) Within 500 yards of shellfish areas, mechanical and hydraulic dredging is prohibited from June 1 through September 30 and mechanical dredging is also prohibited from December 16 through March 14. (Policy C.5.7 – Dredging and Disposal of Dredged Material) Dredging also is prohibited from February 15 through June 15 in areas where yellow perch have been documented to spawn and from March 1 through June 15 in areas where other important finfish species have been documented to spawn. (Policy C.5.5 – Dredging and Disposal of Dredged Material).

In the Critical Area, Maryland's enforceable policies prohibit disturbing colonial water bird nesting sites during breeding season and interfering with historic waterfowl concentration and staging areas. (Policy B.1.1, B.1.2 – The Chesapeake and Atlantic Coastal Bays Critical Area) Also in that area, physical alterations to streams may not affect the movement of fish; new structures may not interfere with the movement of spawning fish or larval forms in streams; and utilities may not be constructed in areas designated to protect habitat unless there is no feasible alternative and the utility is located, designed, constructed, and maintained in a manner that minimizes negative impacts to wildlife, aquatic life, and their habitats. (Policy B.1.3, B.1.5, B.1.8 – The Chesapeake and Atlantic Coastal Bays Critical Area)

Maryland's enforceable policies also protect water quality for the maintenance and improvement of fish and aquatic life and wildlife propagation. (Policy C.10.1 – Sewage Treatment). They prohibit the discharge of any pollutant which will accumulate to toxic amounts in aquatic organisms or produce deleterious behavioral effects. (Policy A.2.3 – Water Quality). The policies prohibit the taking of a state listed endangered or threatened species of fish or wildlife without an Incidental Take Permit. (Policy B.6.1 – Living Aquatic Resources).

Maryland's Coastal Facilities Review Act applies within the land and water areas of Maryland's Chesapeake Bay and Atlantic Coast counties, as well as within the three-mile limit in the Atlantic.⁴⁴³ It requires an applicant to obtain a permit from the Maryland Department of the Environment for construction of various oil and gas-related production, refining, transmission or support facilities, and requires preparation of an "economic, fiscal, and environmental impact statement" and review by relevant state and local agencies.⁴⁴⁴

⁴⁴³ Md. Code Ann., Env't §§14-501 – 14-511. The 1975 Act was incorporated into Maryland's Coastal Zone Management program by a routine program change in 2005. The regulations are found at COMAR 26.22.01.00-.11.

⁴⁴⁴ Md. Code Ann., Envir. §14-501(e).

Virginia

When the DEQ receives either a federal consistency determination or federal consistency certification for review, it publishes public notice and it requests responses from the responsible state and regional agencies and others to enable it to respond to the proposed action in order to determine consistency with the state's enforceable policies. The agency responses are used to provide Virginia's findings.⁴⁴⁵ The final DEQ review document always addresses the following three types of environmental requirements and environmental issues, expressed in separate sections of the document:

Enforceable Policies: The DEQ can apply federal consistency only with respect to Virginia's "enforceable policies" that have been approved as such by NOAA – not every Virginia law or regulation. The approved enforceable policies in Virginia are limited to provisions dealing with fisheries management, subaqueous lands, wetlands, dunes, nonpoint source pollution, point source pollution, shoreline sanitation, air pollution, and coastal lands management.

Advisory Policies: The DEQ also regularly provides federal agencies and applicants with information and recommendations concerning the effect of the Commonwealth's "advisory policies." These are part of the coastal program but are not deemed "enforceable policies" by NOAA. These include Virginia policies addressing coastal natural resource areas, coastal natural hazard areas, waterfront development areas, Virginia public beaches, the Virginia Outdoors Plan, parks, natural areas and wildlife management areas, waterfront recreational land acquisition, waterfront recreational facilities, and waterfront historic properties.

Additional Environmental Considerations: The DEQ provides federal agencies and applicants with other information and recommendations that may be relevant to the proposed action. The DEQ frequently provides information on state-listed species and other environmental considerations in the document transmitting its determination or concurrence with consistency, where state agencies have identified an issue or potential concern.

