BEFORE THE NEW YORK BOARD ON ELECTRIC GENERATION SITING AND THE ENVIRONMENT

Case 20-F-0043 – Application of Garnet Energy Center, LLC for a Certificate of Environmental Compatibility and Public Need Pursuant to Article 10 to Construct and Operate a Solar Generating Facility and Energy Storage System in the Town of Conquest, Cayuga County.

REBUTTAL PANEL TESTIMONY ON BEHALF OF GARNET ENERGY CENTER, LLC

Panel Witnesses:

Kris Scornavacca
William Boer
Benjamin Ritter
Pat Green
Daniel Dittman
Keith Cardinali
Brian Stoos
Weston Hillegas
Diane Reilly
Richard Monroe
Judith Bartos
Samatha Moturi
Aaron Williams
Danny Scrivener

Dated: April 12, 2022

Q. Members of the Panel, please state your names, business affiliations, your role in preparing and sponsoring this Rebuttal Testimony, and whether you previously sponsored testimony in this proceeding.

A. My name is Kris Scornavacca. I am employed by NextEra Energy Resources, LLC ("NextEra"). I am Project Director for Development, including the Project Director for Garnet Energy Center, LLC ("Garnet" or the "Applicant"). I helped supervise the preparation of this Rebuttal Testimony. I previously submitted testimony in this proceeding as a member of the Garnet Pre-Filed Direct Panel Testimony that was part of the Article 10 Application.

Q. Will the next Rebuttal Panel Member introduce himself?

A. My name is William Boer. I am employed by NextEra as the Environmental Services Project Manager. I helped support the preparation of all aspects of this Rebuttal Testimony. In particular, I helped supervise the preparation of the Article 10 Application, Supplement, Update, and discovery responses DPS-1, AGM-1, AGM-3, AGM-4, AGM-5, DEC-1, and Town of Conquest ("Town")-1 and I oversee all permitting for the Project. I am very familiar with the NYS Department of Environmental Conservation ("DEC") regulations, 6 New York Codes, Rules and Regulations ("NYCRR") Part 663, and the New York State Board on Electric Generation Siting and the Environment's ("Siting Board") regulations, 16 NYCRR Part 1001.22, as they address permitting for wetlands under Article 10. I previously submitted testimony in this proceeding as a member of the Garnet Pre-Filed Direct Panel Testimony that was part of the Article 10 Application. I have attached my updated resume, showing the wetland delineation experience that I have had in my career.

Q. Will the next member of the Panel introduce himself?

A. My name is Benjamin Ritter. My position at NextEra is contracted through Specialist Staffing Services INC. as Solar Project Engineer. I helped support the preparation of the engineering and construction aspects of this Rebuttal Testimony. I am also adopting the direct testimony of Daniel Marieni.

Q. Please state your credentials.

A. I have been employed at NextEra since August of 2021 and my responsibilities include overseeing engineering activities, as well as supporting the preparation of applications and environmental studies submitted under Article 10 of the Public Service Law ("PSL") and the State Environmental Quality Review Act for utility scale solar energy projects in New York. I have nearly 10 years of experience working in an engineering capacity on renewable energy projects and products, with a focus in solar photovoltaic ("PV") racking and installation. I have a Bachelor of Science degree from Western New England University in Mechanical Engineering, with a concentration in Green Engineering. I am certified by the National Council of Examiners for Engineering and Surveying as an Engineer in Training and have been certified by the North American Board of Certified Energy Practitioners as a PV Installation Professional, as well as in PV Technical Sales. My CV is attached hereto.

Q. Will the next member of the Panel introduce himself?

A. My name is Pat Green. I am co-sponsoring the wetland and avian analyses and recommendations in this Rebuttal Testimony. I have also reviewed Exhibit 22, the Application Supplement, the Application Update, and the relevant discovery responses and I am familiar with the information contained therein.

Q. Please state your credentials.

A. My position at NextEra is an Environmental Services Project Manager. I have been employed by NextEra for approximately four months. As an Environmental Services Project Manager, I am responsible for preparation of applications and supporting environmental studies submitted under Article 10 or Executive Law Section 94-c. Prior to working at NextEra, I worked as Senior Project Manager and Ecological Services Manager at Tetra Tech for 11 years, where I was responsible for providing project management on renewable energy projects located throughout New York and other neighboring Midwest and Atlantic Coastal states, including extensive experience on Article 10 projects. Furthermore, I have a strong background in wetland delineation and endangered species surveys. I have attended a 38-hour Wetland Delineation Training in 2011, received training on Erosion and Sediment Control from DEC, coordinated several teams for wetland delineations and threatened and endangered species surveys, and worked as a wetland delineator. I have prepared analyses on both these topics for two Article 10 proceedings. I have a Bachelor of Technology in Renewable Resources from Morrisville State College. My CV is attached hereto.

Q. Will the next member of the panel introduce himself?

A. My name is Daniel Dittman. I helped support the preparation of the construction and engineering aspects of this Rebuttal Testimony as well as discovery response AGM-2. I am also adopting the direct testimony of Amanda Klaristenfeld.

Q. Please state your credentials.

A. My position at NextEra is Early Stage Solar Engineering & Construction Project Manager. I lead the engineering and construction efforts of the renewable energy

projects in New York State prior to handing over to the execution team. I have been employed at NextEra for approximately 1.5 years and my responsibilities include managing of all engineering design packages submitted under PSL Article 10 for utility-scale solar energy ("USSE") projects in New York. Prior to joining NextEra, I worked as a project manager for an aerospace company for 6 years as an outside consultant, and prior to that I spent 7 years as a field project engineer for a non-destructive testing company specializing in fossil fuel power plants. I have a Bachelor of Science degree from the University of Rhode Island in Mechanical Engineering. My CV is attached hereto.

Q. Will the next member of the panel introduce himself?

A. My name is Keith Cardinali, I am adopting the testimony of the Garnet Pre-Filed Direct Testimony Panel member Hayley Effler. I also helped support the development of the Garnet Energy Center Update to the Application, discovery responses AGM-1, AGM-4, AGM-5, DEC-1, and Town-1 and the preparation of the wetland calculations in this Rebuttal Testimony.

Q. Please state your credentials.

A. I have worked as a Project Manager at TRC, Companies Inc. ("TRC") for 6 months. My current role includes management of multiple renewable energy development projects in New York State. My experience also includes over 8 years of construction management in environmental and civil construction and remediation. I hold a Bachelor of Science degree in Biology from the State University of New York (SUNY) at Oswego and a Master of Professional Studies in Ecology from the SUNY College of Environmental Science and Forestry. My CV is attached hereto.

Q. Will the next member of the panel introduce himself?

A. My name is Brian Stoos. I am adopting the testimony of the Garnet Pre-Filed Direct Testimony Panel member Kevin Bliss. I helped support preparation of the wetland aspects of this Rebuttal Testimony.

Q. Please state your credentials.

A. My position at TRC is Environmental Operations Manager. I manage renewable energy projects and lead our wetland field crews. I provide oversight of TRC's wetland studies in New York, as well as either directly manage or otherwise assist with a wide breadth of TRC projects across New York and had approximately 13 years of experience prior to starting my current position. Prior to working at TRC, I worked as a senior biologist for over 11 years in many capacities for another environmental consultant in the Buffalo area. I have a Bachelor of Science Degree in Chemical Engineering from Bucknell University. I earned my Professional Wetland Scientist ("PWS") certification in 2018. My CV is attached hereto.

Q. Will the next member of the Panel introduce himself?

A. My name is Weston Hillegas. I helped support preparation of the wetland aspects of this Rebuttal Testimony.

Q. Please state your credentials.

A. I am employed by TRC as a wetland scientist and staff biologist. I've worked on many renewable projects throughout the state of New York and had approximately 10 years of experience prior to my position at TRC. I am also adopting the direct testimony of Garnet Pre-Filed Direct Panel member Kevin Bliss. I have a Bachelor of Science Degree

in Wildlife and Fisheries Science from The Pennsylvania State University. My CV is attached hereto.

Q. Will the next member of the Panel introduce herself?

A. My name is Diane Reilly. I am employed by TRC as an Economist and Technical Manager. I helped support the preparation of the socioeconomic and Environmental Justice analysis portions of this Rebuttal Testimony and discovery response RPNCBC-1. I previously submitted testimony in this proceeding as a member of the Garnet Pre-Filed Direct Panel Testimony that was part of the Article 10 Application.

Q. Will the next member of the Panel introduce himself?

A. My name is Richard Monroe. I am adopting the testimony of Garnet Pre-Filed Direct Panel member Kirsten Barnstead, and I am sponsoring the avian species analysis and recommendations in this Rebuttal Testimony.

Q. Please state your credentials.

A. My position at TRC is an Avian Specialist. I have been employed by TRC for approximately 2 years. As an Avian Specialist, I provide oversight of TRC's avian studies in New York, coordinate and conduct field studies which primarily consist of grassland breeding bird and wintering grassland raptor surveys across New York. Prior to working at TRC, I worked as a wildlife technician for the DEC where I primarily conducted grassland breeding bird surveys and breeding marsh bird surveys. I have a Bachelor of Science Degree in Fisheries and Wildlife Science from Paul Smith's College. I earned my Associate Wildlife Biologist certification from The Wildlife Society in 2021. My CV is attached hereto.

Q. Will the next member of the Panel introduce herself?

A. My name is Judith Bartos. I am employed by TRC as a Senior GIS Analyst and Senior Scientist. I helped support the preparation of the visual analysis portions of this Rebuttal Testimony and discovery response Town-1. I previously submitted testimony in this proceeding as a member of the Garnet Pre-Filed Direct Panel Testimony that was part of the Article 10 Application.

Q. Will the next member of the Panel introduce herself?

A. My name is Samatha Moturi, I am employed by TRC as a GIS Analyst III. I helped support the preparation of the GIS calculations for the wetlands section of this Rebuttal Testimony and discovery response DEC-1.

Q. Please state your credentials.

A. My position at TRC is a GIS Analyst III. I have been employed by TRC for approximately 3 and one-half years. As a GIS Analyst, I provide GIS support for Article 10 permitting projects. Prior to working at TRC, I worked for 10 years as a GIS technician/ Senior GIS Analyst for a consulting company in California where I primarily provided GIS support to permitting projects. I have a Master of Science Degree in GIS & Urban Planning from Eastern Michigan University. My CV is attached hereto.

Q. Will the next member of the Panel introduce himself?

A. My name is Aaron Williams. I am co-sponsoring the glare analysis and recommendations in this Rebuttal Testimony.

Q. Please state your credentials.

A. I am employed by Pager Power, a consulting company retained by NextEra to conduct the Glint and Glare Analysis that was submitted as Appendix 24-2 of the Application. I have undertaken glint and glare assessments for solar developments in the context of

safety and amenity. I have a Bachelor of Science Degree in Mathematics. My CV is attached hereto.

Q. Will the next member of the Panel introduce himself?

A. My name is Danny Scrivener. I am co-sponsoring the glare analysis and recommendations in this Rebuttal Testimony.

Q. Please state your credentials.

A. I am employed by Pager Power. I have experience securing permits for solar farms by designing an optimal layout to eliminate glare and have undertaken over 150 individual glint and glare assessments. I have a Bachelor of Science Degree in Environmental Science. My CV is attached hereto.

Q. What is the purpose of this Rebuttal Testimony?

A. This Rebuttal Testimony addresses the direct testimony of Jean Foley and Matthew Walter ("DEC staff Wetlands Testimony"), filed on behalf of the DEC staff; the direct testimony of Michael Saviola on behalf of the NYS Department of Agriculture and Markets ("AGM staff") and the direct testimony of the witnesses presented by the Rural Preservation and Net Conservation Benefit Coalition ("RPNCBC"): the Avian Panel; Dr. Kent Gardner; Peggy Lillie, Brenda Bramble, and Eugene Moretti.

DEC Staff Wetlands Testimony

Q. Please generally describe the Project's proposed impacts to wetlands.

A. As originally proposed in the Article 10 Application, Project Components were sited in approximately 43.85 acres of DEC-mapped wetlands, 45.21 acres in DEC-mapped wetland adjacent areas, and 103.8 acres in non-mapped delineated wetlands (delineated wetlands not mapped by DEC) (*see* Application Exhibit ("App. Ex.") 22 at 87, 90). In

January 2022, the Applicant filed an Update to the Application with the specific intent of updating the Project Layout to avoid and minimize proposed impacts to state-mapped and non-mapped wetlands even further. The updated Project Layout significantly reduced the proposed total impacts to state-mapped wetlands by nearly 99% (43.85 acres reduced to 0.5 acres) and the proposed total impacts to state-mapped wetland adjacent areas by 77% (45.21 acres reduced to 10.47 acres) (App. Ex. 22 Update at 90). Furthermore, the proposed non-mapped delineated wetland impacts were reduced by 65% (103.8 acres reduced to 35.74 acres) (*id*. at 87). Most of the proposed impacts are either temporary, or in the form of conversion, which typically constitutes conversion of land cover through clearing of woody vegetation to eliminate the potential of shading effects caused by vegetation adjacent to Project panels (*id*. at 79–80). The distinction between the types of impacts will be explained further in this testimony as it bears upon the Siting Board's determination of the Project's compliance with the balancing criteria in PSL § 168(3)(c) and the weighing standards in 6 NYCRR Part 663.

Q. What does the DEC staff, in general, recommend in this proceeding with respect to wetlands?

A. The DEC staff witnesses recommend that delineated wetlands not mapped by the DEC in the Project Area be treated as if they had gone through the public notice, comment and hearing processes required by DEC regulations to amend the official DEC wetland maps (*see* DEC staff Wetlands Testimony, p. 5, l. 23–p. 6, l. 21). Proceeding upon that unlawful assumption, they argue that the non-mapped wetlands be considered "mapped" and regulated as such under 6 NYCRR Part 663. When DEC staff applies these regulations, they not only misstate how Part 663 should be applied but misapply them by

failing to reasonably interpret "wetland compatibility criteria" and omitting a critical balancing test—the weighing standards in 6 NYCRR Part 663.5—that is very similar to the balancing required by Article 10 to make the statutory determination required by PSL § 168(3). In addition, they are applying an antiquated definition of an "industrial" facility to a solar facility when they assess whether installing Project Components in so-called "regulated" wetlands would be incompatible with wetland functions (*see* DEC staff Wetlands Testimony, p. 9, l. 20–p. 10, l. 4).

Q. What recommendations flow from this DEC staff testimony?

A. By subjecting the non-mapped wetlands to Part 663.5, but selectively not applying the weighing standards, discussed later in this testimony, the DEC staff opines that new wetlands are required to be created and/or existing wetlands are to be restored to compensate for the alleged adverse impacts to the non-mapped wetlands (*see* DEC staff Wetlands Testimony, p. 17, ll. 8–17). Then, to calculate the amount of new mitigation acreage, the DEC staff applies the Office of Renewable Energy Siting ("ORES") regulations enacted under Section 94-c, despite the fact that those regulations are not applicable to an Article 10 proceeding (*see* DEC staff Wetlands Testimony, p. 17, l. 18–p. 18, l. 19). The Applicant designed its Project under Article 10—before Section 94-c was enacted, and as we explain below, it would be highly prejudicial to Garnet to apply those regulations to an Article 10 project. Imagine the outcry from developers if Article 10 regulations were applied to a generating facility undergoing review pursuant to the State Environmental Quality Review Act. As explained further below, based upon its faulty Section 94-c analysis, DEC staff would require mitigation in the form of creating new wetlands for 11.7 acres of mapped and non-mapped wetlands and 73.76 acres of

associated adjacent areas, resulting in a mitigation acreage of 51.36 acres costing approximately $5,136,000 (*see* Exs. GRP-1, GRP-2). In contrast, we believe that the Siting Board can determine that the restoration of wetlands onsite temporarily impacted by the Project, together with wetlands that are converted but still provide valuable functions and values, are relatively minor and inconsequential impacts that are outweighed by the positive impacts of the Project, including the Project's predicted displacement of approximately 71,680 tons of carbon emissions annually for the next 30 years (*see* App. Ex. 8 at 2), consistent with the balancing required under PSL 168(3)(c), and the DEC Part 663.5 weighing standards. At worst, if additional mitigation beyond the wetland restoration embodied in Certificate Conditions 121 and 122; Site Engineering and Environmental Plan ("SEEP") Guide § B.17; and Clean Water Act ("CWA") Section 404 mitigation expected to be required by the U.S. Army Corps. of Engineers ("USACE"), is required by the Siting Board, it should only be required for the 3.28 acres of permanent impacts to mapped wetlands and their adjacent areas, not the 85.46 acres argued for by DEC staff (*see* DEC staff Wetlands Testimony, p. 16, ll. 16–19).

Below we will address the DEC staff's faulty and results-driven analysis and show why the Part 663 regulation it asks the Siting Board to exert over non-mapped wetlands is unprecedented, prejudicial, and groundless. By adopting this ad hoc, unlawful approach to wetland regulation, developers will not be able to rely upon existing law and regulations for fear that the DEC staff will go beyond it. If the Siting Board adopts the DEC staff position, its decision could have a chilling effect on renewables development in New York State, discouraging the development of large solar projects in

the State, contrary to the statutory mandates in the Climate Leadership and Community Protection Act ("CLCPA").[1]

There are two paths forward to harmonize DEC staff's position with the Applicant's. On the advice of counsel, if the non-mapped wetlands are not regulated under Parts 663 and 664, they are still subject to the balancing criteria the Siting Board must apply pursuant to PSL §§ 168(3)–(4). Further, any jurisdictional activities in the non-mapped wetlands will be regulated under CWA Section 404 by USACE, and the Siting Board can apply the traditional minimization measures through its CWA Section 401 certification as it routinely does. We explain in detail below that the application of those Article 10 considerations overwhelmingly supports the restoration of the Project's non-mapped wetlands proposed in Certificate Conditions 121 and 122 (and agreed to by the Department of Public Service Staff ("DPS staff") without requiring mitigation in the form of wetland creation (*see* Garnet – Final Settlement Package at 119).

In the alternative, we explain that, assuming Part 663 applies to the unavoidable impacts to the non-mapped wetlands, as DEC staff argues, the Project still satisfies the weighing standards in Part 663 in that the State's statutory climate change targets and policies outweigh these unavoidable impacts. As noted above, in addition to the aforementioned Certificate Condition restoration measures, and in accordance with a Preliminary Jurisdictional Determination ("PJD"), and subsequently an Approved

[1] Climate Leadership and Community Protection Act, 2019 N.Y. Sess. Laws Ch. 106 (McKinney) ("CLCPA") § 7(c) (providing that "[i]n considering and issuing permits, licenses, and other administrative approvals and decisions, including but not limited to the execution of grants, loans, and contracts, all state agencies, offices, authorities, and divisions shall consider whether such decisions are inconsistent with or will interfere with the attainment of the statewide greenhouse gas emissions limits established in article 75 of the environmental conservation law"). In *Number Three Wind LLC*, the Siting Board determined that the CLCPA applies to the consideration of Article 10 Certificate applications. *See* Case 16-F-0328, *Number Three Wind LLC*, Order on Rehearing (Feb. 13, 2020), at 14.

Jurisdictional Determination ("AJD"), dated November 22, 2021, and December 14, 2021, respectively, issued by the USACE (*see* App. Ex. 22 Update at 63–64), USACE will exert jurisdiction over non-mapped wetlands and the Applicant will obtain a CWA Section 404 permit and Section 401 certification regulating impacts to these non-mapped wetlands. As a condition of the permit for impacts to these non-mapped wetlands, we expect the USACE to require mitigation and we are ready to comply with USACE requirements.

Q. Please address the DEC staff witnesses' testimony regarding the applicability of Article 24 of the Environmental Conservation Law ("ECL") ("Article 24") to non-mapped wetlands and their adjacent areas.

A. The DEC staff witnesses propose to define "Article 24-regulated wetlands" as "wetlands that are included on the Department's freshwater wetlands maps, **including delineated, contiguous, wetland expansions that extend beyond the mapped wetland boundaries**" (DEC staff Wetlands Testimony, p. 5, l. 23–p. 6, l. 3 [emphasis added]). They also propose to define "Article 24-jurisdictional wetlands" as "delineated wetlands that meet State criteria for jurisdiction but have not yet been added to the Department's freshwater wetlands maps through a wetland map amendment" (DEC staff Wetlands Testimony, p. 6, ll. 5–6). The DEC staff witnesses further define "protected wetlands" as "a combination of Article 24-regulated, Article 24-jurisdictional, and other waters of the United States regulated pursuant to Section 401 of the CWA, including federally regulated wetlands that are jurisdictional under Section 404 of the CWA" (DEC staff Wetlands Testimony, p. 6, ll. 8–10). DEC staff argues that, under 6 NYCRR Parts 663 and 664, the Applicant must demonstrate that any proposed activity within "protected"

wetlands—*i.e.*, "regulated", "jurisdictional", and federal wetlands, either mapped or non-mapped—will comply with the Part 663–664 regulations (DEC staff Wetlands Testimony, p. 6, ll. 19–21). Accordingly, DEC staff considers non-mapped wetlands in the Project Area subject to Article 24 and Part 663 regulation.

Q. Does Garnet agree with the DEC staff witnesses' proposed definitions and interpretation that Article 24 and Part 663 applies to non-mapped wetlands?

A. No. The definitions used by the DEC staff witnesses are not in the statute or regulations. In fact, the proposed definitions do not appear to be consistently used by these witnesses even between Article 10 proceedings, as the word "contiguous" was not included in the definition of "regulated wetlands" provided by the DEC staff witnesses in the *Trelina* proceeding. By its terms, Article 24 only applies to mapped wetlands. The ECL expressly requires a public notice/comment/hearing and mapping process to enable wetlands to be regulated pursuant to the requirements of ECL § 24-0301(5)–(6) and 6 NYCRR Parts 663–664.

For Article 24 to regulate areas outside the mapped areas as displayed on the final map, the mapping process needs both public notice and requires a determination from the DEC Commissioner, and not DEC staff, that either previously mapped wetlands should be adjusted for all but very minor changes in the field or that the wetland maps should be amended, for example, to revise boundaries or map new wetlands. There is no provision in the regulations allowing DEC staff to regulate non-mapped wetlands, or to extend the mapped wetland's adjacent area, beyond the 100 feet already established without the DEC Commissioner complying with the map amendment/adjustment regulations.

Although there is regulation that describes interim permits and standards for

wetlands intended to be regulated under Article 24, NYCRR Part 662 is expressly limited to areas where a final freshwater wetlands map has not yet been filed—the final freshwater map in the vicinity of the Project was filed in April 1985,[2] and no amendments are currently underway or have been filed since that date in Cayuga County.[3]

Q. Please explain the wetland mapping process and the applicable definitions provided in 6 NYCRR Parts 663 and 664.

A. As stated in 6 NYCRR § 664.3(a), it is the public policy of the State, "to preserve, protect and conserve freshwater wetlands and the benefits derived therefrom, to prevent the despoliation and destruction of wetlands, and to regulate use and development of wetlands to secure the natural benefits of those wetlands, **consistent with the general welfare and beneficial economic, social and agricultural development of the State**" (emphasis added). The purpose of Part 664 is to implement that policy "by clarifying certain aspects of wetland mapping and **delineation of jurisdiction**, and by creating a system for classifying wetlands" (6 NYCRR § 664.3(a) [emphasis added]).

When DEC developed the initial freshwater wetlands map, it was required to hold a public hearing in the area of the potential wetland, give notice of the hearing to affected landowners and local government officials, make a copy of the map available for public inspection, and publish the notice in local papers (*see* ECL § 24-0301(4)). The

[2] *See NYS Regulatory Freshwater Wetlands For Counties Outside the Adirondack Park*, DEC (Nov. 8, 2013), *available at* https://www.dec.ny.gov/docs/wildlife_pdf/wetstats4.pdf.

[3] *See NYS Department of Environmental Conservation Recently Amended Or Filed Freshwater Wetlands Maps*, DEC (Aug. 6, 2014), *available at* https://www.dec.ny.gov/docs/wildlife_pdf/wtamddt5.pdf; *Map Amendments: Amendments Underway*, DEC (last accessed Apr. 7, 2022), *available at* https://www.dec.ny.gov/lands/80921.html.

Commissioner of the DEC was then tasked to issue an order officially adopting the maps and to distribute notices of such orders (*see* ECL § 24-0301(5)).

Wetland maps may be amended by the DEC Commissioner pursuant to 6 NYCRR § 664.7(a)(2), but only after the DEC adheres to the same notice, posting, publication, and hearing requirements. 6 NYCRR § 664.7(a)(2)(ii) also allows the DEC Commissioner to make minor adjustments to a map—such as adjusting an existing boundary in a manner that may be considered minor; but again, there must be notice to the landowners of record and the local government at least 30 days prior to the issuance of an order adjusting the map.

Several definitions in Part 663 support Garnet's position that DEC staff cannot alter the official wetland maps in the field or in an Article 10 proceeding without complying with the DEC Department regulations. The definition of "Map" in 6 NYCRR § 663.2(t), states in relevant part the "**official freshwater wetlands** map promulgated by the commissioner pursuant to section 24–0301(5) of the act, or **such a map that has been amended or adjusted** pursuant to the act and Part 664 of this Title, on which are indicated the approximate location of the actual boundaries of regulated wetlands" (emphasis added). The DEC Commissioner has not implemented any of these statutory or regulatory procedures to amend or adjust the mapped wetlands at the Project to include the non-mapped wetlands cited in the DEC staff testimony. Equally, or perhaps even more important, is the Freshwater Wetlands Act itself, at Section 24-0107, which states in part, "'Freshwater wetlands' means lands and waters of the state as shown on the freshwater wetlands **map**" (emphasis added). These regulations address how and where to locate wetlands on the map so they may be regulated.

Furthermore, 6 NYCRR § 663.2(h) provides the definition of the term "Classification", meaning the designation placed upon a "**mapped** wetland by the department." It states that: "[u]pon the adoption of an **official map**, these classifications are the basis for freshwater **regulation** regardless of the governmental entity asserting jurisdiction pursuant to the act" (emphasis added). Therefore, only mapped wetlands may be regulated under the DEC regulations, regardless of whether DEC or a municipality is reviewing a permit application in a non-Article 10 matter, or if the Siting Board is implementing Parts 663 and 664 for an Article 10 project.

On advice of counsel, the DEC staff witnesses' arguments to assert jurisdiction over non-mapped wetlands is also contrary to the DEC's own precedent. In at least one DEC Commissioner decision and order, it was held that where the official maps have been duly promulgated, a landowner is entitled to reasonably rely on the map and that if a particular property or site of a proposed activity is outside a mapped wetland boundary, the landowner is not afforded reasonable notice that it may be a regulated wetland and it may not be regulated without following the required amendment procedure.[4] The DEC Commissioner also clarified that the field delineation procedure is designed to precisely define wetland boundaries, but that it may not be used to extend or alter the officially mapped wetland boundaries (*see Spectrum Associates L.P.* at ¶¶ 4–5). Extending the official boundaries may only be done according to the authorized procedures for map amendments and adjustments in 6 NYCRR § 664.7(a)(2). Furthermore, in another DEC order and decision, it was held that it is the existing regulatory standards, not unwritten

[4] *See also In the Matter of the Alleged Violation of the Envt'l Conserv. Law ("ECL") § 24-0701 by Spectrum Associates, L.P.,* 1990 WL 182454 (N.Y. Dept. Env't Conserv. 1990), ¶ 8.

rules and definitions, that determine the regulatory status of a wetland (*see In re David Watts*, 2005 WL 815534 (N.Y. Dept. Env't Conserv. 2005), at *9).

Q. Please describe the FY Executive Budget Legislation recently adopted by the New York State Legislature to amend Article 24.

A. ECL § 24-0107 currently provides that "'[f]reshwater wetlands' means lands and waters of the state **as shown on the freshwater wetlands map**" (ECL § 24-0107 [emphasis added]). Effective January 1, 2025, Part QQ of the Transportation, Economic Development and Environmental Conservation Article VII Legislation ("TED Part QQ") amends the definition of "freshwater wetlands" in Article 24 to remove the term "as shown on the freshwater wetlands map" and removes the notice and hearing requirements for amending the maps.[5] TED Part QQ also adds to the definition of "freshwater wetlands map" that the maps "depict the approximate location of wetlands and are not necessarily determinative as to whether a permit is required pursuant to section 24-0701 of this article" (TED Part QQ § 2). The legislation supports Garnet's position that the currently effective wetland regulatory regime does not permit the DEC to regulate non-mapped wetlands. If the DEC staff witnesses' proposed interpretation of Article 24 of the ECL in this proceeding is correct, then these amendments would not have been necessary.

Memoranda of support for TED Part QQ further support the Applicant's position that non-mapped wetlands are not currently regulated under Article 24. The TED Part QQ Memorandum of Support explains that the amendments would make the maps

[5] *See* S. 8008-C, 2021-2022 Legis. Sess. (N.Y. 2022) Part QQ, §§ 2–3, *available at* https://legislation.nysenate.gov/pdf/bills/2021/s8008c (attached as Ex. GRP-3).

"educational rather than jurisdictional."[6] The National Audubon Society issued a statement that the wetlands reforms in the budget legislation "will allow the New York State Department of Environmental Conservation to protect an additional one million acres of freshwater wetlands by removing the requirement that all jurisdictional wetlands be delineated on official maps held by the Department."[7] Statements reinforcing the conclusion that the legislation expands DEC jurisdiction to non-mapped wetlands were also made, *inter alia*, by The Nature Conservancy ("TNC"),[8] and the New York League of Conservation Voters.[9]

Q. Has the DEC commenced the regulatory mapping process for the non-mapped wetlands within the Project Area?

A. Not to our knowledge. The DEC's website explains that an amendment is officially started when notice of the wetland map amendments is provided to landowners, the public, and local officials."[10] As an option holder of parcels within the Project Area, the Applicant would be required to receive notice and it has not.

Q. Would a future DEC amendment to the official wetland maps affect the Project?

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[6] *FY 2023 New York State Executive Budget: Transportation, Economic Development and Environmental Conservation Article VII Legislation: Memorandum in Support*, New York State Division of the Budget (last accessed Mar. 29, 2022), *available at* https://www.budget.ny.gov/pubs/archive/fy23/ex/artvii/ted-memo.pdf (attached as Ex. GRP-4).

[7] National Audubon Society, *New York's 2022-2023 State Budget Wins for Birds* (last accessed Mar. 25, 2022), *available at* https://ny.audubon.org/news/new-yorks-2022-23-state-budget-wins-birds#:~:text=The%20Executive%20Budget%20includes%20reforms,jurisdictional%20wetlands%20be%20delineated%20on (attached as Ex. GRP-5).

[8] The Nature Conservancy, *The Nature Conservancy Commends Governor Hochul for Historic Funding and Policy Proposals in FY 23 Executive Budget Proposal* (Jan. 19, 2022), *available at* https://www.nature.org/en-us/newsroom/ny-2022-hochul-budget-proposal/ attached as Ex. GRP-6).

[9] J. Dickinson-Frevola, *NYLCV Advocates for Expanded Protection of New York Wetlands*, New York League of Conservation Voters (Feb. 4, 2022), *available at* https://nylcv.org/news/nylcv-advocates-for-expanded-protection-of-new-york-wetlands/ attached as Ex. GRP-7).

[10] *Freshwater Wetlands Mapping*, DEC, *available at* https://www.dec.ny.gov/lands/5124.html (emphasis added).

A. No, the DEC staff testimony does not mention that the DEC regulations allow ongoing projects to be grandfathered from a new map amendment process. On advice of counsel, DEC regulations prescribing the map amendment process provide that "no activity which has already been initiated at the time of the announcement [of a proposed amendment], within an area that is proposed as an addition to the map, will be subject to such regulation" (6 NYCRR § 664.7(2)(i)).

Garnet began the Project's Article 10 certification process on January 28, 2020, by submitting a Public Involvement Program ("PIP") Plan pursuant to 16 NYCRR § 1000.4(d). The Project Area proposed in the PIP Plan overlaps the currently proposed Project Area, including the non-mapped wetlands at issue. In addition, a Preliminary Scoping Statement was submitted on September 17, 2020, pursuant to 16 NYCRR § 1000.5(c), which contains a figure depicting both DEC-mapped wetlands and non-mapped wetlands within the Project Area (*see* Preliminary Scoping Statement, fig.12).

Site visits to verify the Applicant's field wetland delineation were conducted by the DEC staff and the Applicant's consultant on May 11, October 15, and November 9, 2021 (App. Ex. 22 Update at 64). At the time, DEC staff only requested Garnet to modify one delineated wetland boundary associated with a DEC-mapped wetland (*id*.).

Q. Throughout the Applicant's Article 10 process, which commenced in January 2010, did DEC staff suggest the jurisdictional maps for the Project Area were erroneous or needed to be amended or adjusted pursuant to act and Part 664?

A. No. The Applicant first learned of DEC staff's argument to claim jurisdiction over non-mapped wetlands through DEC staff's testimony, filed on March 10, 2022.

Q. What Project expenditures and activities have been conducted in the Project Area to date?

A. Since development of the Project commenced in 2019, the Applicant has committed many millions of dollars. Garnet has, *inter alia*, conducted extensive, on-site land surveys, visual, glare, noise, cultural, wetlands, wildlife, vegetation, geotechnical, and interconnection studies; acquired land; developed a Project layout avoiding environmental impacts to the maximum extent practicable; constructed a meteorological station; and spent thousands of hours developing numerous plans. On advice of counsel, the Project would be grandfathered from DEC regulation if the official maps were amended pursuant to 6 NYCRR § 664.7(a)(2)(i).

Q. Does the Siting Board have authority to adequately protect wetlands not regulated under Article 24?

A. Yes. The Applicant is not attempting to circumvent regulation of the non-mapped wetlands. As noted above, and in accordance with the PJD and AJD that have been issued for the Project, these wetlands will be subject to USACE regulation for any proposed jurisdictional activities. In addition, on advice of counsel, the Siting Board must make the determination that impacts to the non-mapped wetlands have been avoided or minimized to the maximum extent practicable (*see* PSL § 168(3)(c)). Under PSL § 168(4), in making this determination of practicability, the Siting Board must consider, amongst other factors, "the nature and economics of reasonable alternatives" and "consistency of the . . . facility with the energy policies and long range planning objectives and strategies in the . . . state energy plan." Thus, as noted above, this balancing test is very similar to the weighing standards in Part 663.5.

The Siting Board will be required to issue a CWA § 401 Water Quality Certification ("WQC") as part of the USACE approval process. In the *Atlantic Wind*

Article 10 proceeding, the Siting Board stated that the "State water quality standards apply not only to State-regulated bodies but to federally regulated waterbodies as well" and "[h]ere, as in the Canisteo Wind Order, we conclude there is no legal or practical impediment to imposing the water quality related Certificate Conditions in the Article 10 Certificate in anticipation of the issuance of a WQC pursuant to Section 1000.8."[11] This Siting Board decision makes clear that wetlands that have not proceeded through the mapping or amendment/adjustment procedural requirements in the DEC regulations are still subject to the Siting Board's regulation under Article 10 and the WQC process, in conjunction with USACE permitting.

Q. If, *arguendo*, the Siting Board determines that Article 24 and Part 663.5 applies to the non-mapped wetlands in the Project Area, do the DEC staff witnesses correctly apply the regulatory regime?

A. No. The DEC staff witnesses characterize the Part 663 process as requiring three steps: (1) avoid impacts, (2) minimize remaining impacts, (3) then mitigate (or compensate) (DEC staff Wetlands Testimony, p. 10, ll. 5–11). However, this is an incorrect application of the Part 663 regulations. They simply skip regulatory steps. Pursuant to 6 NYCRR § 663.5(d), both "a determination of compatibility and a weighing of need against benefits lost are the criteria for decision making [in Part 663]." First, a three-part compatibility test must be applied to certain usually compatible and usually incompatible activities listed in the chart in 6 NYCRR § 663.4(d) ("Activities Chart"), and unlisted activities (6 NYCRR § 663.5(e)). If an activity fails the compatibility test, or is listed as

[11] Case 16-F-0267, *Atlantic Wind LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, With Conditions (June 30, 2020), at 13 ("Atlantic Wind Order").

incompatible in the Activities Chart, then the next step is the applying the weighing standards set forth in 6 NYCRR § 663.5(e)(2). As explained later in this testimony, the DEC staff witnesses fail to correctly apply the compatibility test and ignore the weighing standards. Instead, DEC staff rushes to judgment by arguing that costly wetland mitigation is required that would jeopardize the Project's economics.

Q. What do the DEC regulations require with respect to the Part 663.4 activity and compatibility screening criteria?

A. A chart is provided in this regulation showing whether activities in mapped wetlands and associated adjacent areas are to be regulated and what the compatibility of the subject activity is with respect being performed in a mapped wetland.

Q. How does DEC staff evaluate the compatibility of a solar project within a wetland?

A. DEC staff witnesses state that they do not consider each activity separately, but instead evaluate "all the various underlying activities and [applies] the most restrictive level of compatibility to the entire project before progressing to the appropriate procedural requirements under Part 663.5" (DEC staff Wetlands Testimony, p. 9, ll. 15–19).

Q: What do the DEC staff witnesses claim is the most restrictive level of compatibility with respect to the Project?

A: The DEC staff witnesses argue that "[h]ere, the most restrictive level of compatibility with respect to the Project involves the construction of an 'industrial use facility' which is defined as 'any building or **facility associated with the** manufacturing, production, processing or assembly of goods or materials, or the **production of power**'" (DEC staff Wetlands Testimony, p. 9, l. 20–p. 10, l. 3 [quoting 6 NYCRR § 663.2(q)] [emphasis in original]). The Activities Chart, set forth in 6 NYCRR § 663.4(d)(43), explains that

industrial use facilities require a permit for freshwater wetlands and their adjacent areas, and are incompatible with wetlands and their functions and values. If the Project is classified as an industrial use facility, the Project must be reviewed in accordance with the weighing standards set forth in 6 NYCRR § 663.5(e)(2).

Q. Is it logical to classify the Project as an industrial use facility as the DEC staff has done and treat it with an "incompatible" classification?

A. No. The term "industrial use facility" was enacted in 1985, is siloed in the Activities Chart under "buildings", and was designed to refer to direct fill; this subsection notes that impacts associated with these activities arise from constructing buildings, accessory roads, and parking areas, explaining that "[r]oofs and paved areas quickly shed rain where that rain previously had an opportunity to soak into the ground. This can result in more turbulent streamflow, more erosion and sedimentation, and higher water levels in surround areas, including nearby wetlands" (*see* 6 NYCRR § 663.4(d)).

Technology related to the construction and operation of energy facilities has changed dramatically since 1985. At that time, industrial use facilities consisted almost exclusively of nuclear, coal, oil, and new, emerging gas-fired plants requiring buildings and extensive concrete foundations, all of which activities require fill and impact the entire footprint of those projects. The DEC Division of Water, Bureau of Water Permits ("DOW") recognized a need to address the unique nature of solar energy projects with respect to stormwater runoff when considering Stormwater Pollution Prevention Plan ("SWPPP") and Construction General Permit requirements. The DOW considers solar energy projects designed and constructed in accordance with the regulations outlined in the April 6, 2018, Memo titled: "Solar Panel Construction Stormwater

Permitting/SWPPP Guidance", to be classified as a "Land clearing and grading for the purposes of creating vegetated open space (*i.e.*, recreational parks, lawns, meadows, fields)" project as listed in Appendix B, Table 1 of the Construction General Permit (App. App'x 23-4 at 2). Per the requirements under Scenario 1 of the Memo, the DOW allows the applicant to demonstrate that "construction of the solar panels will not alter the hydrology from pre- to post-developmental conditions" with the exception of those Project components which are considered impermeable (*i.e.*, concrete pads, gravel access roads, parking areas) and are therefore classified under Scenario 2 of the Memo (*id*. at 2–3).

In our experience, the majority of solar projects have been permitted under a combination of Scenario 1 and Scenario 2, meaning that the solar panels will not alter hydrology from pre- to post-development condition; however, the impervious Project Components will be required to address the need for post-construction stormwater management controls in accordance with the Construction General Permit and the New York State Stormwater Management Design Manual. For the Garnet Energy Center, there will be no Project buildings. Panels will be mounted on racking systems supported by driven posts, not concrete foundations, resulting in minimal ground disturbance (*see* App. Ex. 4 Update at 26). The Project, therefore, will not create the kind of impact that was intended to be protected against when industrial use facilities were included in the Activities Chart 35 years ago, when less impactful solar farms were not being proposed. In fact, the Project's proposed ground cover beneath the solar arrays consisting of native or naturalized grass seeds will result in less erosion and sedimentation than the existing

agricultural ground cover that is routinely disturbed and treated with pesticides and herbicides regularly utilized in farming practices.

The DEC staff witnesses essentially argue, inconsistently, that they should be given limitless flexibility and discretion to expand official wetland maps on their own and ignore the public processes required in the regulations, but then strictly apply this antiquated definition of industrial use facilities to a renewable solar project. This selective application of the regulations is inconsistent with the facts, the evolution of energy facilities and climate change regulatory programs and should be rejected by the Administrative Law Judges and the Siting Board.