The Additional Environmental Considerations are not listed in a worksheet or information package. Recent DEQ federal consistency review documents show that the following topics are often addressed:

- Solid and hazardous waste management
- Natural heritage resources (including state-listed species and their habitats)
- Wildlife resources and protected species (including state-listed wildlife species)
- Water supply
- Health impacts
- Transportation impacts
- Historical and archeological resources
- Forest resources

⁴⁴⁵ Virginia DEQ, *Federal Consistency Information Package*.

Virginia's threatened and endangered species laws are not among the CZMP's approved enforceable policies. It is the practice of DEQ, relying on information from DGIF and DCR (acting on behalf of DACS), to provide information and recommendations to federal agencies and applicants on actions that should be taken to avoid, minimize, or mitigate harm to Virginia's listed species in the context of the projects or actions undergoing federal consistency review. DGIF's comments are provided to DEQ by its Environmental Services Section. The DCR's Division of Natural Heritage provides DEQ with comments relating to endangered plants and insects as well as relevant habitat information related to both fish & wildlife, and plants and insects.

Virginia's enforceable policies protect high quality state waters and expect restoration of all other state waters to a condition that supports the propagation and growth of all aquatic life. They also limit altering the physical, chemical, or biological properties of state waters and making them detrimental to animal or aquatic life.⁴⁴⁶

The enforceable policies require protection of the public right to the use and enjoyment of the subaqueous lands of the Commonwealth, which includes consideration of other reasonable uses of state waters and state-owned bottomlands as well as consideration of marine and fisheries resources, tidal wetlands, nearby properties, water quality, and submerged aquatic vegetation.⁴⁴⁷ Regarding coastal primary sand dunes, permanent alteration of or construction on them may not impair their natural functions, physically alter their contours, or destroy their vegetation, unless there will be no significant adverse ecological impact or the activity is in the public interest in light of all material factors.⁴⁴⁸

Virginia's enforceable policies prohibit the alteration of wetlands of primary ecological significance in such a manner that unreasonably disturbs the ecological systems in the wetlands.⁴⁴⁹ For a wetland permit to be granted, the activity must clearly need to be in the wetland, it must have overwhelming public and private benefits, and all reasonable mitigation actions must be considered. Compensation is required for the wetlands lost.⁴⁵⁰

In Virginia, local governments designate Chesapeake Bay Preservation Areas, which consist of Resource Protection Areas and Resource Management Areas. The state's enforceable policies require that in all Chesapeake Bay Preservation Areas no more land be disturbed than is necessary to provide for the proposed development, and indigenous vegetation be preserved to the maximum extent practicable. In Resource Protection Areas, new water-dependent facilities are allowed only if they do not conflict with the comprehensive plan, any nonwater-dependent component is located outside of Resource Protection Areas; and access to the facility will be provided with the minimum disturbance necessary.⁴⁵¹

Virginia's enforceable policies require consideration of the effect that an electrical utility facility will have on the environment prior to its development, and the siting of electric lines must reasonably

⁴⁴⁶ Va. Code §§ 62.1-44.2, 62.1-44.5.

⁴⁴⁷ Va. Code § 28.2-1205.

⁴⁴⁸ Va. Code § 28.2-1408.

⁴⁴⁹ Va. Code § 28.2-1308.

⁴⁵⁰ 4 VAC 20-390-40.

⁴⁵¹ 9 VAC10-20-120, 9 VAC 10-20-130.

minimize adverse impact on the scenic assets, historic districts, and environment of the surrounding area.⁴⁵²

Recommendation

- States that adopt implementable policies by statute or regulation, such as statewide mitigation requirements, or specific avoidance and minimization requirements, should submit these to NOAA for incorporation into the state's approved CZMP enforceable policies so that they can apply these to federally authorized activities. *Implementation Method: Legislation, Rulemaking*

⁴⁵² Va. Code § 56-46.1.

Other Approaches

Several additional approaches under review would require enactment of legislation.

Enactment of state “NEPA” with required consideration of alternatives and mitigation

Enactment of a state level NEPA could result in fuller consideration of alternatives, identification of impacts, and mitigation opportunities.⁴⁵³ Fifteen states, Puerto Rico, and the District of Columbia have enacted such legislation.⁴⁵⁴ In general, the advantage these laws offer is the opportunity to coordinate environmental review, to consider environmental impacts that are not limited to specific permits, and to require detailed consideration of *alternatives* to the proposed action as well as *mitigation* for unavoids impacts.