The Project should, therefore, be classified on the basis of the activities it proposes to conduct in wetlands, as opposed to a rigid, categorical classification as an industrial use facility. Because wetlands would still function under panels and above collection lines, and the Project's impervious surface activities constitutes a very minor portion of the activities proposed in wetlands, the Project should be classified as a less-restrictive activity. DEC staff proposes that the Project should be classified as "incompatible", meaning, in DEC staff's view, the Project is conclusively "incompatible with a wetland and its functions and benefits" (6 NYCRR Part 663.4(d)). The Project should be classified as usually compatible or an unlisted activity. Usually compatible means that a regulated activity may be compatible with a wetland and its functions and benefits, although in some circumstances the proposed action may be incompatible" (*id*.). A classification of usually compatible would be suitable because, as explained more fully below, impacts are minimal, the Project will halt disruptive farming activities, and would reseed and maintain these areas.

Q. Can you please explain how the regulatory compatibility test would be applied to the Project if it were considered an unlisted activity in the Activities Chart?

A. Pursuant to 6 NYCRR § 663.5(e)(1), an Article 24 permit, or in this case, an Article 10 certificate, with or without conditions, may be issued for an unlisted activity on a wetland of any class or in a wetland's adjacent area, if it is determined that the activity: (i) would be compatible with preservation, protection and conservation of the wetland and its benefits, and (ii) would result in no more than insubstantial degradation to, or loss of, any part of the wetland, and (iii) would be compatible with public health and welfare. The application of the weighing standards in 6 NYCRR § 663.5(e)(2) need not be applied if the three compatibility tests are met.

As demonstrated in Garnet's Article 10 Application, the Project is compatible with the preservation, protection, and conservation of the wetland and its benefits. As explained below, most of the proposed impacts are either temporary, or in the form of conversion, which typically constitutes conversion of land cover through clearing of non-aquatic vegetation to eliminate the potential of shading effects caused by vegetation adjacent to Project panels (App. Ex. 22 Update at 79–80). As discussed in detail herein, vegetation clearing that allows the non-mapped wetlands to continue providing groundwater recharge or discharge, flood-flow alteration, sediment/toxicant/pathogen retentions, and nutrient removal/retention/transformation and the ability to provide wildlife habitat, will have an inconsequential effect on wetland functions (*id*.). Temporarily disturbed areas, even those subject to conversion, will be seeded with a typical native or naturalized species mix following the construction phase of the Project. These seeded areas will be further stabilized with mulch and left to re-establish

vegetation (*id*. at 16). By reseeding these areas, including under the panels, and ceasing farming activities, including pesticide applications, native or naturalized vegetative communities can develop in what was previously disturbed areas (*id*.). Accordingly, the Project meets the first compatibility test.

The Project also meets the second compatibility test, as placing solar posts, access roads and inverter and substation pads would result in no more than insubstantial degradation to, or loss of, any part of the wetland. For these permanent impacts to non-mapped wetlands, Garnet expects the USACE to require mitigation and is ready to comply with USACE requirements. That would likely amount to 21.91 acres of wetland mitigation for the 0.95 acres of permanent impacts to non-mapped wetlands (assuming a mitigation ratio of 2.5:1) as a result of "fill" activities (permanent access roads, grading, culverts, etc.). The remaining 9.77 acres of permanent impacts, for which a mitigation ratio of 2:1 is assumed, are to palustrine forested ("PFO") wetlands subject to Type I tree clearing, primarily for the siting of solar array, and will be restored and maintained as a different cover class (palustrine emergent ["PEM"]) wetlands for the life of the Project. As discussed later in this testimony, conversion of PFO to PEM wetland allows for important wetland functions to persist, even if some functions and values are lost through the change in vegetative condition.

Lastly, the Project meets the third compatibility test because the Project would be compatible with public health and welfare. 6 NYCRR § 663.5(f) defines public health and welfare as consistency of the proposed activity with physical health, and with related federal, State, local laws, regulations, and policies. The Application demonstrates that no significant adverse impact on the environment, public health, and safety were determined

through the many studies performed to prepare the application (App. Ex. 15 at 4) and the Project is consistent with State and local laws, regulations, and policies—namely, the State Energy Plan's goal for reducing statewide greenhouse gas ("GHG") emissions by 85% from 1990 levels by 2050 and generating 100% of the State's electricity from renewable sources by 2040; the State Clean Energy Standard; the CLCPA, which increases the State's renewable energy penetration goal to 70% by 2030, with 6 gigawatts of solar generation by 2025; and the Regional Greenhouse Gas Initiative ("RGGI") (*see* App. Ex. 10; *see also* DPS Staff Panel in Support of Settlement ("SPSS"), p. 39, l. 15–p. 43, l. 12).

Accordingly, the Project—if more accurately characterized as an unlisted action in the Activities Chart—meets all three of the 6 NYCRR § 663.5(e)(1) compatibility tests, and the Siting Board can make the required statutory finding that wetland impacts have been avoided or minimized to the maximum extent practicable without consideration of the weighing standards. Similarly, if the Project were classified as "compatible" rather than "incompatible", as discussed above, then that classification would be a more realistic input for the weighing standards application.

Q. Assuming the Project is classified as an industrial use facility as DEC staff argues, would the record, as it stands now, allow the Siting Board to make the statutory determination under Article 10 that impacts to wetlands have been avoided or minimized to the maximum extent practicable?

A. Yes. The Applicant demonstrated that the Project meets the weighing standards in Exhibit 22 of the Application (App. Ex. 22 Update at 92–97). DEC staff failed to address the demonstration made in the Application. The regulations plainly state that if a project

does not meet the aforementioned three compatibility tests or is identified as incompatible in the Activities Chart, then, the project must meet each of the weighing standards listed in 6 NYCRR § 663.5(e)(2) (*see* 6 NYCRR § 663.5(d)(2)). The DEC staff witnesses state that the "degree of balancing required is commensurate with the classification of affected wetlands and the severity of the remaining impacts to their functions" (DEC staff Wetlands Testimony, p. 10, ll. 12–13).

These standards are very similar to the PSL §§ 168(3)(c) and 168(4) Article 10 determination the Siting Board must make. As explained above, the Part 663.5 standards generally require that the Applicant make efforts to avoid or minimize impacts, the remaining impacts are then balanced against whether wetland losses are inconsequential or an economic or social need for a project (*see* 6 NYCRR § 663.5(e)(2)). Although they acknowledge them, the DEC staff witnesses simply do not apply the weighing standards to the Project. They skip this critical test, focusing solely on one side of the ledger (the alleged adverse impacts) and failing to weigh or balance the compelling social and needs of the Project that clearly outweigh the alleged adverse impacts to the non-mapped wetlands.

Q. When the DEC staff witnesses skip over the application of the weighing standards to the Project, do they accurately describe the role of mitigation?

A. Not entirely. The DEC staff witnesses argue that "any remaining loss of wetland acreage or function **must** be mitigated for, unless it can be shown that the losses are inconsequential or that, on balance, economic or social need for the project outweighs the loss" (DEC staff Wetlands Testimony, p. 10, ll. 9–11 [emphasis added]). So here, the DEC staff witnesses do acknowledge that a project can be certified without mitigation if

it passes the weighing standards but, as noted above, they fail to apply the weighing standards and instead proceed directly to arguing for costly mitigation that jeopardizes the Project's economics.

The weighing tests do not mention any requirement to "mitigate"; rather the regulations state that "[t]he applicant may suggest a proposal to enhance the existing benefits provided by a wetland or to create and maintain new wetland benefits in order to increase the likelihood that a proposed activity will meet the applicable standards for permit issuance" (6 NYCRR § 663.5(g)(1)). Mitigation is voluntary, not a requirement of the weighing standards—or the Siting Board's PSL § 168(3) determinations—that the Siting Board must employ to ensure compliance with State law.

Q. Please respond to DEC Staffs' testimony that "because the Applicant did not propose a wetland mitigation plan, nor adequately assess wetland impacts from the Project, we are currently unable to determine the sufficiency of wetland mitigation for the Project" (DEC staff's Wetland Testimony p. 18, ll. 17–19).

A. An assessment of the impacts to state-mapped and non-mapped wetlands is provided in Exhibit 22 of the Application Update. Furthermore, and as acknowledged in DPS staff's testimony, "proposed Certificate Condition 122 requires the Applicant to develop a Wetlands Mitigation Plan for both the wetlands where impacts are currently anticipated and impacts that may result from Facility layout changes proposed in the future (DPS SPSS, p. 59, l. 3–8). The Applicant has agreed to provide a Wetland Mitigation Plan in consultation with DEC Staff for wetlands W-BTF-1, W-BTF-9, W-BTF-12, W-BTF-14, W-BTF-15, W-BTF-16, W-BTF-17, W-JJB-1, W-JJB-3, W-JJB-4, W-JJB-5, W-JJB-6, W-JJB-8, W-NSD-5, W-NSD-7, W-NSD-9, W-NSD-18, PW-26, V-19, C-33, V-20, M-4,

and W-1, as well as the 100 foot adjacent areas to wetlands V-19, C-33, V-20, M-4, and W-1 (Certificate Condition 122(f)). This Plan employs restoration as mitigation, which is entirely permissible under the DEC's *Freshwater Guidelines on Compensatory Mitigation* (1993) ("DEC Mitigation Guide"), which states that "[t]emporary disturbances, where pre-construction conditions are essentially restored, for example when laying a pipeline, do not require **compensatory** mitigation since there is no permanent loss" (DEC Mitigation Guide at 4) (emphasis in original)).

The final Wetland Mitigation Plan will be given to DEC and DPS staffs to review and comment within three months of commencement of construction of the Project. If, after five years, monitoring demonstrates that wetland mitigation is not meeting the goals and standard of the Wetland Mitigation Plan, the Applicant will develop a Wetland Mitigation Remedial Plan in consultation with DPS and DEC staffs, wherein restoration shall be revised or adjusted (Certificate Condition 122(f)). This Wetland Mitigation Plan strategy tracks what the Siting Board approved in *East Point, Trelina*, and *Excelsior* as supported by DEC staff, and as explained below.

Q. Does DEC staff's recommended mitigation follow its own internal guidelines?

A. No. According to the DEC Mitigation Guide, the aim of mitigation is to "fully replace wetland acreage and all functions and benefits lost as a result of the project" (DEC Mitigation Guide at 2 (emphasis added)). DEC staff, however, fail to consider any functions and benefits lost as a result of the Project but summarily concludes that the "lack of mitigation for unavoidable impacts would result in the Project's noncompliance with the requirements of Article 10 and Article 24" (DEC staff Wetlands Testimony, p. 17, ll. 16–17). DEC staff does not support its sweeping conclusion with a detailed

analysis of what benefits are potentially lost, let alone any consideration of the magnitude, or lack thereof, of those losses. Pursuant to the DEC Mitigation Guide, "[c]ompensatory mitigation preferably should be 'on-site'" (DEC Mitigation Guide at 4). As discussed herein, the Applicant's proposed restoration measures of the non-mapped wetlands, as a form of on-site mitigation and which addresses the restoration of wetland functions and values, conform to the DEC Mitigation Guide.

Q. Has DEC staff agreed in other Article 10 proceedings that reseeding and maintaining adjacent areas that had been previously farmed actually benefited those areas and did not adversely affect the wetlands?

A. Yes, in *East Point*, *Trelina*, and *Excelsior*, DEC staff agreed to the respective applicants' restoration measures and agreed to the following wording in the SEEP Guide: "Based upon the proposed restoration efforts described above, the conversion of the agricultural land cover of these adjacent areas from active agriculture to a stabilized vegetative land cover will result in an enhancement of the adjacent areas and will not negatively impact the wetlands."[12] The Siting Board adopted this provision in *Trelina, East Point*, and *Excelsior*, and concluded that the Projects, as conditioned by the certificate conditions and SEEP Guide provisions, were designed to operate in compliance with all applicable State freshwater wetland protection laws and regulations (*see* Trelina Order at 41; East Point Order at 42; Excelsior Order at 38). Even though there were impacts to non-mapped wetlands or their adjacent areas in those cases, neither agency staff argued for,

[12] Case 19-F-0299, *Excelsior Energy Center, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Apr. 6, 2022) ("Excelsior Order"), App'x B, § B.17.d.v.a; Case 19-F-0366, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Nov. 30, 2021) ("Trelina Order"),Trelina Order, App'x B § B.17.d.v.a.; Case 17-F-0599, *East Point Energy Center, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Jan. 7, 2021) ("East Point Order"), App'x B, § B.15.d.v.

nor the Siting Board required, creating new wetlands as mitigation. Indeed, according to the wording of the certificate conditions or SEEP Guides in those cases, the reseeding/restoration measures were considered "mitigation," just as Garnet proposes here. Thus, DEC staff in Garnet is taking a position inconsistent with the position they took in three prior cases.

Q. Please describe what wetlands mitigation the DEC staff witnesses suggest it would accept.

A. The DEC staff witnesses opine that they would likely accept the mitigation standards set forth in the regulations for applications for renewable energy projects submitted under Section 94-c before ORES (DEC staff Wetlands Testimony, p. 17, l. 18–p. 18, l. 19). If the Siting Board finds that the wetlands should be treated as Class II and III, Garnet would be required to develop a mitigation plan, based upon the DEC staff witness testimony, totaling about 51.36 acres, which would cost approximately $5,136,000.

Q. Explain how this estimate was developed.

A. The DEC staff witnesses did not present a mitigation estimate and did not provide any balancing of the approximate cost as part of the weighing standards nor in compliance with the statutory language in Article 24 that states wetlands regulation must be "consistent with the general welfare and beneficial economic social and agricultural development of the state" (ECL § 24-0103). Attached hereto is Exhibit GRP-2, a table detailing the application of the Section 94-c mitigation guidelines, assuming the classification of the wetlands per the DEC staff's wetland field visit with the Applicant ("Estimated Mitigation Costs per NYSDEC Mapped Freshwater Wetlands and Adjacent

Area"), and assuming DEC's inaccurate calculation of wetland impacts ("Estimated Mitigation Costs per NYSDEC Staff Recommendations").

The Applicant also examined what third-party entities would charge for the creation of wetlands for mitigation purposes and obtained an estimate of approximately $100,000 per acre. Exhibit GRP-8 is the public information describing the price of mitigation by Ducks Unlimited, Inc., a non-profit organization that provides, among other services, creation of wetlands as compensatory mitigation. As of March 2018, for the region in which the Project is located, one credit for one acre of wetland mitigation would cost $98,022. Assuming the credit has increased since 2018, the Applicant assumed $100,000 per acre.

Q. Are the Section 94-c regulations applicable to the Project?

A. On advice of counsel, no they are not. When the legislature enacted Section 94-c in 2020, it expressly included an exemption for facilities, like the Project, that submitted a PIP Plan before the effective date of the new siting process (*see* EL § 94-c(4)(e)(iii)). The Applicant did not avail itself of the transfer option into Section 94-c. It would be highly prejudicial and illogical to subject an Article 10 applicant to the standards in a permitting regime that explicitly permits an applicant to continue its current permitting regime. As explained above, the Applicant has already committed many millions of dollars to develop the Project under Article 10 since development of the Project commenced in 2019, and the application of the Section 94-c wetlands regulations would impose an unforeseen cost on the Project of a magnitude that would jeopardize the economics of the Project.

In addition, the Section 94-c siting process addresses wetlands delineation and makes a final jurisdictional determination earlier in the application proceeding. Pursuant to 19 NYCRR § 900-1.3(e), before the submission of an application, an applicant is required to conduct a wetlands delineation; submit a draft delineation report to ORES and DEC; consult with ORES and DEC to determine the status of the delineated wetlands; and receive a final AJD from ORES within 60 days of receipt of the draft delineation. Therefore, Section 94-c applicants are made aware of the status of wetlands in a project area and can make financing decisions before submitting an application. Article 10 has no such pre-application jurisdictional determination procedure.

Q. Do the DEC staff witnesses offer any evidentiary support for their claim that the Section 94-c regulations "take into account the need to balance economic or social need of large-scale renewable energy projects, including related to climate change, with the loss of function and benefit" with respect to wetlands (DEC staff Wetlands Testimony, p. 18, ll. 5–8).

A. No. The DEC staff witnesses summarily state that they are "advised" that the ORES wetland regulations account for the balance between economic and social needs with potential impacts (DEC staff Wetlands Testimony, p. 18, ll. 5–7). Summary application of the ORES regulations does not consider the case-specific circumstances of the Project. Indeed, the ORES regulations allow significant flexibility through a provision in the Section 94-c regulations—notably not mentioned by the DEC staff witnesses—that allows ORES to depart from the wetland mitigation guidelines (*see* 9 NYCRR § 900-2.15(g)). DEC staff would apply the ORES regulatory guidelines, without a technical analysis, even though those ORES guidelines might not even be applicable. Accordingly,

summary application of the ORES guidelines to the Project fails to consider the balancing criteria in PSL § 168.3(c) and PSL § 168(4), and the Part 663.5 weighing standards, which are both applied on a case-by-case basis.

Q. Does Garnet satisfy the weighing tests with respect to 6 NYCRR Part 663?

A. Yes. Without a doubt and based upon the existing evidentiary record. As an initial matter, Garnet is required to satisfy the weighing tests with respect to impacts to mapped wetlands and the 100-foot adjacent areas. As explained above, there are only 10.96 acres of proposed impacts to mapped wetlands and their adjacent areas.

Q. If, however, we assumed that Article 24 and Parts 663 and 664 were applicable to the non-mapped wetlands in the Project Limits of Disturbance ("LOD"), please describe how the Project's proposed activities in the mapped and non-mapped wetlands satisfy the weighing tests.

A. The weighing standards allow for approval of the proposed activity without mitigation, provided that the activity: (1) is compatible with the public health and welfare; (2) is the only practicable alternative that could accomplish the Applicant's objectives; (3) has no practicable alternative on a site that is not a freshwater wetland or adjacent area; (4) minimizes degradation to, or loss of, any part of the wetland or its adjacent area; and (5) minimizes any adverse impacts on the functions and benefits that the wetland provides (*see* 6 NYCRR § 663.5(e)). The Project must also satisfy a "pressing" (Class II wetlands) economic or social need to some degree above and beyond the loss of or detriment to the benefits of the wetland (*id.*)

The Project meets those five criteria with respect to the mapped and non-mapped wetlands. In addition to being compatible with public health and safety, as discussed

above (Criterion 1) the proposed Project layout is the only practicable alternative that would allow construction of the Project approved by New York State Energy Research and Development Authority ("NYSERDA") for a Renewable Energy Credit contract (Criteria 1 and 2) (App. Ex. 22 Update at 95; *see generally* App. Ex. 9). There are no alternative sites or Project layouts that are practicable, considering, *inter alia*, the multitude of on-site constraints ranging from DEC mapped wetlands, landowner exclusion zones, steep slopes, property setbacks, archeological avoidance areas and on-site streams (App. Ex. 22 Update at 92; App Ex. 20 at 7). In this vein, the DPS testimony explains the multitude of site constraints the Applicant considered in choosing this site layout (DPS SPSS, p. 35, l. 19–p. 36, l. 12). DPS staff witnesses testified that the Project, as modified by the Certificate Conditions, would avoid, minimize, or reasonably offset the potential for the Project to result in adverse impacts to "Land Use, Visual Resources, Cultural Resources, Terrestrial Ecology and Rare Species, Topography, Geology, Soils and Groundwater, Transportation and Communication, Noise, and Electromagnetic Fields, while fulfilling the objective of constructing and operating a 200 (MW) generating capacity solar electric facility, together with a 20-MW/4-hour duration energy storage system" (DPS SPSS, p. 36, ll. 3–12). The Project's layout accounts for all the aforementioned siting constraints. DEC staff testimony does not suggest another practicable alternative layout. DEC staff did not request that the Applicant consider an alternative layout they thought would be more acceptable (*see* Ex. GRP-9).

As to Criterion 3, we explain below how the Application and the Update detail how impacts to mapped and non-mapped wetlands were avoided or minimized (App. Ex. 22 Update at 91–96; App. Ex. 22 at 91–96). DPS concurs with this conclusion as well,

effectively complimenting the Applicant on its efforts when it stated "when comparing the proposed wetland impacts from the Applicant's original Article 10 Application to the proposed impacts in the Application Update, the Applicant exhibited a concerted effort to avoid and minimize its proposed wetland impacts in the Application Update" (DPS SPSS, p. 56, ll. 8–14).

As to Criteria 4 and 5, as discussed below, the Project will not only minimize degradation to the mapped and non-mapped wetlands but may even improve them through best management practices and other measures protective of wetlands (App. Ex. 22 Update at 1, 67, 91). The impacts, therefore, would be compatible with the preservation, protection, and conservation of the wetland because there would not be more than insubstantial or in consequential degradation or loss to the wetlands for which anticipated USACE mitigation would be proposed (*id.* at 96). Most impacts are temporary, for which the wetlands will be restored; or there will be conversion impacts where the following functions and values will be retained: groundwater recharge or discharge, flood-flow alteration, sediment/toxicant/pathogen retentions, and nutrient removal/retention/transformation and the ability to provide wildlife habitat.

Lastly, there is a compelling or pressing need to meet the goals set forth in the CLCPA, including, by 2030, "reducing greenhouse gas emission levels by 40% from 1990 levels, producing 70% of electricity from renewable sources, . . . and the additional expressed goal of reducing 100% of the electricity sector's greenhouse gas emissions by 2040" (CLCPA § 1(12)(d)). The Project will contribute to climate change mitigation by providing utilities clean energy for distribution, thereby reducing the need for other fossil fuel technology operation (App. Ex. 4 Update at 43). The Siting Board has also

previously determined that the requirements outlined in the CLCPA apply to the consideration of PSL Article 10 certificate applications.[13] Further, in *Atlantic Wind*, the Siting Board has determined that, with respect to balancing the weighing standards in that proceeding, the CLCPA "establishes a pressing social and economic need that outweighs the limited loss of wetland benefits provided by Freshwater Wetlands BC-20 and NE-2" (Atlantic Wind Order at 21).

Q. Please address DEC staff's testimony that "[b]ased on review of the Project application and GIS shapefiles provided by the Applicant, opportunities to reconfigure the Project Layout to completely avoid permanent impacts to protected adjacent areas do not appear to have been fully explored and exercised" (DEC staff Wetlands Testimony, p. 19, ll. 9–12).

A. The Applicant strongly disagrees with DEC staff's assessment that additional opportunities to reconfigure the Project Layout to completely avoid permanent impacts to protected adjacent areas do not appear to have been fully explored or exercised. Exhibit GRP-10 clearly demonstrates the efforts taken by the Applicant to minimize the impacts to state-mapped wetlands to the maximum extent practicable. What the DEC staff fail to recognize in their review is that they are not writing on a blank slate; the technical and operational constraints, described above, limit the placement of arrays to the areas identified in the proposed Project Layout and are necessary for the Project to meet the 200 MW development goal required under the Applicant's Renewable Energy Credit contract with NYSERDA. Was not the Update a concerted effort to "reconfigure" the Project? As noted above, impacts to all wetlands were reduced dramatically by the

[13] *See* Case 16-F-0328, *supra*, Order on Rehearing (Feb. 13, 2020), at 10, 14.

Applicant. Moreover, as proposed, out of the total 0.5 acres of mapped wetlands currently proposed to be impacted by the Project, only approximately 0.3 acres are subject to permanent impacts (*see* App. Ex. 22 Update at 90). Additionally, only 3 acres of state-mapped wetland adjacent areas will be permanently impacted. The remaining impacts to these areas are temporary, which will be restored or converted, such that wetland functions will be altered, but most critical wetland functions and values will be retained through the change in vegetative condition. This is discussed in detail later in the testimony. The point is that impacts to mapped wetlands (and their adjacent areas) currently regulated under Parts 663–664, 10.96 acres, of which only 3.28 acres are permanent, in a Project Area which contains 613.5 acres of wetlands (regardless of jurisdiction), are minor and inconsequential, and clearly displays avoidance and minimization (*see id*. at 63, 87, 90). Before the Update, the total impact was approximately 89 acres. The DEC witnesses fail to acknowledge these avoidance and minimization efforts; we believe their selective, conclusory testimony should be given little credibility.

The Applicant submitted Garnet IR-2 to DEC staff (Ex. GRP-9) requesting that DEC staff "specify what reconfiguration opportunities [DEC] witnesses identified for the Project layout to completely avoid permanent impacts to permanent impacts to protected adjacent areas," to which the DEC responded, without providing any indication of any reconfiguration or avoidance and minimization measure opportunity it apparently believes the Applicant has not considered, that "[t]he Applicant has failed to provide any evidence in the record that any alternate Project layout was considered." This response is preposterous, as the Application Update reconfigured the Project Layout to avoid a vast

majority of the originally proposed placement of Project Components in both mapped and non-mapped wetlands.

Q. As it pertains to the weighing standards in Part 663.5 and the balancing in PSL § 168(3)(c), please respond to DEC staff's testimony regarding the functions and benefits of impacted wetlands and adjacent areas (DEC staff's Wetland Testimony, p. 15, l. 21–p. 16, l. 12).

A. DEC staff state that "[t]ree clearing, excavation, grading and fill with the increase in impervious surface and stormwater runoff upland of wetlands can dramatically impact the wetland's hydrology that will diminish the wetland's stormwater attenuation and treatment functions, and fencing can block wildlife migration corridors between associated wetlands and exclude wildlife from using that space" (DEC staff Wetlands Testimony, p. 16, l. 22–p. 16, l. 4). As discussed below, the Applicant has demonstrated that impacts to state-mapped and non-mapped wetlands have been minimized to the maximum extent practicable, and that all practicable measures will be taken by the Applicant to minimize impacts to state-mapped and non-mapped wetlands where activities associated with placement of Project Components are unavoidable through the implementation of Environmental Compliance and Monitoring programs, application of best management practices including stormwater prevention control measures, and development and adherence to a Project SWPPP. Collectively, these measures will minimize the impacts to wetlands and the functions and benefits that they provide. Where impacts to wetlands are unavoidable due to siting of Project Components, the Applicant has demonstrated that most of these impacts will be temporary or conversion in

nature, and will modestly alter, not eliminate, the functions currently provided by all wetlands or the adjacent areas of state-mapped wetlands.

We also disagree with DEC witness' statement on fencing (*see* DEC staff Wetlands Testimony, p. 16, ll. 3–4). Fencing is primarily proposed in discrete blocks, forming a perimeter around panel arrays that are primarily located in agricultural fields throughout the Project Area. As explained in Exhibit 22 of the Application, to which the DEC witnesses do not address, TNC Resiliency Data was reviewed to evaluate the level of existing connectivity of wildlife habitat within the Project Area (App. Ex. 22 Update at 18). Much of the Project Area contains open habitat, which provides below average or limited natural flow of animal movements (*see* App. Fig. 22-6 Update). Some areas containing forestland provide above average connectivity to support movement of local animal populations. A large undisturbed tract of forested habitat is in the central portion of the Project Area between Slayton Road and Cooper Street (*id*.). This area is contiguous with forested habitat that extends off-site to the southwest, southeast, and northwest and will remain largely undisturbed by the Project. The Project Layout maintains connectivity to allow for uninhibited movement through these large, forested blocks both north-south and east-west (App. Ex. 22 Update at 11). The existing New York Power Authority ("NYPA") transmission corridor will also remain unaffected by the Project, which will continue to facilitate the uninhibited east-west movement of wildlife through the Project Area. Perimeter fencing as proposed is primarily sited within areas of low existing connectivity and flow, and therefore is likely to have little impact on the movements of wildlife within the Project Area and wildlife habitat nearby (App. Ex 22 Update at 18). Additionally, a 6-inch gap at the bottom of the fence is proposed in all

areas. In essence, this 6-inch gap will allow all local fauna to migrate above, through, or under the proposed fences except white-tailed deer (*Odocoileus virginiana*) and coyotes (*Canis latrans*).

DEC staff go on to state "[d]ownstream from the project area, Sterling Creek contains imperiled freshwater mussels which are sensitive to water quality impacts. An ecologically intact adjacent area buffers and protects the wetland and associated streams from chemical and physical disturbances and helps maintain the hydrologic cycle that developed and maintains the wetland proper" (DEC staff Wetlands Testimony, p.16, ll. 5–9). As described in this Testimony, first and foremost, farming activities will cease for the life of the Project and that means fertilizers and pesticides likely used in connection with these activities will not be able to flow downstream (App. Ex. 22 Update at 67). In addition, through proper adherence to the Project SWPPP, sediment control measures will eliminate sedimentation to downstream sources (*id*.; *see also* Certificate Condition 109). The SWPPP identifies the post-construction erosion and sediment control practices that will be used to manage stormwater runoff from the developed Project Area, and includes runoff reduction/green infrastructure practices, water quality treatment practices, and practices that control the volume and rate of runoff (App. Ex. 22 Update at 99). The Final SWPPP will include a description of proposed measures of prevention of ecological impacts to the maximum extent practicable, as well as pre- and post-development hydrologic modeling and water quality calculations (SEEP Guide § A(2)). Thus, the SWPPP protections will be designed to prevent any runoff from leaving the site. In addition, the tributaries to Sterling Creek within the Project Area flow for over four miles to the north before reaching the Sterling Creek itself, allowing for some sediment

suspended in water, if any, to settle out before reaching Sterling Creek. According to the DEC mapped priority streams, the mapped tributaries to Sterling Creek within the Project Area are associated with large wetlands (W-JJB-3, W-JJB-4, and W-BTF-17), providing flood-flow alteration and exhibit the function of sediment/toxicant/pathogen retention. The Project impacts proposed to these wetlands are minimal, considering their overall size, comprising only a total of 0.37 acres of permanent impacts (2.50 acres of temporary impact and conversion), and will not eliminate or significantly degrade the functions and values. Furthermore, exposed soils associated with the current agricultural activities in the surrounding area contribute to ongoing soil loss to adjacent streams through runoff. The likely routine application of herbicides, pesticides, and fertilizers pose an existing additional chemical water quality impact to downstream mussel habitat (App. Ex. 22 Update at 55). Conversion of the Project Area to a solar farm with proper adherence to DEC stormwater protection measures during construction and operation will result in minimal to no effect on downstream waters. In addition, the ability of the Project Area to reduce soil erosion will be bolstered in areas where herbaceous ground cover will more broadly cover the surface (*e.g.*, in place of row crops with exposed soil) reducing runoff and increasing rates of transpiration (*id*. at 95). All these measures support the conclusion that the Project would improve the functions and benefits of these wetlands where only temporary impacts are proposed. In conjunction with the SWPPP and these enhancements to the agricultural areas, the evidence shows it is likely to improve, not adversely affect, the water quality of Sterling Creek. Additionally, if the mussel populations were a concern for the Project, neither the New York Natural Heritage Program nor DEC identified those in any previous correspondence with the Applicant.

Q. Please address DEC staff witnesses testimony that the mitigation proposed by the Applicant in its proposed SEEP Guide is not sufficient to offset the loss of functions and benefits from the impacts to mapped and non-mapped wetlands (DEC staff Wetlands Testimony, p. 17, ll. 11–13).

A. As discussed above, the majority of impacts to state-mapped and non-mapped wetlands are considered conversion and temporary impacts which will modestly alter, not eliminate, the existing functions and values provided by these wetlands. Where impacts to state mapped-wetland adjacent areas are proposed, only a small amount of those impacts would be considered permanent (*see* App. Ex. 22 Update at 76–77). Areas where woody vegetation is cleared for siting of solar array or to minimize shading will be re-vegetated with appropriate native or naturalized herbaceous seed mixes and continue to provide most of the "increasingly critical" (DEC staff Wetlands Testimony, p.17, l. 14) functions provided by "wetland buffers" including improvement of wetland water quality through sediment, nutrient and contaminant reduction, flood control, wildlife habitat, and production export (*see* App. Ex. 22 Update at 61, 67–68). This evidence in the record was also not addressed by the DEC staff. DEC staff fail to recognize that the restoration of wetland areas associated with conversion or temporary impacts still serve to benefit the resiliency of the landscape to the effects of climate change and help to sequester carbon. A summary of studies conducted by the U.S. Department of Agriculture's ("USDA") Agriculture's Natural Resources Conservation Service supported that shifting land use from cultivation often resulted in replenishment of soil organic carbon, and that following restoration, carbon was sequestered at rates of up to 0.45 tons per acre per

year,[14] compared to reference wetland's rate of approximately 0.37 tons per acre per year[15], evidence that restored wetlands continue to provide carbon sequestration even after being converted from a previously disturbed state. Notably, the Project is projected to offset 71,680 tons of carbon emissions annually for the next 30 years (*see* App. Ex. 8 at 2). Furthermore, as has been agreed to by DPS and DEC staffs in other Article 10 proceedings, reseeding and maintenance of adjacent areas that had been previously farmed benefited those areas and did not adversely affect wetlands.[16] The Project will improve the conditions of these previously disturbed areas by providing a stabilized vegetative ground cover and significantly less intensive land disturbance throughout the anticipated 30 year operation of the solar energy center, resulting in less soil erosion, sedimentation, and the application of potentially harmful chemicals than current agricultural practices performed within the Project Area, while providing a habitat much more favorable to wildlife than the monoculture nature of an agricultural field.

Q. Please address the DEC staff witnesses' testimony that the Project, as proposed, does not consider any avoidance and minimization measures (DEC staff Wetlands Testimony, p. 18, l. 23–p. 19, l. 1)

A. The Applicant does not agree with the DEC staff witnesses' testimony that the Project has not considered any avoidance or minimization measures, as the Application, and Update, detail the avoidance and minimization measures that were employed in the

[14] Ronald Follett, *Soil Management Concepts and Carbon Sequestration in Cropland Soils. Soil and Tillage Research* (2001), *available at* https://www.sciencedirect.com/science/article/pii/S0167198701001805?via%3Dihub.

[15] Ned Euliss, et al. *North American Prairie Wetlands are Important Nonforested Land-Based Carbon Storage Sites. Science of the Total Environment* (2006), *available at* https://www.sciencedirect.com/science/article/abs/pii/S0048969705004195?via%3Dihub.

[16] Excelsior Order, App'x B, § B.17.d.v.a; Trelina Order, App'x B, § B.17.d.v.a.; East Point Order, App'x B, § B.15.d.v.

design of the Project. These measures are described, in detail, in the Application Exhibit 9 Alternatives Analysis and have been further demonstrated by the drastic reduction in impacts presented in the Applicant's Update to the Application. The Applicant has put forth significant time and effort to analyze numerous factors in consideration of applicable, reasonable, and available alternative site layouts and best management practices (as further discussed below) for the site which would minimize the Project's impacts to the maximum extent possible, while still achieving the Project's objectives (*see* App. Ex. 9 at 1).

Q. What additional developmental, technical, or engineering constraints must the Applicant consider in the siting of Project Components when developing a proposed site layout?

A. The Project sought to comply with applicable Town of Conquest setback requirements. Based upon community input, the Project has proposed to exceed municipal setback requirements in an effort to minimize potential visibility of solar arrays from residential receptors to the maximum extent practicable. As currently proposed and as agreed to in the Project's Proposed Certificate Condition 64, the Project Layout meets or exceeds the following setbacks:

- 50-foot minimum setback to edge of public road right-of-way;
- 250-foot minimum setback non-participating occupied residences;
- 100-foot minimum setback to non-participating residential property lines;
- 50-foot minimum setback to non-participating non-residential and/or vacant property lines

Additionally, "exclusion areas" based on landowner agreements are strongly considered in siting of Project Components. Glare to roadways and residences has been

minimized to the maximum extent practicable and, based on results of the Glint and Glare Analysis, the Applicant has removed panels from areas that were identified as having a high potential for glare impacts (App. App'x 24-2 at 101). One of the primary considerations in development of the Proposed Layout for the Project was to site Project Components on lands within the Project Area which were previously disturbed and/or cleared (App. Ex. 22 Update at 1). This minimizes new impacts and reduces the amount of tree clearing required for the Project, which, in turn, reduces habitat fragmentation within the Project Area. In addition to these considerations, the Proposed Layout was designed to reduce the need for development of areas that would require extensive earthwork and grading to the maximum extent practicable (*id*. at 92). Areas of steep slopes that would require significant earthwork have been avoided to reduce the need for extensive cut and fill (App. Ex. 9 at 5). Moreover, DEC mapped wetlands were avoided to the maximum extent practicable, with only 0.5 acres subject to proposed impacts from the Project, which will be discussed further below. Archeological sites also needed to be avoided in planning the site layout, as well as proximity to the existing NYPA 345-kV transmission line for interconnection to bulk power grid.

During development of the Project layout, Garnet acquired an additional 693 acres of optionable land to increase the amount of non-wetland developable land that could be used for the Project (App. Ex. 9 at 8). Where siting of Project Components is required outside of previously cleared or disturbed areas, a primary consideration is to avoid or minimize impacts to state-mapped wetlands and their 100-foot adjacent areas (App. Ex. 22 Update at 79). Where the 0.5 acres of impacts to state-mapped wetlands or the 10.47 acres of impacts to their adjacent areas were required due to developmental

constraints, lower value wetlands were prioritized over higher value wetlands (based on DEC wetland class) for siting of Project Components (App. Ex. 9 at 5). Panel placement on areas of steep slopes has been avoided to reduce the amount of earthwork and associated grading impacts required for Project construction. Areas of contiguous forested wetlands have been avoided to the maximum extent practicable, which will minimize fragmentation of remaining forested areas and minimize impacts to existing interior forest communities (*id.* at 7). Alternative panel arrangements within the Project Area were considered by the Applicant, but ultimately impacts to parcels 56.00-1-8, 56.00-1-9, 56.00-1-39, and portions of parcels 56.00-1-19, 56.00-1-48.2, 62.00-1-9.21, and 63.00-1-6.1 were avoided to minimize impacts to interior forest communities and forested wetlands (*id*.).

In January 2022, the Applicant filed an Update to the Application with the specific intent of updating the Project Layout to reduce the proposed impacts to state-mapped and non-mapped wetlands. The updated Project Layout significantly reduced the proposed impacts to state-mapped wetlands by nearly 99% (43.85 acres reduced to 0.5 acres) and the proposed impacts to state-mapped wetland adjacent areas by approximately 77% (45.21 acres reduced to 10.47 acres) (App. Ex. 22 Update at 87, 90). Furthermore, the proposed non-mapped wetland impacts were reduced by approximately 65% (103.8 acres reduced to 35.74 acres). In light of the Applicant's consideration of the developmental and technical constraints discussed above, and the significant reduction of proposed wetland impacts (both mapped and non-mapped) achieved as a result of the Updated Project Layout, contrary to the DEC staff unsupported assertions, confirmed their unwillingness to respond to the Applicant's IR for the basis of its statements, there

are no other reasonable and practicable alternatives within the Project Area in which Project Components could be alternatively sited to further avoid or minimize wetland impacts.

Q. Do the DEC witnesses acknowledge the avoidance and minimization measures contained in the Application Update?

A. No. DEC staff witnesses acknowledge that an update to the Application was made, but do not comment on it. Notably, DPS staff's Testimony agrees that "for purposes of the review required under Article 10, the Applicant has sufficiently demonstrated avoidance and minimization [of the proposed wetlands impacts]" (DPS SPSS, p. 55, ll. 19–21). DPS staff testified that the "proposed impacts are reasonable based on the Project design to date" (DPS SPSS, p. 56, ll. 7–8). DPS staff further states that, "when comparing the proposed wetland impacts from the Applicant's original Article 10 Application to the proposed impacts in the Application Update, the Applicant exhibited a concerted effort to avoid and minimize its proposed wetland impacts in the Application Update" (DPS SPSS, p. 56, ll. 8–14).

Q. How did the DEC staff calculate the number of wetland acres that they estimate the Project, as proposed, will permanently impact?

A. Per DEC staff's response to Garnet IR-1 (Ex. GRP-1), DEC's assumed total acreage of permanent impacts to "protected" wetlands (as discussed above, in DEC's opinion, mapped and non-mapped wetlands and their respective adjacent areas) was determined by overlaying the Applicant's "Garnet_LimitsofDisturbance" shapefile with a shapefile created by DEC comprised of all "protected" wetlands within 100 feet of the Project Area, then calculating the overlapping spatial geometry of these shapefiles. In

calculating the acres of impact, DEC did not differentiate DEC-mapped and non-mapped wetlands.

Q. Does this method of calculating wetland impacts accurately reflect the number of wetland acres that the Project, as proposed, will permanently impact?

A. No, it does not. The Applicant's "Garnet_LimitsofDisturbance" shapefile represents the proposed LOD for the Project. The LOD is the area identified as necessary to construct the Project, and in many cases may not experience any impacts associated with construction or operation activities (*i.e.*, grading or tree clearing), nor is it always associated with a Project Component. For example, of the 10.47 acres of proposed state-mapped adjacent area impacts, 5.30 acres of this area is occupied only by the Project's LOD and no other "activity" or Project Component is associated with these areas. Furthermore, DEC then incorrectly assumes, that all of these impacts are "permanent", which they are not (*see* DEC staff Wetlands Testimony, p. 16, ll. 9–19). Exhibit GRP-10 identifies where the Project's permanent and conversion impacts are proposed, and whether the impacts are proposed in state-mapped or non-mapped wetlands. Within Application Exhibit 22(l) (App. Ex. 22 Update at 76) and Table 22-1 (App. Ex. 22 Update at 81) the Applicant further identifies the various levels of impacts (permanent, temporary, conversion) associated with different state-mapped and non-mapped wetlands by cover class, and further describes the impact type occurring within each wetland (*e.g.*, access road, tree clearing Type I or Type II, array area). Where the LOD overlaps with a wetland, and no other construction/operation related activity (*e.g.*, tree clearing, grading, access roads) or Project Component is collocated, these impacts should be considered "temporary" as they will be restored to their preconstruction condition after construction

is completed. By calculating "permanent" impacts using the spatial overlapping geometry of all wetlands within 100 feet of the Project Area, and the Project's LOD, the DEC witnesses have not considered the nature of the predicted impact (*i.e.*, permanent, temporary, or conversion), as well as the site-specific risk to the mapped wetland's functions and/or benefits, as required by Article 10 (*see* 16 NYCRR § 1001.22(m)). Additionally, the DEC witnesses have overestimated the actual area of permanent impacts associated with the Project essentially using a strawman fallacy, as further explained below.