While Virginia has such a statute for state-sponsored construction, it is so narrow that it applies to very few activities, and it has no direct applicability to permitting and approval of energy facilities. However, the Virginia DEQ does review energy facilities subject to SCC CPCN processes or the DEQ Permit-By-Rule for some wind and solar facilities.⁴⁵⁵ The latter requirements do not currently provide for a robust alternatives analysis, focusing rather on permit conditions and mitigation activities. Pennsylvania and Maryland do not have state “little NEPA” laws. Maryland’s PPRP review of PSC-certificated facilities does provide an equivalent review in some respects, although not always a complete review of alternative siting, where not otherwise required.

A few states – particularly California, Hawaii, Massachusetts, New York, Washington, and Montana – have particularly robust state NEPAs applicable to private activities that need government permits. In an early case, subsequently ratified by legislative amendment, the California Supreme Court held that the environmental impact review requirement covers private activities subject to public permitting or approval.⁴⁵⁶ New York’s State Environmental Quality Review Act (SEQRA), enacted in 1975, covers projects or activities directly undertaken by an agency; projects or activities funded or otherwise supported by an agency through grants, contracts, subsidies, loans or other forms of assistance; projects or activities involving issuance of a lease, permit, license, certificate or other entitlement; and “policy,

⁴⁵³ Portions of this section are from J. McElfish “State Law and Programs” in Environmental Law Institute, *Law of Environmental Protection*, Vol. 1, chapter 7 (Fall 2017 update).

⁴⁵⁴ Cal. Pub. Res. Code §§21000 to 21176; Conn. Gen. Stat. Ann. §§22a-1 to 22a-7; D.C. Code §6-981 et seq. (1990 Supp.); Ga. Code §§12-16-1 to 12-16-8; Hawaii Rev. Stat. §§343-1 to 343-8; Ind. Code Ann. §§13-1-10-1 to 13-1-10-8; Md. Nat. Res. Code Ann. §§1-301 to 1-305; Mass. Laws Ann. ch. 30, §61 et seq.; Minn. Stat. Ann. §§116D. to 116D.07; Mont. Code Ann. §§75-1-101 to 75-1-324; N.Y. Evtl. Conserv. Law §8-0101 to 8-0117; N.C. Gen. Stat. §§113A-1 to 113A-10; P.R. Laws Ann. tit. 12, §1121 et seq.; S.D. Codified Laws Ann. §§34A-9-1 to 34A-9-13; Va. Code §10-107 et seq., §10-177 et seq. §10.1-1188; Wash. Rev. Code Ann. §43.21C.010 et seq.; Wis. Stat. Ann. §1.11.

⁴⁵⁵ <http://www.deq.virginia.gov/Programs/EnvironmentallImpactReview/StateEnvironmentallImpactReviews.aspx>. Energy facilities do undergo DEQ review pursuant to Va. Code §56-46.1, and the State Corporation Commission-DEQ MOU (2002).

⁴⁵⁶ *Friends of Mammoth v. Board of Supervisors of Mono County*, 8 Cal. 3d 247, 502 P.2d 1049, 104 Cal. Rptr. 761, 2 Evtl. L. Rep. (Evtl. L. Inst.) 20673 (1972).

regulations and procedure-making."⁴⁵⁷ A number of the state laws have substantive aspects favoring selection of the environmentally preferable alternatives, unless there are compelling reasons to select a different alternative.⁴⁵⁸

Adoption of Express authority for Advance Mitigation

California in 2016 enacted a law providing for authority to create advance mitigation credits based on Regional Conservation Investment Strategies approved by the California Department of Fish and Wildlife.⁴⁵⁹ The approach used is different from a statewide plan or overall prioritization scheme. Instead, it invites public agencies to participate in developing a strategy to meet goals related to conservation and to infrastructure or forest management. It provides a non-regulatory assessment of conservation needs that allows infrastructure agencies to design and implement projects to avoid impacts to wildlife and maximize the conservation value of design and offset investment. In order to receive approval, an RCIS must follow guidance issued by the Department of Fish and Wildlife. The law was set up to begin with 8 pilot areas (determined by application and approval), but state infrastructure agencies can sponsor additional ones without counting against the cap.