Q. Please identify the over estimations in the DEC staff testimony.

A. The permanent impacts to state-mapped wetlands and their adjacent areas (those regulated under Article 24) will be 0.27 acres and 3.01 acres , respectively, rather than the DEC staff mistaken estimates of 11.7 acres and 73.76 acres. The permanent impacts to non-mapped wetlands (those not regulated under Article 24) will be 10.72 acres.'

Q. Why is it critical to properly characterize the nature of the impacts to each category of wetlands and did the DEC staff do that?

A. They did not characterize any impacts with any specificity regarding the activity or the wetland characteristics. It is critical to be specific because once unavoidable impacts to wetlands regulated under Parts 663-664 are identified, they must be weighed against pressing social and economic factors. The specificity and nature of the impact bears upon the impact and is important in the balancing under Parts 663-664 and in the Article 10 PSL § 168(3) balancing as well. Temporary and conversion impacts are far less disruptive than permanent impacts (*see* App. Ex. 22 Update at 92). The majority of Project impacts to wetlands, whether state-mapped or non-mapped, are of this more

inconsequential nature and as such, are easily outweighed by the pressing goals of reducing emissions of GHGs by building projects such as Garnet.

Q. Has the Applicant properly characterized the nature of impacts to wetlands and adjacent areas?

A. Yes, as previously stated, within the Application Update Exhibit 22(l) (App. Ex. 22 Update at 76) and Table 22-1 (App. Ex. 22 Update at 81) the Applicant identifies the nature of impacts (permanent, temporary, conversion) associated with different state-mapped and non-mapped wetlands by cover class, and further describes the impact type occurring within each wetland (*e.g.*, access road, tree clearing Type I [with stump removal/ground disturbance] or Type II [without stump removal/ground disturbance], array area). Permanent impacts include any form of disturbance that would result in complete loss of wetland acreage and associated function and value. These impacts include rough grading, the installation of permanent access roads, culverts and associated rip-rap spillways, and concrete pads as foundations (*see* App. Ex. 22 Update at tbl.22-11). These components are considered prohibitive in that they are considered 'fill' and do not afford the opportunity for these areas to persist as wetlands, whether through active restoration or natural succession. For purposes of the Application Update, Type I Tree Clearing was calculated as a permanent impact, because of the need to remove trees as well as stumps with mechanized equipment as not to impact Project Components (*id*. at 77). However, where Type I Tree Clearing occurs within a PFO wetland, and the only co-located component is a solar array, buried collection lines, or other temporary features, it is important to note that these areas will be restored and continue to function as a wetland, albeit as a different cover class (PEM), for the life of the Project (*id*. at 92).

Of the 10.72 acres of permanent impacts to non-mapped wetlands, 9.77 acres is associated with Type I Tree Clearing required to site solar array, no other 'fill' activities are associated with this activity, and the areas beneath the array will be restored and maintained as PEM wetlands.

Temporary impacts include any form of disturbance that will be restored to their preconstruction condition (or better), which will retain wetland acreage and, ultimately, all wetland functions and benefits. These impacts include placement of Project Components such as collection line trenching, temporary access roads, temporary laydown yards, and solar arrays and fencing installed via driven posts. Where Project Components (*e.g.*, solar array, fencing, and Type II tree clearing ("lop and drop", stumps remain) are proposed within a PFO or palustrine scrub-shrub ("PSS") wetland, these impacts are calculated as conversion impacts. Conversion impacts are a type of permanent impact associated directly with changing the vegetative cover class of the wetland, but where the wetland will retain most, if not all, of the functions and benefits provided before construction of the Project. These areas are associated primarily with Type I tree clearing in order to properly site a solar array in PEM wetlands, and Type II tree clearing (*e.g.*, cutting down tree but leavings stumps in place and therefore not requiring ground disturbance) required to minimize the effect of shading to surrounding arrays.

Conversion impacts primarily affect PFO wetlands in the form of Type II tree clearing which is required to prevent shading of surrounding areas of arrays proposed within certain distances of existing forested areas. Generally, if a solar array is located within a distance of approximately 1.5-times of a tree's height, there is a significant

potential for shading from those trees to negatively impact the generating efficiency of the solar arrays. Therefore, trees must be cut down to eliminate this potential for shading. However, instead of removing the stumps and create unnecessary ground disturbance, the trees are cut to a height of approximately 6 inches above existing ground elevations. Following tree clearing, these areas will be restored and allowed to persist as wet meadow or scrub-shrub wetland for the life of the Project. This status as neither temporary nor permanent impact stems from the fact that the duration of impact falls between the two, being too long to constitute a temporary impact, but too short to be thought of as permanent that will alter wetland functions (App. Ex. 22 Update at 11).

Q. Based on the nature of impact, as described above, has the Applicant calculated the total acreage of proposed permanent, temporary, and conversion impacts to state-mapped, their adjacent areas, and non-mapped wetlands?

A. Yes. Based on the Updated Project Layout, the Applicant has calculated the total impacts to state-mapped and non-mapped wetlands, as presented in Exhibit 22 of the Update to the Application. State-mapped wetlands C-33, V-19, V-20, and W-1 are subject to permanent, temporary and conversion impacts totaling only 0.5 acres. Of the 0.5 acres of proposed impacts to state-mapped wetlands, only 0.27 acres are due to proposed permanent impacts, of which 0.22 acres are subject to Type I tree clearing conversion and are not subject to any other 'fill' activity or permanent Project Component. The remaining 0.23 acres of proposed impacts to state-mapped wetlands are due to 0.01 acres of temporary impacts resulting from the installation of buried collection lines and temporary access roads, and 0.12 acres of conversion impacts, all of which are due to Type II Tree Clearing required to minimize shading of the array. Impacts associated with

this conversion of forest are temporary, owing to the temporary nature of the assumed 30-year operational period of the Garnet Energy Center, and will be restored and allowed to persist as wet meadow or scrub-shrub wetland for the life of the Project. Where impacts are proposed as a result of Type I or II tree clearing, we respectfully submit that impacts should be considered conversion because the wetlands will be allowed to persist as wet meadow or scrub-shrub wetland for the life of the Project.

The adjacent areas of state-mapped wetlands C-33, V-19, V-20, M-4, and W-1 are subject to permanent, temporary and conversion impacts totaling approximately 10.47 acres. Of the 10.47 acres of proposed impacts to the adjacent area of state-mapped wetlands, only approximately 3.0 acres are due to proposed permanent impacts, of which 2.75 acres are subject only to Type I tree clearing and no other 'fill' activity or permanent Project Component. The remaining adjacent area will be subject to 0.59 acres of temporary impacts associated with temporary access roads and collection line installation and 1.56 acres of conversion impacts associated primarily with Type II tree clearing occurring within the adjacent area of forested adjacent areas to prevent shading of the solar array. The remaining 5.30 acres of proposed impacts to state-mapped wetlands' adjacent areas are temporary and are associated only with the Projects LOD and no installation of Project Components.

Non-mapped wetlands are subject to permanent, temporary, and conversion impacts totaling 29.75 acres. Of the proposed permanent impacts, 9.77 acres are due to Type I tree clearing conversion for the siting of solar arrays, no other 'fill' activities are associated with this activity, and the areas beneath the arrays will be restored and maintained as PEM wetlands. Only 0.95 acres of permanent impacts are due to 'fill'

activities or permanent Project Components. The remaining impacts to non-mapped wetlands are due to 6.21 acres of conversion associated with Type II tree clearing and 2.0 acres of temporary impacts associated with installation of temporary access roads and collection lines and an additional 10.82 acres of temporary impacts associated only with the Projects LOD and no other Project Component.

These impacts to state-mapped and non-mapped wetlands are summarized in the Table below:

Regulated Feature	Impact Type					Total Impacts (Acres)
	Permanent (Acres)		Conversion (Acres)	Temporary (Acres)		
	Permanent 'Fill' Activity	Type I Tree Clearing	Type II Tree Clearing, Siting of Solar Array in PEM Wetlands, Perimeter Fence	Temporary Access Roads, Collection Line Installation	LOD Only	
DEC-Mapped Wetland	0.05	0.22	0.12	-	0.11	0.5
DEC-Mapped Wetland Adjacent Area	0.27	2.75	1.56	0.59	5.30	10.47
Non-mapped Wetland	0.95	9.77	6.21	2.00	10.82	29.75

Q. How will the conversion and Type I tree clearing (permanent) impacts to state-mapped and non-mapped wetlands impact the functions and values of these wetlands?

A. Where proposed, conversion impacts will result in the modest, inconsequential reduction of the wetland's existing functions and values, as determined by the wetland functions and values assessments conducted by TRC (*see* App. App'x 22-5), and as detailed in the

Wetland Delineation Report (*see* App. App'x 22-4) and Exhibit 22. This Wetland Functions and Values Assessment was not addressed by the DEC staff witnesses. As proposed, the Project will have a minimal amount of conversion impacts to state-mapped wetlands. State-mapped Class II wetlands C-33, V-20, W-1, and M-4 and Class III wetland V-19 are subject to conversion impacts totaling 1.68 acres (including adjacent area impacts) out of the 613.5 acres of these mapped wetlands delineated within the Project Area. As described these conversion impacts are primarily the result of Type II tree clearing to prevent shading of the array. As noted above, post construction, these wetlands will retain a suite of wetland functions and values such as groundwater recharge or discharge, flood-flow alteration, sediment/toxicant/pathogen retentions, and nutrient removal/retention/transformation and the ability to provide wildlife habitat. These functions and values provide the benefits the DEC staff witnesses cite in combating the effects of climate change (DEC staff Wetlands Testimony, p. 17, ll. 11–17).

Non-mapped wetlands W-JJB-8, W-BTF-1, W-BTF-17, W-JJB-1, and W-JJB-6 will be subject to conversion totaling 6.21 acres, the majority of which are caused by Type II tree clearing in non-mapped PFO wetlands to prevent shading of the array. Additionally, non-mapped PFO wetlands W-BTF-1, W-BTF-17, W-JJB-6, W-JJB-8, W-BTF-15, W-BTF-9, W-JJB-1, will be subject to 6.68 acres of Type I tree clearing for siting of the solar array. Additionally, wetlands PW-26, W-BTF-1, W-BTF-12, W-BTF-14, W-BTF-16, W-JJB-3, W-NSD-18, and W-NSD-5 are subject to 3.09 acres of Type I tree clearing not associated with any permanent Project Component or 'fill' activity. Again, although this is considered a permanent impact due to ground disturbance

associated with removing the trees' stumps, the area beneath the array will be restored and maintained as PEM wetland for the life of the Project.

Conversion typically constitutes changing the land cover type from a higher vegetative class to a lower class (*e.g.*, forested to herbaceous or scrub-shrub, or scrub-shrub to herbaceous) through clearing of woody vegetation associated with panel installation to eliminate the potential of shading effects caused by vegetation adjacent to Project Components. Based on the functions and values assessment performed (App. App'x 22-5), the mapped and non-mapped wetlands for which conversion is proposed displayed the ability to provide the functions of groundwater recharge or discharge, flood-flow alteration, sediment/toxicant/pathogen retentions, and nutrient removal/retention/transformation. While many of the wetlands displayed the ability to provide wildlife habitat, none were recorded to provide value to threatened or endangered ("T&E") species, which is consistent with other T&E studies performed by the Applicant and by DEC staff (Direct Testimony of Brianna Denoncour ("DEC staff T&E Testimony"), p. 3, ll. 15–16) regarding T&E species habitat within the Project Area.

Accordingly, vegetation clearing for the elimination of shading effects or siting of solar array will not significantly adversely affect the primary wetland functions currently being provided by these wetlands. Conversion can include landcover conversion from PFO to structurally diverse PEM or PSS communities outside of the limits of the solar array, and functional PEM communities beneath and between solar panels. It has been demonstrated that revegetation beneath PV arrays is not only possible but can provide ground cover to control erosion and afford wildlife habitat (Beatty, Macknick, Mccall, Braus, & Buckner, 2017). These studies showed that the effects of shading did not limit

the establishment of both warm- and cool-season grasses, regardless of shade-tolerance. Initial case studies investigating the secondary effects of solar project development of four commercial solar arrays in Vermont also did not find any consistent evidence of the impacts to soils, hydrology, or vegetation as a result of solar array siting in wet meadow sites (Crary, 2015). Where conversion alter the existing functions provided by the PFO wetlands identified, these wetlands would continue to provide similar functions as existing PEM wetlands located within the Project Area, including groundwater recharge or discharge, flood-flow alteration, sediment/toxicant/pathogen retentions, and nutrient removal /retention/transformation, values and function that help combat the effects of climate change. Furthermore, such a small percentage of land undergoing vegetation clearing spaced out over a 2,288.7-acre Project Area will not significantly adversely affect wetland functions within the Project Area. Conversion can enhance vegetative community diversity through the creation of additional wet-meadow environment. That there currently exists substantial forested wetland on site and in the vicinity, yet limited wet meadow environment, is a deficiency partially remedied by the Project to the ultimate benefit of those species that prefer early successional habitat, including many pollinator species (App. Ex. 22 Update at 92). Following construction, the Applicant will use herbaceous seed mixes to establish a stabilized vegetative ground cover. These grass seed mixes are comprised of grasses that are native and/or naturalized to the area and are considered favorable for wildlife habitat and sustainable growth (App. Ex. 22 Update at 16).

Q. Please describe additional measures to be used by the Applicant that avoid and/or minimize impacts to wetlands during construction and operation of the Project.

A. The Applicant has committed to adhere to equipment restrictions, herbicide use restrictions, and erosion and sedimentation control measures around wetlands in accordance with the proposed Certificate Conditions (*see* Certificate Conditions 106–140). Environmental compliance and monitoring programs will be implemented during Project construction to ensure adherence to all relevant certificate and permit conditions to protect wetlands, streams, and other waterbodies at the construction site (App. Ex. 22 Update at 98; Certificate Condition 88). The programs will include an Environmental Monitor during construction and restoration activities on the Project site, whose duties it will be to oversee compliance or otherwise an ongoing minimization of Project impacts (Certificate Condition 88). Prior to construction, the LOD around all such areas will be clearly defined in plan maps, and physically marked in the field using orange construction fencing or other similar indicators (App. Ex. 22 Update at 98; Certificate Condition 120). Plans to restore all temporary disturbances in regulated areas will be provided to construction personnel so they are familiar with expected management practices and outcomes (App. Ex. 22 Update at 98). The final programs will be submitted in the Compliance Filings (App. Ex. 22 Update at 98; Certificate Conditions 69–76, 80).

Q. Where impacts to wetlands were unavoidable, how has the Applicant demonstrated that siting of Project Components was carefully considered to further minimize the impacts to mapped and non-mapped wetlands?

A. Considering the large amount of land within the Project Area occupied by wetlands (613.50 acres of the available 2,289-acre Project Area (App. Ex. 22 Update at 91)), minimal impacts to all wetlands have been achieved both by siting Project Components

beyond state-mapped wetlands, their 100-foot adjacent areas, beyond non-mapped wetlands to the maximum extent practicable, and by proposing trenchless installation methods such as horizontal directional drilling ("HDD") to prevent disturbance that would have otherwise been unavoidable. Furthermore, within state-mapped and non-mapped wetlands the Applicant has limited the placement of fill and siting of Project Components such as permanent access roads and concrete pads that would permanently prohibit the potential for wetland areas to return to a natural state (*see id*.). Siting of Project Components such as access roads have been limited to the narrowest section of the wetland to minimize impacts to the maximum extent practicable (*id*.). Furthermore, where available, existing crossings will be improved and utilized rather than creating additional crossings (*id*. at 95). Permanent access roads have been sited in wetlands only where required to access isolated areas of the proposed solar arrays. Linear Project Components such as access roads and collector lines have been co-located to further avoid and minimize impacts (*id*. at 15). In areas where trenchless installation methods are not planned to install collector lines, they are sited amongst solar panel areas, within the shoulder of existing roadways (within the public right-of-way), or in areas where disturbance due to Type I tree clearing, or grading is already required for the installation of access roads (*id*. at 91).

Q. Will the Applicant be improving the previously disturbed areas where Project Components will be placed?

A. Yes, after construction these areas will be reseeded with a native or naturalized seed mix and maintained and will no longer have pesticides applied to them (*id*. at 80). Similarly

farming activities in these areas will cease, allowing wetland functions and benefits that have been absent for decades to be restored over the life of the Project (*id*. at 1).

Q. Please address DEC staff witnesses' testimony regarding the exploration of additional avoidance and minimization of impacts to wetlands (DEC staff's Wetlands Testimony, p. 17, ll. 3–7).

A. The DEC staff witnesses generally state that the Applicant should explore additional opportunities for minimizing impacts by using boring or HDD under wetlands (DEC staff Wetlands Testimony, p. 17, ll. 3–5). However, they fail to identify any specific location. Certificate Condition 131, provides that "HDD will be used for collection line installation under streams and wetlands (where practicable) to avoid impacts on water quality, habitat, and stream bed stability." DEC staff did not except to this portion of Condition 131 (*see* Garnet – Final Settlement Package at 120). Certificate Condition 117 also requires the Applicant to consider trenchless methods for installing buried cables through wetlands where practicable. Final details of collection line trench installations and designated areas for staging, construction machinery arrangements, and bore pits will be provided in the final design drawing (*see* Certificate Condition 117). Trenchless methods are not a panacea for all crossings. There are feasibility constraints due to ground composition, obtaining the appropriate radius, and other related issues that must be considered. The Project proposes trenchless crossings where feasible and practicable. Additionally, where collection lines are co-located with the other Project Components such as permanent access roads, trenched installation of collector lines are proposed to further reduce the risk of inadvertent returns and/or spills. All practicable measures will be taken by the Applicant to avoid and minimize any impacts to surface waters through

the measures adopted in the Project's SWPPP and Spill Prevention, Containment, and Control Plan (*see* Certificate Conditions 80, 109).

Q. In conclusion, does the Project satisfy the weighing standards in 663.5 and the balancing criteria in PSL 168(3)(c), thereby allowing the Board to certify the Project without requiring the creation of new wetlands as mitigation?

A. Yes. There are two paths forward to certifying the Project and allowing it to be built economically.

(1): The Siting Board can find that the non-mapped wetlands are not regulated under the DEC regulations contained in 6 NYCRR Parts 663 and 664. The Siting Board would then apply the PSL §§ 168(3)(c), 168(4)(a)–(c), (e), (g) balancing tests; find that Project benefits overwhelmingly outweigh Project impacts; determine that impacts have been avoided or minimized to the maximum extent practicable and that the Project can actually improve and restore the condition of the degraded, non-mapped wetlands by applying the minimization/restoration measures that the Siting Board adopted in at least three Article 10 proceedings and are supported by the DEC and DPS staffs in three Article 10 proceedings. The agency staffs agreed in those proceedings that the measures would "result in the enhancement of the adjacent areas and will not negatively affect the wetlands."[17] Project benefits include: consistency with the State Energy Plan, Clean Energy Standard, CLCPA, the RGGI (App. Ex. 10); the displacement of 71,680 tons of CO_2 annually (App. Ex. 8 at 2); the creation of approximately 227.9 full-time equivalent ("FTE") construction jobs; the direct local expenditure of $30,952,445 during

[17] Excelsior Order App'x B, § B.17.d.v.a; Trelina Order, App'x B, § B.17.d.v.a.; East Point Order, App'x B, § B.15.d.v.

construction; an estimated $33 million of total payments from Payment in Lieu of Taxes ("PILOT") and Host Community Benefit Agreements ("HCBA") to Cayuga County, the Town, and local schools; and additional income for participating property owners (App. Ex. 27 at 8, 10, 13, 19). Lastly, the Siting Board can consider the mitigation activities that are anticipated to be required under Section 404 of the CWA and through the Siting Board's § 401 certification. Accordingly, the Siting Board can find that the creation of new wetlands by the Applicant would not be necessary or required.

(2): In the alternative, the Siting Board can find that the DEC regulations do apply to the non-mapped wetlands, but after applying the compatibility tests and/or weighing standards in the regulations, again find that the Project avoided or minimized impacts, that the Project satisfies the pressing economic or social needs that have gone unchallenged in this proceeding and have been endorsed by DPS staff and, therefore, can be approved without the creation of new wetlands, other than the mitigation plan for impacts to wetlands regulated under Section 404 of the CWA. The DEC regulations do not require creating wetlands as mitigation (*see* ECL § 663.5(g)(1)).

If additional mitigation is ordered by the Board, beyond the Mitigation Plan already addressed in Certificate Conditions 121–122 that employs restoration as a means of mitigation per the DEC Mitigation Guide, and beyond the USACE mitigation we expect will be imposed, then any additional mitigation should be limited to the permanent impacts within the 10.96 acres of mapped wetlands, and their adjacent areas that are impacted, equating to 3.28 acres, and costing $287,738 as presented in Exhibit GRP-2 under the heading "Estimated Mitigation Costs per DEC Mapped Freshwater Wetlands and Adjacent Areas". Exhibit GRP-2 summarizes the range of mitigation

recommendations in this proceeding. Based on the mitigation we expect to be imposed by the USACE, we estimate a mitigation cost of $2,191,187 for 21.91 acres of mitigation. If additional mitigation is ordered by the Siting Board, it should be limited to only the permanent impacts to state-mapped wetlands, and their adjacent areas as presented herein, and not based on the DEC's unsupported calculation of impacts resulting in a mitigation acreage of 51.36 acres and costing approximately $5,136,000. Temporary impacts and conversion should, therefore, not be included in any mitigation requirement for the reasons explained herein.

Rural Preservation and Net Conservation Benefit Coalition Avian Panel

Q. Did the Garnet Rebuttal Panel rely on any academic references in preparing this Rebuttal Testimony to address the RPNCBC Avian Panel Direct Testimony?

A. Yes, they are listed in Exhibit GRP-11 to this Rebuttal Testimony.

Q. Do you agree with the RPNCBC Avian Panel testimony that states Garnet "poses a substantial adverse risk of impact to birds" through habitat destruction and degradation (RPNCBC Avian Panel Testimony, p. 12, ll. 9–10)?

A. No. The LOD for the Project Area consists primarily of large monocultures of row crops such as corn and soybeans (App. Ex. 4 at fig.4-6). In fact, according to the USDA Cropland Data Layer data, row crops account for approximately 82% of the available open habitat (*i.e.*, grassland, hay, pasture, row crop, etc.) within the Project Area. This type of intensive agriculture provides extremely low-quality habitat for birds and other wildlife due to chemical inputs; lack of heterogeneity in vegetation structure and composition; and direct mortality from mowing, tilling, and harvesting activities. (Stanton et al. 2018). Regardless of the construction of the Project, habitat within the

Project Area has already been degraded, fragmented, and destroyed by historical conversion to intensive agriculture, reflecting broad-scale trends in agricultural land use that have been linked to precipitous declines in grassland bird populations throughout the eastern United States (Askins et al. 2007, Stanton et al. 2018).

Testimony provided by the RPNCBC Avian Panel also states that "[w]ith the removal of vegetation to accommodate solar panels, wildlife lose forage, cover, and breeding sites" (RPNCBC Avian Panel Testimony, p. 12, ll. 11–12). This statement ignores the actual Project site conditions. As stated above, the Project consists primarily of corn and soybean fields, which do not provide adequate forage, cover, or breeding sites for most avian species due to their simplistic monoculture vegetative structure, intensive weed and/or shrub management, and tillage and/or harvest operations that tend to create ecological traps for nesting birds (VanBeek et al. 2014).

Furthermore, multiple studies have found that solar panels add structural complexity to the landscape and create microhabitats that act as refugia, artificial nest sites, and perching locations. On-site vegetation can also be managed to provide habitat for pollinator insects, thus increasing prey availability for avian visitors. As stated in the Preliminary Operations and Maintenance Plan (App. App'x 5-3 at 7) and Application Exhibit 22 Terrestrial Ecology and Wetlands, a native or naturalized seed mix will be planted throughout the site, including under the arrays, and vegetation will be allowed to grow up to 18 to 24 inches before mowing (App. Ex. 5, at 12). In between periodic mowing, vegetated areas around panel arrays will provide forage, cover, and breeding habitat for various avian species within the Project Area.

Q. Please address the RPNCBC Avian Panel's assertion that perimeter fencing associated with USSE facilities results in habitat fragmentation for volant and non-volant wildlife species (RPNCBC Avian Panel Testimony, p. 12, ll. 15–16).

A. Fencing is primarily proposed in discrete blocks, forming a perimeter around panel arrays that are primarily located in agricultural fields throughout the Project Area. TNC Resiliency Data was reviewed to evaluate the level of existing connectivity of wildlife habitat within the Project Area. Much of the Project Area contains open habitat, which provides below-average or limited-natural flow of animal movements (App. Ex. 22 Update at fig.22-6). Some areas containing forestland provide above-average connectivity to support movement of local animal populations. A large, undisturbed tract of forested habitat is in the central portion of the Project Area between Slayton Road and Cooper Street (*id.*).

This is contiguous with forested habitat that extends off site to the southwest, southeast, and northwest. The Project layout, therefore, maintains connectivity to allow for uninhibited movement through these large, forested blocks both north-south and east-west.

In essence, this 6-inch gap will allow most local fauna to migrate above, through, or under the proposed fences except for larger species, such as the white-tailed deer (*Odocoileus virginiana*) and coyote (*Canis latrans*). Perimeter fencing, as proposed, is primarily sited within areas of low existing connectivity and flow, and therefore, is likely to have little impact on the movements of wildlife within the Project Area and wildlife habitat nearby (App. Ex. Update 22 at 34).

Q. Do you agree with the RPNCBC Avian Panel that avian mortality estimates derived from solar projects in California can be used to accurately predict mortality at solar projects in New York?

A. No. Comparing New York and California at a site-specific level is comparing apples and oranges. California differs significantly from New York in terms of environmental conditions, available habitats, and avian communities; and as such, results in California are not applicable to a project located in New York.

Throughout its testimony, the RPNCBC Avian Panel inappropriately assumes ecological similarities between New York and California. As referenced in the RPNCBC Avian Panel testimony, the projects for which avian mortality was studied in California were located within a desert environment (RPNCBC Avian Panel Testimony, p. 19, l. 2). Cameron et al. (2012) suggests that industrial land use planning in desert ecosystems requires special consideration because the "low productivity of the desert leads to a slow pace of soil development, plant growth, and ecological succession, and that renders it slow to recover from disturbances." The Project, by contrast, is located within the Ontario Lowlands ecoregion of New York State, an area with a humid, continental climate, moderate temperatures, and a long growing season that once supported extensive deciduous forest cover and lends itself to high agricultural productivity (Bryce et al. 2010). Given the current lack of comparable studies from the Northeastern United States, the suggestion that avian interactions with solar facility components within a temperate ecosystem will be indistinguishable from that of a desert environment is an unsubstantiated assumption.

The RPNCBC Avian Panel also incorrectly posits that "[b]irds vulnerable to the 'lake effect' would be just as vulnerable to it in New York as in California" (RPNCBC Avian Panel Testimony, p. 14, ll. 15–16). The "lake-effect" is the phenomenon in which birds in flight effectively confuse solar panel arrays as a body of water and attempt to land on them, resulting in collision injury or mortality. Several issues exist with the concept of "lake effect". First, evidence of "lake-effect" is largely anecdotal and has not been thoroughly investigated from a scientific perspective. Second, the RPNCBC Avian Panel's claim that assumptions about avian behavior and mortality arising from "lake effect" from solar facilities in California can be directly applied to solar facilities in New York fails to acknowledge the importance of regional context and the relationship between habitat availability and habitat selection (Jones 2001).

While innate or instinctual behaviors may be evolutionarily stable, behavioral adjustments are considerably more adaptable. The projects referenced by RPNCBC Avian Panel in its testimony were sited in a desert environment, where lakes and other waterbodies are scarce and in high demand by wildlife (RPNCBC Avian Panel Testimony, p. 19, l. 2). In New York, freshwater habitats, including areas of open water, are generally abundant and widely available. Therefore, water-obligate species flying overhead in search of suitable habitat would be much more susceptible to the "lake effect" in California than in New York.

The Project only contains 0.29 acres of open water habitat (*see* App. Ex. 22 at 8), which has likely resulted in minimal historical use of water-obligate species most susceptible to the "lake effect". The Project is also surrounded by multiple lakes, ponds, and rivers including Duck Lake, Parker Pond, Otter Lake, Cross Lake, and the Seneca

River (App. Ex. 4 at 38). Additionally, the Montezuma National Wildlife Refuge ("NWR") is located southwest of the Project Area and serves as a mecca for water-obligate species in the region. The abundance of available, open water habitat in the immediate vicinity of the Project makes any potential impacts from the "lake effect" minimal, at most and likely theoretical.

Q. Do you agree with the RPNCBC Avian Panel where they state that "Garnet Solar's preapplication study is flawed and substantially underestimates the risks to waterfowl, grassland birds, and raptors", (RPNCBC Avian Panel Testimony, p. 15, ll. 6–7) and that the range of mortality estimates cited by Application Exhibit 22 are too low (RPNCBC Avian Panel Testimony, p. 15, l. 16)?

A. No. All pre-application grassland breeding bird and wintering grassland raptor surveys were performed in compliance with protocols established by DEC (Ex. GRP-12 and GRP-13, respectively) in place at the time of survey, as required. Prior to these surveys commencing, going beyond the protocols, site-specific study plans were developed based on topographic and habitat conditions observed on site. These study plans are reviewed and are finalized in coordination with DEC and take into account input provided by their biologist. These surveys meet or exceed the Applicant's requirements under Article 10 procedure (*see* 16 NYCRR § 1001.22(d)(e)) and have been accepted by the Siting Board in past cases. The Chair of the Siting Board did not identify any deficiency with the surveys during the filing compliance review of the Application. DEC's acceptance of the Applicant's final reports for each of these surveys also recognizes that all survey and reporting requirements were met and performed in accordance with established protocol.

The methodology required within these protocols is derived from widely accepted surveying methods. A primary example is the 5-minute point count method employed during grassland breeding bird surveys, as described herein and within Ralph et al. (1995), Bonthoux and Balent (2010), and Savard and Hooper (1995). If the RPNCBC Avian Impact Panel believes that this method is flawed, then this should be addressed generically with the DEC and the rest of the avian ecological community, instead of the Applicant in an Article 10 proceeding. The Project should not be held to a different standard than any other solar project in New York State.

Q. Please address the estimates of avian mortality presented in the Article 10 Application.

A. The estimates of mortality at PV solar facilities, 2.49 birds/MW/year (Kosciuch et al. 2021) to 9.9 birds/MW/year (Walston et al. 2016), as presented in Application Exhibit 22 (App. Ex. 22 at 51), are well-accepted, cited estimates used to predict the risks to avian species associated with solar facilities.

The RPNCBC Avian Panel acknowledges in its own testimony that "[t]his principal was not lost on Garnet Solar's pre-application documentation, which cited Walston et al. (2016) and Kosciuch et al. (2020) [sic] for **plausible range** of mortality that could be caused by Garnet Solar" (RPNCBC Avian Panel Testimony, p. 14, ll. 6–9) (emphasis added). To say that "the range of mortality estimates cited by Exhibit 22 is too low" (RPNCBC Avian Panel Testimony, p. 15, l. 16) and then acknowledge that the ranges presented and supported by Kosciuch (2021) and Walston et al. (2016) are a "plausible range" is contradictory. If anything, the 9.9 birds/MW/year estimate cited by the Applicant may overstate Project-related mortality, as some of the events recorded by this study could not be directly attributable to collision with facility infrastructure based

on the type of USSE sites selected and the method of producing this estimate. The Garnet solar panels, energy storage system, and collection substation are stationary and will not impact wildlife due to their operation. Vehicles will visit the site infrequently and will stay on the access roads. Therefore, there will be little opportunity to impact wildlife by driving on the site. During the operational phase of the Project, therefore, disturbance will be very limited and displacement impacts are likely to be negligible. Routine maintenance, including mowing the grass, will occur approximately two to six times a year depending on seasonal conditions (App. Ex. 22 Update at 55). Most wildlife that will be within the fenced areas of the Project are mobile enough to avoid being impacted due to that activity.

Walston, 2016 presents avian mortality estimates from systematic surveys conducted at three USSE facilities, including a recent 250-MW PV site, one Concentrated Solar Power ("CSP") project from 1982, and a second 377-MW CSP project that was recently constructed at the time of the study. Each of these solar facilities pose different threats to avian populations. CSP sites use mirrors to reflect and concentrate sunlight to a receiver located on a collection tower to be converted to electricity. Concentrated beams of redirected sunlight, or flux, can kill, singe flight feathers, or otherwise negatively affect birds that come into contact with flux. In this manner, CSP sites pose an active, unique, distinct, perpetual threat to avian individuals, a threat that cannot be associated with the Project. The most significant risk posed by PV sites (like the Project) during project operation are collision related. Walston, 2016 presents the results of the studies performed in three ways: (1) mortality rate for known site-related factors (*e.g.*, collision trauma); (2) mortality rate based on carcasses found on site that did not show observable

site-related causes of death; and (3) a (computed) total potential site-wide mortality rate, which is the sum of the known and unknown mortality rates. The mortality rate for known USSE-related fatalities occurring at one 250-MW PV site was only 0.5 annual bird deaths per MW of capacity, compared to the CSP project rates of 10.24 and 3.96 annual bird deaths per MW of capacity. The rate for unknown fatalities at the PV site was 10.20 annual bird deaths per MW of capacity; however, Walston acknowledges that "birds with an unknown cause of death may have died due to natural causes (*i.e.*, predation or disease) and may not be attributed to the solar facility." The 9.9 birds/MW/year estimate represents the calculated capacity-weighted average mortality rate of known and unknown USSE-related facilities, which includes the exceedingly higher mortality rates from both CSP projects.

Further, it is important to recognize that the entire point of the Walston study was to put a scale to mortality rates for multiple sources. Overall, USSE facilities account for less than 1% of avian mortality from anthropogenic sources (Walston et al., 2016). Walston et al. (2016) estimated bird mortality from solar facilities in comparison to other anthropogenic sources of bird mortality. The table from this study is shown below and is also presented in Application Exhibit 22 Update as Table 22-10:

Table 22-10. Estimated Annual Avian Mortality from Anthropogenic Sources in the U.S.

Mortality Source	Estimated Annual Mortality	Percent of Overall Mortality
Buildings and Windows	365–988 million	73–75%
Roadway Vehicles	89–340 million	20–25%
Fossil Fuel Power Plants	14.5 million	1–3%
Communication Towers	4.5–6.8 million	<1%
Wind Energy Developments	140,000–573,000	<1%
Utility Scale Solar Energy Developments	37,800–138,600	<1%

As shown by this table, the avian mortality at USSE facilities accounts for fewer than 1% of avian mortality and is insignificant when compared to other anthropogenic sources. Solar facilities primarily affect birds at the local scale and not at the population level (Sánchez-Zapata et al., 2016). However, even effects to local populations are minimal at PV solar facilities (Walston et al. 2016).

Q. Do you agree with the avian mortality estimates asserted by the RPNCBC Avian Panel over the life of the Project (RPNCBC Avian Panel Testimony, p. 18, l. 23; p. 54, l. 20)?

A. No. As stated above, the RPNCBC Avian Panel strictly cites projects from deserts in California for these calculations, making them inherently inapplicable to Garnet and inaccurate, because as previously stated, the likelihood for birds to be attracted to a solar facility is context dependent. Further, the variables used in the RPNCBC Avian Panel's formula to calculate overall bird fatalities are flawed and highly inaccurate. In the calculations provided by the RPNCBC Avian Panel, it is stated that the Project's "26.7

miles (43 km) of collector lines, would be predicted to annually kill 4,866 birds" (RPNCBC Avian Panel Testimony, p. 18, ll. 14–15).

The RPNCBC Avian Panel, however, incorrectly assumes that the Project's collection lines are overhead, and therefore, would contribute to bird fatalities in this calculation. But all collection lines for the Project will be installed underground and there is no potential for collection lines to be a source of collisions. In total, the RPNCBC Avian Panel's overhead collection mortality estimates accounted for a 63.9% over-estimate of avian mortalities from bird collisions throughout the life of the Project.

Even if the RPNCBC Avian Panel's calculations and estimates are assumed to be accurate, the Project does not pose a threat to the overall population of birds in New York, especially considering that at least a portion of this mortality would not be additive and would instead be compensatory, for mortalities that would have occurred regardless of the Project. Compensatory mortality is largely taken into consideration when establishing hunting regulations and bag limits, with widely known studies conducted on mallard (*Anas platyrhynchos*) populations (Burham and Anderson, 1984). Compensatory mortality occurs when mortality increases from one source (*e.g.*, hunting), and as a result, decreases from other sources (*e.g.*, starvation). Net mortality should be the primary consideration to ensure that other factors, such as compensatory mortality, are considered when applying this approach to solar facilities. Even if the RPNCBC's estimates were assumed to be representative of gross mortality over the life of the Project, they do not represent a reliable or realistic estimate of total individuals removed from New York's population as mortalities in the surrounding area from natural factors, such as depredation and starvation, would likely decrease as a result of a corresponding increase in resource

availability surrounding the Project Area. The Project, therefore, would not pose a threat to New York's overall bird population, especially when considering other anthropogenic sources (*see* App. Ex. 22 Update at tbl.22-10).

The RPNCBC Avian Panel further asserts that bird mortalities also would occur as a result of habitat loss caused by the Project (RPNCBC Avian Panel Testimony, p. 54, ll. 7–22). Similar to their previous estimate, the calculations used to produce this estimate are flawed from the start. The two references used by the RPNCBC Avian Panel to create an average of 34.3 nests (*see* Young 1948; Yahner 1982) were both flawed and were performed in habitats incomparable to the Project Area.

Their assumption of 34.3 nests per acre for an active row crop agricultural field is a drastic overestimate according to more recent studies of avian nesting behavior, which estimates nest densities at 0.0065 nests per acre in tilled soybean fields (VanBeek et al. 2014). The study used by the RPNCBC Avian Panel to develop the nesting densities utilized in its formula (Young 1948) was a study performed in a "five-acre park" comprised primarily of a mowed lawn blue grass (*Poa* spp.) and arbor vitae (*Thuja occidentalis*), and in no way provides an accurate representation of the habitat types within the Project Area. Additionally, scaling a 5-acre sample size to the Project's LOD, which is 1,054.1 acres, there is a significant mathematical error.

Yahner (1982) estimates nest densities in shrubby or wooded farmland shelterbelts which, again, are not representative of the nest densities found in the kinds of row crops present within the Project Area.

A much more recent study of avian nesting in corn and soybean fields (the primary land cover within the Project Area) reported nest densities of 1.6 nests per 100

hectares, or 0.065 nests per acre in tilled soybean fields (VanBeek et al. 2014). A nest density of 0.065 nests per acre is a 52,670% decrease from the 34.3 nests per acre used by the RPNCBC Avian Panel (RPNCBC Avian Panel Testimony, p. 54, ll. 11–22). This 34.3 nests per acre estimate is the basis for the RPNCBC Avian Panel's calculation, which resulted in a gross bird mortality overestimation (*see* RPNCBC Avian Panel Testimony, p. 54, l. 20). The calculation is entirely without merit and should not be applied to Garnet, or any other project for which the existing habitat is comprised of row-crop agricultural fields.

Q. Please address the RPNCBC Avian Panel's argument that because their calculation estimates were based on the desert environment of southwestern California, that mortality rates in New York would likely be higher (RPNCBC Avian Panel Testimony, p. 19, l. 2).

A. This assertion is an unrealistic generalization of the overall higher primary productivity and avian diversity present across New York and the northeast region, without considering the finer scale context of the Project, while also underestimating the high conservation value of the desert environments of southwestern California.

The Mojave Desert Ecoregion, an area to which many of these California solar projects belong, is notable for its biodiversity and extremely high endemism, with some of the highest diversity in shrubland plant species in North America and nearly 29 species and subspecies listed as T&E (Cameron et al. 2012; Smith and Dwyer 2016). Decades of research have demonstrated the negative impacts of intensive row crop agriculture on biodiversity, from soil and plant communities to birds and other wildlife (Hendershot et al. 2020; Stanton et al. 2018; Karp et al. 2012). The Project Area is dominated by an intensive row crop monoculture—a true ecological desert.

Q. Please address the RPNCBC Avian Panel's assertion that mortality resulting from the Project would include "multiple New York TE species" (RPNCBC Avian Panel Testimony, p. 19, l. 4).