It is possible to consider a next generation of mitigation (for more than wetlands and species) based on the concepts worked out in Clean Water Act § 404 compensatory mitigation, and conservation banking and habitat conservation plans under the Endangered Species Act. Such an approach would rely on a state declaration of a mitigation sequence of avoidance, minimization, and compensation, and would rely closely on pre-existing natural heritage data and/or priority setting such as that available in spatially-oriented State Wildlife Action Plans.⁴⁶⁰ Statewide mitigation requirements could also create expectations for project applicants and agency administrators alike.

Natural Resource Damages as Mitigation Model

A Natural Resource Damage Assessment (NRDA)-type approach could be adopted that defines impacts to public resources broadly and requires a detailed assessment of impacts and calculation of lost values and compensation.⁴⁶¹ It would require payment of funds sufficient to support restoration activities, including offsite activities supplying lost ecosystem services and values.

⁴⁵⁷ N.Y. Evtl. Conserv. Law §§8-0101 to 8-0117. Other states have exempted permitting and licensing from EIS requirements. *E.g.*, Ind. Code Ann. §13-1-10-6. Such state NEPAs have other limitations in states such as Virginia (exempts highway projects and does not apply to permitting).

⁴⁵⁸ *Polygon Corp. v. City of Seattle*, 90 Wash. 2d 59, 578 P.2d 1309, 8 Evtl. L. Rep. (Evtl. L. Inst.) 20561 (1978); *SAVE v. Bothell*, 89 Wash. 2d 862, 576 P.2d 401 (1978); *In re City of White Bear Lake*, 311 Minn. 146, 247 N.W.2d 901 (1976); *cf.* *Laurel Hills Homeowners Ass'n v. City Council of Los Angeles*, 83 Cal. App. 3d 515, 147 Cal. Rptr. 842, 8 Evtl. L. Rep. (Evtl. L. Inst.) 20714 (1978) (feasible mitigation required, but not selection of most superior environmental alternative).

⁴⁵⁹ A.B. 2087 (2016 Sess.).

⁴⁶⁰ See generally, The Nature Conservancy and Environmental Law Institute, *The Next Generation of Mitigation: Linking Current and Future Mitigation Programs with State Wildlife Action Plans and Other State and Regional Plans* (2009).

⁴⁶¹ See Environmental Law Institute, *Natural Resource Damages, Mitigation Banking, and the Watershed Approach* (2018), available at <https://www.eli.org/research-report/natural-resource-damages-mitigation-banking-and->

Enacting this to apply this prospectively to lawfully permitted activities may be difficult, particularly in terms of defining what is compensated for and how the state's determination may be reviewed. Would it be entitled to a presumption of validity? What public processes should apply? Among the implementation issues include linking payments to a suite of compensatory mitigation activities. These should in turn be linked to conservation plans.⁴⁶² If this is not done, the advantage of recoveries will be diminished, in that each impact would likely require its own individualized assessment – the factor which causes the greatest delay and expense in the current liability-based NRDA process.⁴⁶³ The other alternative is to assign a calculate number per affected acre of diminished habitat, or dollar value per fish/bird/mammal. While this works reasonably well in the context of repeat oil spills in known areas, it is not well suited to large landscape impacts conducted across multiple watersheds and with varying impacts because of permit conditions.⁴⁶⁴

Legislative requirement of compensatory mitigation for impacts to landscape, water, and habitat resources is the important aspect. In the context of energy projects, an approach might include state legislation establishing an expectation of compensatory mitigation for impacts to state or public trust resources (understood more broadly than the current approach charging fees for occupation of submerged lands). This could support legislatively the kind of mitigation claim made by Virginia for forest fragmentation in the context of the ACP and MVP pipelines.

Recommendations

- States should adopt statewide policies applicable to energy development and other activities for all habitat types identified in the policy. These policies should include: (1) Sequencing – avoid, then minimize, then compensate, and (2) No net loss, net benefit for natural resources, habitats. This action could be implemented by Departmental policies or adoption of regulations (as with climate adaptation policies, or preferences for living shorelines, for example), or by legislation

[watershed-approach](#). Various states also have state NRD programs or act as trustees under federal NRD liability claims under the Oil Pollution Act or CERCLA; most of these do not have short-cut or rule-of-thumb provisions for recovery of damages. Brian D. Israel, *State-by-State Guide to NRD Programs in All 50 States and Puerto Rico* (March 1, 2018), available at <https://www.arnoldporter.com/~media/files/perspectives/publications/2018/03/state-by-state-nrd-guide.pdf>.