A. The RPNCBC Avian Panel lists multiple species that are, in fact, not New York threatened or endangered (RPNCBC Avian Panel Testimony, p. 19, ll. 4–9). Species incorrectly included under the T&E label by RPNCBC include:

- Northern pintail (*Anas acuta*)
- Black-crowned night-heron (*Nycticorax nycticorax*)
- Cooper's hawk (*Accipiter cooperii*)
- Great egret (*Ardea alba*)
- Greater yellowlegs (*Tringa melanoleuca*)
- Vesper sparrow (*Vesper sparrow*)
- Horned lark (*Eremophila alpestris*)
- American kestrel (*Falco sparverius*)
- Savannah sparrow (*Passerculus sandwichensis*)
- Eastern meadowlark (*Sturnella magna*)

Some species included within this list (*e.g.*, black-crowned night-heron) are also unlikely to be present within the Project Area due to lack of suitable habitat within, and immediately adjacent to, the Project. DEC witness Denoncour states in her direct testimony that "[t]he Garnet Energy Center (the Project), as currently proposed, is not anticipated to adversely impact any listed species. Nonetheless, Garnet Energy Center, LLC (Applicant) has agreed to certificate conditions acceptable to the Department that are protective of listed species and meant to prevent species take during construction,

operation, restoration, and maintenance of the Project" (DEC staff T&E Testimony, p. 2, ll. 19–22).

The RPNCBC Avian Panel correctly classifies the listing statuses of the above species on Table 1 (RPNCBC Avian Panel Testimony, p. 20–25). Table 1 includes a list of special status avian species that the RPNCBC Avian Panel believes may be impacted by the Project based on the review of Cornell University's eBird and the iNaturalist online application, and their proximity to the Project Area. The distances required to be included within this table, however, are very loosely defined, likely resulting in over-inclusion of species. For example, "Nearby" defines a species observed within 25 miles of the Project Area, "Very close" defines a species observed within a "few miles", "In Region" defines a species observed "within a few counties", and the Chevron symbol means that a species is a "presumed migrant over the Project Area". On Table 1, 27 bird species are included under the "Nearby" category and an additional 4 species under the "In Region" category, which results in a significantly longer list of species, and unnecessarily includes State-listed species with no relevance to the Project.

Species detected 25 miles or multiple counties away from the Project Area should not be implicated as potentially impacted by the Project. Further, the classification of "presumed migrant over the Project Area" assumes, without any reasonable evidentiary basis, that any species that migrates within a few counties of the Project Area could be impacted. However, it is widely known that many bird species are nocturnal migrants and rely on geomagnetism to navigate their migration route and are less reliant on visual cues. Visual landmarks are only significant in the final stages of migration when birds are homing and targeting specific habitats or locations (Tyagi and Bhardwaj 2021). In

addition, most songbirds migrate at altitudes greater than 500 meters above ground level to take advantage of air currents, and thus, are not at risk for collision with Project Components (Ward et al. 2018).

Q. Do you believe the baseline grassland breeding bird and wintering grassland raptor surveys are adequate in characterizing the T&E avian community within the Project Area?

A. Yes. All breeding bird surveys and wintering grassland raptor surveys were planned, conducted, and reported on in accordance with the site-specific study plans reviewed and agreed to by DEC in place at the time the surveys were performed and as noted above, go beyond the criteria contained in the DEC protocols. These surveys were also planned and reported on in coordination with DEC, and the final report and its attachments were accepted.

Further, the RPNCBC Avian Panel states that these surveys were too focused on detecting T&E and special concern ("SC") species to adequately characterize Project Area use by non-listed avian species (RPNCBC Avian Panel Testimony, p. 28, ll. 11–13). Although DEC protocols are designed to target specific habitat types and times of day for State-listed T&E species, TRC's surveyors record all avian species observed while on site, including non-listed species and/or species not targeted by DEC protocols.

Wintering grassland raptor survey and grassland breeding bird survey locations are situated within agricultural and grassland habitats to target State-listed species such as the northern harrier (*Circus hudsonius*; T) and the short-eared owl (*Asio flammeus*; E) but are also in proximity to other habitat types (*e.g.*, forests) to promote the detection of a variety of species representing multiple habitat types. However, the LOD is primarily

sited within agriculture fields as stated above, and thus, forest-dwelling species will be minimally impacted by the Project.

The RPNCBC Avian Panel also states that 5-minute point counts performed during grassland breeding bird surveys are insufficient to sample the Project Area and that longer duration point counts should be used during an entire year, possibly for several years (RPNCBC Avian Panel Testimony, p. 38, ll. 10–11). Creating extraordinarily costly survey requirements, however, would hinder overall development of solar projects across New York. Solar projects are vital in combating the impacts of climate change, which would have far greater of an impact to T&E and non-listed avian species than any singular solar project, or even collective solar projects across a broader region (Walston et al. 2016; Jarzyna et al. 2016).

As stated above, all avian surveys conducted within the Project Area went above and beyond DEC protocols, and the agreed-upon, site-specific study plans were in place at the time of survey. The objective of the DEC grassland breeding bird survey protocol is not to inventory the entire wildlife community as the RPNCBC Panel advocates, but instead it is to determine the presence and site use of New York State listed grassland breeding bird species, for which the 5-minute point count is effective. The point count protocol provided by the DEC is a widely accepted and standardized methodology for estimating the number of birds in a given area, especially when detecting grassland breeding birds with established territories, which tend to exhibit a predictable suite of behaviors (*e.g.*, males singing) (Ralph et al. 1995). The short length of these point counts is deliberately chosen to prevent violating the assumption that birds are immobile, and do not move during the point count (risking double-counting). The longer the count period,

the greater the potential for a biased estimate of density or other measures of abundance (Scott and Ramsey 1981).

Breeding T&E individuals with established territories are just as likely to be detected within the five minutes of a survey as they are 60 minutes into a survey (Ralph et al. 1995; Savard and Hooper 1995; Bonthoux and Balent 2010). Further, surveys conducted outside of the breeding season (wintering grassland raptor survey) follow a protocol with a minimum 90-minute survey duration to increase the detection probability of highly mobile species not occupying established territories, but instead utilizing a broad geographic area for life behaviors.

Q. Do you agree with the RPNCBC Avian Panel's opinion that Garnet has not proposed an adequate plan to monitor populations of live birds and avian mortality post construction?

A. No, and the RPNCBC Avian Panel's statement that "there is no plan at all to do so" (RPNCBC Avian Panel Testimony, p. 46, l. 8) is completely unfounded because the Applicant has agreed to Post-Construction Avian Monitoring in the Project's Proposed Certificate Conditions (*see* Certificate Condition 105). Per the Certificate Condition language, a Post-Construction Avian Monitoring ("Monitoring Plan") shall be developed in consultation with DEC and a final, DEC-accepted Monitoring Plan will be filed prior to the start of Project operation. The Monitoring Plan shall include breeding and wintering bird surveys, as well as details of the studies (*i.e.*, start and end dates; transect and point count locations; frequency, duration and scope of monitoring; methods for observation surveys; reporting requirements). The Monitoring Plan will be used to gather data regarding use of the Project Area by breeding and wintering birds, including State-

listed species, after construction, and will include at least one multi-season survey during the first three years of Project operation.

Further, per the requirements of Certificate Condition 100, if at any time during operation of the Project, a nest or roost of any federally or State-listed T&E bird species is discovered and confirmed by the Certificate Holder or if any federally or State-listed T&E bird species is observed displaying roosting or breeding behavior for that species within 500 feet of the Project Area (or one-quarter mile for eagles) DEC and DPS Compliance staff will be notified within 24 hours of discovery and prior to any further disturbance around the nest, roost, or area where the species were seen exhibiting any breeding or roosting behavior.

Certificate Condition 102 requires the Applicant to maintain a record of all observations of New York State T&E species for construction, operation, and maintenance of the Project. Additionally, the Applicant must report all observations of T&E species to DEC within seven days of the observation. If any dead, injured, or damaged federally or State-listed T&E species, or their eggs or nests, are discovered any time during the life of the Project within the Project Area, the observations will be reported to DEC and the U.S. Fish and Wildlife Service to arrange for recovery and transfer of the specimen(s) within 24 hours.

Q. Do you agree with the RPNCBC Avian Panel's assertion that nocturnal avian surveys are necessary to characterize the avian community within the Project Area (RPNCBC Avian Panel Testimony, p. 50, l. 2)?

A. No. While recent studies have shown that many North American birds across a variety of taxa vocalize at night (La 2012), the species targeted by the Protocol are either diurnal

species such as Henslow's sparrow (*Ammodramus henslowi*i; T) and northern harrier, or crepuscular (short-eared owl). The grassland breeding bird and winter raptor survey Protocol is designed to target times-of-day of greatest activity for these species during the breeding and wintering seasons. Grassland breeding bird surveys begin 30 minutes before sunset while wintering grassland raptor survey are performed for at least 30 minutes after sunset, and sometimes longer if light conditions provide extended visibility.

There is no evidence to suggest that any of the target species that could be detected through nocturnal surveys would not already be detected by the current Protocol. Furthermore, while nocturnal surveys may be useful for migration studies where a large number of individuals are flying over an area while giving flight calls that can be recorded, or extremely cryptic species that might not be visually detectable, nocturnal vocalizations alone only provide a limited amount of data on the individuals being detected. For instance, a bird detected during a winter raptor survey can be visually observed exhibiting behaviors such as foraging, roosting, or interacting with other individuals and identified to age and sex—data that would be nearly impossible to glean from a nocturnal vocalization.

Moreover, all surveys conducted on the Project Area were performed by trained, qualified biologists specifically for the identification of T&E species. As stated multiple times above, all avian surveys conducted within the Project Area were performed in compliance and coordination with DEC and their protocols.

Q. Do you agree with the conclusions in the Application that the Project is unlikely to impact New York State-listed T&E grassland breeding birds and wintering grassland raptors, and that no further such studies are necessary?

A. Yes. All avian surveys conducted within the Project Area were performed by qualified biologists and complied with DEC protocols in place at the time of survey. In the associated reports, the Applicant specifically states that the Project is unlikely to impact State-listed grassland breeding birds and/or wintering grassland raptors, a conclusion drawn from survey results to which the DEC witness corroborates in direct testimony, stating: "The Department does not have any record of mapped occupied habitat for any listed species within the Project Area" (DEC staff T&E Testimony, p. 3, ll. 15–16). Furthermore, the testimony also states that: "[t]he Proposed Certificate Conditions are intended to protect the Applicant from violating Part 182 and harming a listed species without the appropriate avoidance, minimization, and mitigation measures in place" (DEC staff T&E Testimony, p. 4, ll. 3–5). Further supporting the unlikely impact of the Project on grassland breeding birds, as stated above, minimal (if any) grassland habitat meeting the criteria set forth by the DEC exists within the Project Area, and thus, grassland breeding bird impacts can be anticipated to be minimal due to lack of habitat. Moreover, during grassland breeding bird surveys performed within the Project Area, the only grassland T&E or SC species observed was the horned lark.

These surveys are extensive enough to conclude that the Project Area does not contain habitat that is essential for T&E species to perform life functions. Occupied habitat is defined within 6 NYCRR Part 182 as "a geographic area in New York within which a species listed as endangered or threatened in this Part has been determined by the department to exhibit one or more essential behaviors" (6 NYCRR § 182.2(o)). Essential behaviors are defined as "any of the behaviors exhibited by a species listed as endangered or threatened in this Part that are a part of its normal or traditional life cycle and that are

essential to its survival and perpetuation" (6 NYCRR § 182.2(f)). Essential behaviors consist primarily of "breeding, hibernation, reproduction, feeding, sheltering, migration and overwintering" (6 NYCRR § 182.2(f)). Based on these definitions and the DEC direct testimony confirming that there is no occupied habitat of T&E species within the Project Area, there are no predicted adverse impacts to T&E species as a result of the Project. There is no occupied habitat of T&E species within the Project Area, and no mitigation is required as confirmed by the DEC testimony.

Q. Do you believe that the Project poses a significant threat to the pied-billed grebe, or that a specific pre-construction study for this species is necessary?

A. No. The pied-billed grebe is a habitat specialist and requires "dense stands of deep water emergent vegetation (*e.g.*, cattails) for nesting and cover that are situated close to open water for foraging" (DEC n.d.). No habitat suitable for this species is located within the Project Area. The observations referenced in the RPNCBC Avian Panel's testimony are centered approximately 2.3 miles southwest of the Project Area, with an observation density increasing as distance from the Project Area increases. Additionally, outside of the primary cluster, pied-billed grebe have only been recorded once on the opposite side of the Project Area from the primary observation cluster, which indicates that these individuals are likely not crossing over the Project Area in any notable capacity. This observation of one isolated incident was from 2014, which is more indicative of a one-off observation and does not provide any reliable scientific basis that pied-billed grebe frequent other areas surrounding the Project.

The RPNCBC Avian Panel also states that the pied-billed grebe makes its flights "under the cover of darkness" as a reason for its lack of observation in different areas

surrounding the Project (RPNCBC Avian Panel Testimony, p. 41, l. 1). If this were truly the case, there would still be other observations surrounding the Project in some capacity, but the literal lack of any other observations likely disproves this assertion.

Additionally, as stated above, many avian species that fly at night rely on geomagnetism for navigation, as opposed to visual cues, and thus, the "lake effect" would not pose a significant threat in this case (Tyagi and Bhardwaj 2021).

Q. Please address the RPNCBC Avian Panel's statement that "the Garnet Solar Energy project is in the midst of a what may be the largest remaining breeding population in New York State" (RPNCBC Avian Panel Testimony, p. 42, l. 3–4).

A. This assertion is based entirely on speculation and does not reference any form of data, scientific or otherwise. According to the DEC, pied-billed grebe profile, breeding pied-billed grebes are most abundant in the St. Lawrence Valley and Lake Ontario regions of New York (DEC n.d.). The Project Area is located on the opposite side of the Seneca River from the primary cluster of pied-billed grebe observations and as stated by RPNCBC, this species requires significant contiguous water for take-off, and no such waterbodies exist within the Project Area. There is also an inherent lack of habitat connectivity between the referenced observation cluster and the Project Area, further decreasing the likelihood that pied-billed grebe uses the Project Area in any capacity.

Due to the lack of suitable pied-billed grebe habitat within the Project Area, the lack of observations surrounding the immediate vicinity of the Project Area, and accessibility concerns, the pre-construction study advocated by RPNCBC for pied-billed grebe lacks a scientific underpinning, is not required, and is unnecessary.

Q. Do you believe that all data and analyses from pre- and post-construction surveys should be made public (RPNCBC Avian Panel Testimony, p. 53, l. 3)?

A. No. Specifically pertaining to T&E species, confidentiality of observation locations and other sensitive information should be of utmost importance, as it protects these species and individuals from unnecessary harassment and pursuit from the general public, which could also result in nest failure, undue stress, and other negative impacts that harm these sensitive species.

Q. Do you believe that the Project will negatively impact the Montezuma NWR (RPNCBC Avian Panel Testimony, p. 53, ll. 16–17).

A. No. The Montezuma NWR is 2.25 miles away from the Project Area at its closest and differs significantly from the Project Area in habitat composition. The majority of the Montezuma NWR is actually concentrated between 9 and 10 miles from the Project Area, further decreasing the probability of impacts as a result of the Project.

Q. Is the RPNCBC Avian Panel's recommendation that "[m]ortality thresholds, including acceptable levels of uncertainty, should be tied to compensatory actions before a Certificate is issued" acceptable (RPNCBC Avian Panel, p. 52, ll. 22–23)?

A. No. This additional requirement would be unprecedented for an Article 10 certificate and is not supported based upon Rebuttal Testimony presented herein.

Q. Do you agree with the RPNCBC Avian Panel's recommendation that additional studies of bird distributions should be required before Garnet may be granted a certificate (RPNCBC Avian Panel Testimony, p. 55, l. 3–p. 56, l. 13)?

A. No. Requiring these additional studies and maps would be unprecedented within the Article 10 process and would violate the 12-month statutory deadline.

Direct Testimonies of Lay Witnesses Mr. Moretti, Ms. Bramble, and Ms. Lillie (collectively, "RPNCBC Testimony")

Q. Please briefly explain the Visual Impact Analysis ("VIA") prepared for the Application.

A. The VIA was prepared in accordance with the 16 NYCRR § 1001.24 of the Article 10 regulations and Exhibit 24 of the Study Stipulations. Landscape character such as water resources, physiography and landform, types of roads, and land use patterns, were described. An inventory of publicly available and accessible local, County, State, and federally recognized visual resources out to a 5-mile Visual Study Area ("VSA") was produced and impacts were evaluated. Viewshed analysis and resultant mapping was performed for solar arrays and the collection substation to depict the extent of predicted facility visibility throughout the VSA. Photo simulations in the VIA demonstrate the predicted appearance of the Project, as viewed from several viewpoints, representing a range of landscape settings, distance zones, and landscape positions occurring throughout the VSA (*see* App. Ex. 24 at 55–56). Residential areas were also a focus. Ratings of Project contrast and narrative descriptions provide discussion and analysis of the nature of visibility, user groups, and likely viewers of the associated facilities of the Project from the representative viewpoints, and characterization of impacts are provided.

Q. Did DPS staff recommend that the Siting Board make a finding that the adverse visual effects of Project construction and operation are minimized or avoided to the maximum extent practicable?

A. Yes. In their direct testimony DPS staff states: "Yes. The Siting Board can find that the adverse environmental effects of construction and operation of the Facility are minimized or avoided to the maximum extent practicable, subject to the adoption of the

modifications and conditions presented in the Settlement Package, including the proposed Certificate Conditions, as necessary to minimize the environmental and other adverse impacts of the Project" (DPS SPSS, p. 50, l. 19–p. 51, l. 6).

Q. Please respond to the general arguments presented by RPNCBC regarding impacts to community character.

A. Each of the three RPNCBC lay members state their concerns on impacts to community character, frequently using hyperbolic and sweeping language. In his testimony, Mr. Eugene Moretti states that "It will be impossible to travel in and out of, or anywhere within, the Town, without encountering vast fields full of industrial scale solar arrays, inverters, switching stations, lay down yards, battery storage units and, of course, the massive substation on Cooper Street" (Moretti Testimony, p. 5, ll. 3–6). He further states: "I am deeply concerned that the construction and operation of these Project components will destroy any semblance of peaceful country life" (Moretti Testimony, p. 6, ll. 6–8).

Ms. Brenda Bramble offers similar sentiments, stating: "My primary concern is that this Project will destroy the rural character of our community for years to come" (Bramble Testimony, p. 7, ll. 1–2).

Ms. Peggy Lillie states: "Every single day we will be forced to view project components from our homes and from many of the roadways as we travel throughout the community. For the residents of Conquest, there will be no escape from the visual impacts" (Lillie Testimony, p. 4, ll. 13–16).

We would like to respond to these comments within the context of the VIA. While the Applicant acknowledges that visibility of the Project will occur, the maps in

Attachment 2 of the VIA (App. App'x 24-1) show that predicted visibility is generally restricted to within the 0.5-mile Distance Zone 1. Predicted visibility outside of this distance zone is either negligible or non-existent. If one wants to consider the 5-mile VSA as being the overall community, then Table 6 in the Application shows that only 2.47% of the land area within the VSA will have predicted visibility (*see also* App. Ex. 24 at 63). That is, 3.49 square miles out of the 141.49 miles of VSA will have some level of full or partial visibility of one or several solar arrays. Visibility might only consist of the upper parts of panels in some locations. This level of predicted visibility is relatively insignificant and will not have the dire consequences described by the RPNCBC lay witnesses.

One could also just refine this to the Town of Conquest as the "community". The Town of Conquest is 36.30 square miles. With the January 2021 Project Update, modifications to the array layout reduced overall visibility to 3.23 square miles of land area, or 2.28% of the land area within the VSA (App. Ex. 24 Update at 13). Applied only to the Town of Conquest, the updated predicted visibility percent would be 8.89%, with 91.11% of the Town's land area remaining with no expected visibility. Again, this is not the detrimental effect to the community asserted by the RPNCBC lay witnesses.

Q. Please address Mr. Moretti's testimony regarding deer hunting where he states: "I am also concerned that the fenced arrays will affect the movement of wildlife negatively, channeling deer in particular, into man-made corridors which have never in history existed before, permanently disrupting their natural movements for food and breeding, and forever re-defining deer hunting in Conquest, New York" (Moretti Testimony, p. 6, ll. 8–12).

A. The Project's LOD is 1,054.10 acres or 1.64 square miles. This leaves 34.66 square miles of unaffected territory in the Town of Conquest. Furthermore, one very large Wildlife Management Area ("WMA") exists in Conquest. The Northern Montezuma State WMA is a 4,652.4-acre (7.3 square mile) WMA, the majority of which is within the southwestern section of the Town and offers recreation and hunting that will be entirely unaffected by the Project, in addition to all of those areas and wildlife corridors that are contiguous to the WMA in and outside of Conquest. Strictly within the Town, the WMA consists of 3,749.9 acres (5.9 square miles). Other recreational areas, such as Duck Lake and Campgrounds to the west and the Seneca River to the south, will remain visually and otherwise unaffected.