⁴⁶²See Environmental Law institute, *Coordination in the Natural Resource Damage Assessment Process: Project Planning and Selection* (2018), available at <https://www.eli.org/research-report/coordination-natural-resource-damage-assessment-process-project-planning-and-selection>

⁴⁶³ Any of the approaches used in federal and state NRDA recoveries typically take many years for assessment, provide for public processes and environmental impact assessment. Environmental Law institute, *Natural Resource Damages, Mitigation Banking, and the Watershed Approach* (2018).

⁴⁶⁴Steve Hampton and Matthew Zafonte, *Calculating Compensatory Restoration in Natural Resource Damage Assessments: Recent Experience in California* (2002) (“In California, this approach has been used in a few instances to estimate compensatory restoration costs for smaller scale bird kills resulting from oil spills. The application has focused on a hypothesized relationship between cost and species scarcity (i.e., compensatory restoration cost per bird killed is higher for rare species than for common species; see Figure 3). Costs per bird are derived from REAs of the lost bird-years due to specific bird kills and the gained bird-years from an identified restoration project. The cost of the REA-scaled project is then divided by the original bird kill, giving us the true cost per bird killed in the incident.”)

which either expressly declares such a policy or directs state environmental and resources agencies to adopt such policies. In Pennsylvania, the state constitution can be interpreted in light of recent court decisions even to require adoption of such a policy by DEP, DCNR, the PUC, the Game Commission, and the Fish & Boat Commission to “prohibit degradation, diminution and depletion of natural resources.” Include prohibitions on using compensatory mitigation to offset or supplant conservation investments from the general fund. *Implementation Method: Administrative Interpretation, Rulemaking, Commission Decision, Legislation*

- A Natural Resource Damage Assessment (NRDA) approach could be adopted legislatively that defines impacts to public resources broadly and requires a detailed assessment of impacts and calculation of lost values and compensation. It would require payment of funds sufficient to support restoration activities, including offsite activities supplying lost ecosystem services and values. However, enacting this to apply this kind of assessment prospectively to permitted activities may be difficult, particularly in defining what is to be compensated for and how the determination may be reviewed, which may make the tool less useful in comparison with targeted compensation requirements. *Implementation Method: Legislation*
- Enactment of a state level NEPA could result in fuller consideration of alternatives, impacts, and mitigation opportunities. It may also lead to consideration of related landscape impacts of projects; but it would not necessarily drive superior outcomes. While Virginia has such a statute, it applies to very few activities. *Implementation Method: Legislation*

Appendix A: Work Group Members

- * Thomas Ford, PA Department of Conservation and Natural Resources
- * Jonathan McKnight, MD Department of Natural Resources
- * David Tancabel, MD Department of Natural Resources
- * Joseph Weber, VA Department of Conservation and Recreation
- * Sharee Williamson, National Trust for Historic Preservation
- * John McCarthy, Piedmont Environmental Council
- * Jennifer Miller Herzog, Land Trust Alliance/Chesapeake Land and Water Initiative
- * John Griffin, Chesapeake Conservation Partnership

The Environmental Law Institute (ELI) makes law work for people, places, and the planet. For nearly four decades, ELI has played a pivotal role in shaping the fields of environmental law, policy, and management, domestically and abroad. Today, ELI is an internationally recognized independent research and education center known for solving problems

and designing fair, creative, and sustainable approaches to implementation.

The Institute delivers timely, insightful, impartial analysis to opinion makers, including government officials, environmental and business leaders, academics, members of the environmental bar, and journalists. ELI serves as a clearinghouse and a town hall, providing common

ground for debate on important environmental issues.

The Institute's board of directors represents a balanced mix of leaders within the environmental profession. Support for ELI comes from individuals, foundations, government, corporations, law firms, and other sources.

Environmental Law Institute

1730 M Street, NW, Suite 700

Washington, DC 20036

Telephone: (202) 939-3800

Fax: (202) 939-3868

www.eli.org