Also, as described elsewhere in this Rebuttal Testimony, fencing is primarily proposed in discrete blocks, forming a perimeter around panel arrays that are primarily located in agricultural fields throughout the Project Area. TNC Resiliency Data was reviewed to evaluate the level of existing connectivity of wildlife habitat within the Project Area. Much of the Project Area contains open habitat, which provides below average or limited natural flow of animal movements (App. Ex. 22 at fig. 22-6). Some areas containing forestland provide above-average connectivity to support movement of local animal populations. A large, undisturbed tract of forested habitat is in the central portion of the Project Area between Slayton Road and Cooper Street (*id*.). This area is contiguous with forested habitat that extends off site to the southwest, southeast, and northwest. The Project Layout maintains connectivity to allow for uninhibited movement through these large, forested blocks to the north-south and east-west. Perimeter fencing, as proposed, is primarily sited within areas of low existing connectivity and flow; and,

therefore, is likely to have little to no impact on the movements of wildlife within the Project LOD and wildlife habitat nearby (App. Ex 22 Update at 18).

Q. Can you continue to respond to comments made by the three RPNCBC lay witnesses?

A. Mr. Moretti states that "There will also be substantial negative visual impact in traveling to and from my home in either direction" (Moretti Testimony, p. 7, ll. 16–17). Ms. Bramble claims "I will not be able to drive anywhere in town from my home without driving past fields of solar panel arrays" (Bramble Testimony, p. 5, ll. 4–5). Ms. Lillie states that "[e]very single day we will be forced to view project components from our homes and from many of the roadways as we travel throughout the community" (Lillie Testimony, p. 4, ll. 13–15).

As stated previously in this Rebuttal Testimony, at least 91% of the land area within the Town (and more within the greater extents of the overall VSA) will not be visually affected. There is also vegetative mitigation in the form of landscaping proposed throughout the Project to moderate and/or screen views.

Residents chose to live in their respective parcels amongst existing open land that is currently not developed. In our view, the RPNCBC witnesses are exhibiting a low tolerance for, and unreasonable expectation of, new development or change occurring on the surrounding open land. It is not as if these residents secured easements from their neighbors to prevent any further development. It is reasonable to expect development to occur as long as said development conforms with applicable law. As explained below, the Project more than complies with the Town's setback requirements.

The lay witnesses' suggestion of 10-foot berms, in addition to the vegetative mitigation already proposed by Garnet, is evidence of the posture by the RPNCBC

witnesses that new development should not exist unless it is totally screened in their viewsheds. They cannot, however, argue that the rights of other landowners to use their property within the confines of the law should be denied. In our view, their proposed entitlement to 100% screening, no matter how impracticable, is unreasonable, and is not supported by Article 10 or its implementing regulations. Potential impacts must be avoided or minimized to the maximum extent practicable—not eliminated entirely—and then balanced with the renewable, economic, and other benefits of the Project. The RPNCBC witnesses would like the Siting Board to conclude that residents can dictate what their viewshed should be and that landowners seeking to supplement their income by leasing their land for renewable energy development cannot make that choice.

Additionally, the testimony of the three RPNCBC witnesses assumes that all viewers will have a negative perception of the Project, which is not supported with any expert evidence. Application Exhibit 24 explains that 1.63% of the 2.28% total visibility within the VSA occurs on lands belonging to participating landowners (App. Ex. 24 Update at 14).

Q. Please address the statements of glint and glare by Mr. Moretti that those who live on O'Neill Road, Montana Road, Schooley Road, Cooper Street, Drake Road, and Spook Woods Road will experience glint or glare "as a low impact, and apparently acceptable collateral damage" (Moretti Testimony, p. 8, ll. 7–18).

A. Mr. Moretti is not expected to experience glare from arrays south of his property location as depicted in Moretti Exhibit C. The Glint and Glare Analysis (App. App'x 24-2 or "Pager Power Report") concluded that glare is not geometrically possible from those

arrays because those fixed arrays face south, while Mr. Moretti's residence is located north of the arrays where his view would be looking at the backs of the panels.

In addition, the Pager Power Report concluded that Mr. Moretti's property is not expected to experience glare from arrays to the east or west of his property. Existing vegetation and terrain are predicted to significantly obstruct views to those panels (*see* Pager Power Report at 22, 67). Indeed, Moretti Exhibit D shows substantial screening of the arrays to the west due to an existing forested area.

Q. Please discuss the Pager Power Report submitted as Appendix 24-2 of the Application.

A. Pager Power's glare methodology produces conservative results (App. Ex. 24 at 35). It assumes clear, sunny skies for 365 days of the year and does not take into account meteorological conditions that would nullify predicted glare such as clouds, rain or snow (*id*.). Pager Power's model also does not account for obstructing terrain between the reflecting solar panels and the assessed receptor where a solar reflection is geometrically possible and assumes that a receptor can view the face of every panel within the Project Area, while in reality, in the majority of cases, this will not occur (Pager Power Report at 119).

The Pager Power Report demonstrates that most solar reflections for the modelled receptors would occur between the beginning of March and end of September (*see id*. at 148–161). Thus, reflections would typically occur during months when vegetation levels are greater than that during the winter months of the year. Significant screening would constitute screening levels such that solar reflections would not be visible, *i.e.*, visibility of the reflecting panels would only be possible when looking through small gaps in the screening within close range (a few meters) to the solar panels (*id*. at 105). Solar

reflections would typically occur at either around 6am or 6pm (*id*. at 148–161). Therefore, it is likely that the Sun will be low in the sky beyond the panels and any glare effects would mostly coincide with direct sunlight (*see id*. at 105). The Sun is a far more significant source of light than any reflections.

Solar panels, like all visible objects, reflect an amount of the light that illuminates them. The panels are designed to absorb sunlight and will be treated with anti-reflective coatings that will absorb and transmit light rather than reflect it (App. Ex. 24 at 35). Available studies have measured the intensity of reflections from solar panels with respect to other naturally occurring and manmade surfaces, and the results show that the solar panel reflections are of intensity similar to or less than those produced from still water and significantly less than reflections from glass, steel, snow, and vegetation. The Pager Power Report presented the table below demonstrating the comparatively less intense reflectivity values of solar panels (Pager Power Report at 111).

Surface	Approximate Percentage of Light Reflected[22]
Snow	80
White Concrete	77
Bare Aluminium	74
Vegetation	50
Bare Soil	30
Wood Shingle	17
Water	5
Solar Panels	5
Black Asphalt	2

Relative reflectivity of various surfaces

While the data above does not appear to consider the reflection type (specular or diffuse) or the angle of incidents, the table demonstrate that snow cover reflects 16 times the amount of light than solar panels. Considering the reflectivity levels of aluminum and glass (*see id*. at 112), it is likely that the intensity of reflections from other cars would be comparable, most notably from car windscreens/windows.

Furthermore, any potential glare on local roads would be insignificant (*id.* at 4). Glare occurring on faster, busier roads effects are considered more significant compared to quieter, slower roads. Local roads are of lesser sensitivity to reflections mainly due to the lower traffic densities. Thus, the potential effect on safety and/or operation on local roads of the Project is low. When placed in perspective with other naturally occurring sources of reflection, including the overwhelming impact of the Sun, and the isolated

minutes during the day when there might be reflection from the panels, the Project represents a negligible incremental source of glare to local roads.

Q. Do the RPNCBC lay witnesses recommend the use of berms for mitigation?

A. Mr. Moretti states that the panel array across from his home should be eliminated, and "[s]hort of that, considering the sharp upslope of the proposed panel array location, a substantial berm of ten feet should be built with mature plantings added on top of the berm so that the array is not visible from my property or from the street" (Moretti Testimony, p. 8, l. 22–p. 9, l.1). Ms. Lillie requests the same berm and planting screening in her testimony (Lillie Testimony, p. 9, ll. 5–13).

The issue of berms and why they are not recommended was addressed in the Applicant's Response to Town of Conquest IR-1, dated March 14, 2022 (Ex. GRP-14). The RPNCBC testimony does not address that IR Response.

Vegetative landscaping is proposed as mitigation because it is considerably more natural looking than manmade berms. Berms also act as a shelf, which breaks the continuity of a slope and changes the path and flow characteristics of stormwater across a Project Site. Installation of permanent berms would require significant re-evaluation of the stormwater characteristics of the Project Area. Use of a berm on the steep slopes in the Project Area could result in significant channelization of stormwater runoff and result in erosion and sedimentation off site. Significant erosion could also result in permanent ponding. Sediment trapping devices, such as a sediment basin, would be required at the outlets of the berms to collect any transported sediments to prevent impacts to downstream areas.

Berms are typically proposed only as a temporary erosion and sediment control measure during construction until the Project Area is adequately stabilized with vegetation. Similarly, the use of berms adjacent to roadways could alter the characteristics of stormwater flows off the roadway. Roadways are pitched to direct runoff to the shoulders of the roads. The channelization of runoff from the roadway, primarily during significant rain events of 0.25 inches or more, has the potential to create adverse impacts, including erosion along the road shoulder that could compromise the roadway over time.

Lastly, permanent berms would require a significant amount of space to construct adequate side slopes to prevent erosion of the berm. Side slopes of 2:1 or flatter are recommended. Side slopes steeper than 2:1 would require riprap surfacing to provide additional erosion protection, which would only serve to further harden the views of the landscape. Using this additional required space for berms would also result in the need to utilize more land for placement of arrays themselves.

Q. Can you respond to statements by the RPNCBC lay witnesses about the effectiveness of vegetated mitigation that is intended to screen views to the Project?

A. Mr. Moretti states:

> There is a substantial field of solar arrays proposed on the south side of Cooper Street, southeast of my home. The ground slopes up sharply from Cooper Street to the power lines, making that entire solar field visible at all times. (See **Exhibit C**) Because of the sharp slope, the 5-6 foot trees proposed by the developer (in Applicant's Landscape Plan Updated Appendix 11-2) to mitigate the visual impact will be completely ineffective (Moretti Testimony, p. 6, l. 19 – p. 7, l.2) (emphasis in original).

Mr. Moretti's apparent position is that all new development in his viewshed should be screened, no matter how impracticable. Mr. Moretti's asserts that "a substantial berm of

ten feet should be built with mature plantings added on top of the berm so that the array is not visible from my property or from the street. Trees should be mature and 6 feet high at planting. All other components on Cooper Street are woefully inadequate in regards to visual screening" (Moretti Testimony, p. 8, l. 23 –p. 9, l. 2). Mr. Moretti also requests that a 10-foot berm with 6-foot mature plantings be implemented for the array proposed in the parcel adjacent to his property to the west. (Moretti Testimony, p. 9, ll. 6–7). In our view, Mr. Moretti is not entitled to exercise zero tolerance for change to which he may subjectively object in his respective viewshed—or short of that, that 100% screening must be achieved. As explained earlier in this Rebuttal Testimony, that entitlement or expectation is unreasonable and not required by Article 10. We are advised by counsel that potential impacts only need to be avoided or minimized to the maximum extent practicable, not eliminated entirely.

Q. What is Garnet is proposing with respect to Mr. Moretti's predicted views of the Project?

A. For the entire Project, approximately 30,320 linear feet (5.7 miles) of vegetative mitigation is proposed (*see* App. Ex. 24 Update at 33). Approximately 25,405 is proposed around the arrays, and another 670 feet of vegetative mitigation is proposed at the collection substation. An additional 4,245 feet of mitigation will be provided to screen for potential glare (*id*. at 41). Vegetative mitigation is proposed in front of the fence line of the arrays facing Mr. Moretti's residence on Cooper Street. Mr. Moretti provides no evidence to support his comment that mitigation will be completely ineffective.

To the contrary, the record evidence demonstrates that while vegetation will be shorter at planting time, as noted in the VIA in Section 12.2, varying vegetative species

could reach up to 15 feet tall at five years, with conifer growth possibly up to 40 feet tall thereafter (*id*. at 40). As mentioned above, building a permanent berm would be impracticable.

Mr. Moretti also describes a second location as presented in Moretti Exhibit D of a photo looking to the west from his property toward a partially visible field, which would have solar panels located on the other side of a mature forest. Mr. Moretti asserts that "[t]here are no screenings or planting of trees or shrubs proposed to mitigate this adverse impact. This is unacceptable" (Moretti Testimony, p. 7, ll. 7–8). The photo in Moretti Exhibit D shows a photograph of a mature 470- to 530-foot-wide forested area during winter conditions, located between his residence and proposed panels in that western field. This intervening forested area provides full screening for most of the view and leaves sufficient partial screening by a smaller, less dense area of forest.

Additionally, the Town has not adopted setback regulations from a residence when erecting a building or structure. As explained in more detail below, the panels to the west (on the other side of these woods) as measured by GIS, would be approximately 1,068 feet from an occupied residence, which exceeds the 250-foot setback required in Certificate Condition 64 by more than 4 times.

The photo location in Moretti Exhibit D appears to not be from his residence, but from an outbuilding on the property that is approximately 940 feet from the panels. Most of the mature forest on the right of the photo is dense enough to block the view of those arrays to the west-northwest in winter conditions. The left portion of the photo shows a smaller portion of the western field that is partially visible through a less dense section of forest. This partial view of the field under winter conditions is through gaps of bare-

branched trees and would show panels with a fragmented view through intervening leaf-off vegetation. The existence of mature trees provides screening to those western arrays that he erroneously claims to have no screenings or planting of trees or shrubs proposed.

Leaf-on conditions of the existing forest would likely provide full, or nearly full, screening during warmer months when people are more likely to be outdoors. All Town setbacks, along with those set forth in the Certificate Conditions, have been met or exceeded at this property. The required setback from non-participating residential property lines as noted in Certificate Condition 64(c) is 100 feet and 25 feet for the Town setback. The setback of the panels from Mr. Moretti's south property line as measured by GIS is 178.2 feet. The panels in the west field are 113.2 feet from his nearest property line. Required setbacks from a non-participating occupied residences per Certificate Condition 64(b) is 250 feet. The setback distance of the panels from Mr. Moretti's occupied residence is 374.2 feet to the southern arrays and is approximately 1,068 feet from the western arrays.

Q. Can you respond to the RPNCBC lay witness direct testimony regarding property setbacks?

A. Ms. Lillie states: "Some of these components appear to be less than 300' from my house and in some places less than 100 feet from my property lines" (Lillie Testimony, p. 6, ll. 6–7). She also states:

> "Additionally, despite the application indicating there will be a 100-foot minimum setback from all non-participating landowner property lines, it appears no such setback is applied to the Project components immediately to my south. It is my understanding that along the southern property line the solar arrays will be located approximately 75 feet from my property line at the southwest corner and gradually getting to 100 feet at the southeast property corner (near Spook Woods Road)." (Lillie Testimony, p. 7, ll. 8–13).

This testimony is incorrect. The Project meets or exceeds the setback requirements noted in the Certificate Conditions. Ms. Lillie's property is comprised of two parcels. As derived from the New York State Property Class Codes under the New York State Department of Taxation and Finance, one parcel is classed as residential where the occupied residence is located, and the other parcel is classed as vacant land. The required setback from non-participating residential property lines, as noted in Certificate Condition 64(c), is 100 feet. The Town's setback requirement for a building or structure is 25 feet from side or rear lot lines. As noted above, the Town does not have a setback requirement for the erection of a building or structure to a residence.

The distance from Ms. Lillie's residentially classified parcel property line to the nearest solar panel is 208.7 feet. A large portion of her property to the west-southwest is classified as vacant land. This would appear to be the portion of the property that Ms. Lillie describes as being 75 feet from her property line at the southwest corner. Under Certificate Condition 64(d), a 50-foot setback is required for property lines classified as vacant land. The Town of Conquest has no required setback for structures from vacant land. The closest distance to solar panels from Ms. Lillie's property line to the southwest that is classified as vacant land is 71.1 feet. Required setbacks from a non-participating occupied residence per Certificate Condition 64(b) is 250 feet. The closest solar panel to Ms. Lillie's occupied residence is 258.4 feet. The Town's setback requirement for a building or structure is 25 feet from the property line, with which the Project complies.

Nevertheless, the Applicant has met with Ms. Lillie and reviewed her concerns regarding the placement of visual mitigation near her property. In her testimony, Ms. Lillie indicates that Project Components are proposed to the west and south of her

property (Lillie Testimony, p. 6, ll. 4–6). No visual mitigation is proposed to the west of her property, as the closest solar panel from Ms. Lillie's property line in this area is set back 71.1 feet, followed by an additional 430 feet of existing forested land on her property that will visually screen the arrays proposed to the west. No visual mitigation is proposed along Ms. Lillie's southern property line in the Preliminary Landscape Plan included in the Article 10 Application and subsequent Update. There is no existing vegetation that may serve as visual screening in this area. As such, per Ms. Lillie's request, the Applicant will re-examine the Preliminary Landscape Plan in the Compliance Filing to evaluate whether landscaping, consistent with what is proposed on other portions of the Project Site, should be installed along her southern property line where no vegetation exists.

The setbacks for Mr. Moretti's occupied residence and property line also meet or exceed the Certificate Conditions, described above. Ms. Bramble does not offer a concern in her testimony regarding Project setbacks for solar panels. Ms. Bramble acknowledges that "[t]he closest solar panel arrays are 1/4 miles from my house" (Bramble Testimony, p. 4, l. 11). She adds that "[t]he connecting transmission cables will be within 10 feet of my property line" (Bramble Testimony, p. 4, l. 12).

Lillie Exhibit B shows a red, dotted line going by her residence along the roadway. This red, dotted line refers to the buried collection lines that will be underground, and will, therefore, not create an above-ground visual impact. Certificate Condition 66(a) states that collection lines shall be placed underground to the extent practicable to decrease additional aboveground impacts.

Q. Can you please address Mr. Moretti's recommendations regarding walnut trees in his yard?

A. Yes. Mr. Moretti states he is concerned that walnut trees in his yard may be disturbed during the construction of the Project and requests a Certificate Condition "prohibiting the destruction of these trees without [his] express permission." (Moretti Testimony, p. 10, ll. 4–8).

Garnet's Certificate Conditions already include limitations on tree clearing. Certificate Condition 94 limits tree clearing to the minimum necessary for Facility construction and requires that Garnet file a Tree Clearing and Grading Compliance Filling to indicate the limits of tree clearing and measures that will be taken to avoid disturbance to vegetated areas. There is no proposal to remove trees on property owned by Mr. Moretti. There is the potential that trees located within Town, County, and/or State road rights-of-way may need to be trimmed or cleared for the placement of underground collection line. As noted above, the Applicant has agreed to limit tree clearing to the minimum necessary and will work with the Town, County, and State to address any required tree clearing in public road rights-of-way.

Q. Do you agree with Mr. Moretti's recommendations regarding adding a "sunset clause" to Certificate Condition 1?

A. Mr. Moretti recommends that a sunset clause should be added to Certificate Condition 1, adding that "[c]onsidering the lifespan of solar PV panels, a Certificate term of 25 years would be appropriate" (Moretti Testimony, p. 12, ll. 9–15).

Certificate Condition 1 concerns the general authorization to construct and operate the Project. The useful economic life of the Project is estimated to be at least 30

years. No other Article 10 proceeding imposes a requirement to renew the project at the end of its useful economic life.

Q. What are Mr. Moretti's recommendations regarding jurisdiction over local roads?

A. Mr. Moretti makes two recommendations regarding local roads. With respect to Certificate Condition 3, Mr. Moretti recommends that the language should clearly state that the Public Service Commission ("Commission") and Siting Board lack jurisdiction over the use of local roads and lack the power to issue road use permits / agreements (Moretti Testimony, p. 12, l.17 – p.13, l. 2).

With respect to Certificate Condition 41, Mr. Moretti recommends that the following language be added: "The Siting Board acknowledges that the siting Board and Public Service Commission do not have jurisdiction over permits for the use of town, county, or village roads" (Moretti Testimony, p. 14, ll. 12–14) (internal quotation marks omitted)).

These are legal questions properly addressed in briefing.

Q. Do you agree with Mr. Moretti's recommendation to modify Certificate Condition 11, such that the Certificate would expire two years from the date of issuance unless the Garnet has completed construction and commenced commercial operation or has obtained an extension of the deadline from the Secretary (Moretti Testimony, p. 13, ll. 4–8)?

A. No. Mr. Moretti claims that "[s]even years is an excessive amount of time for a certificate holder to delay construction" (Moretti Testimony, p. 13, ll. 8–9). The standard expiration date for a certificate to expire is seven years from the date of issuance.[18]

Q. Should Certificate Condition 15 be modified to include the language that Mr. Moretti recommends related to HCBA and PILOT agreements, as per Mr. Moretti's recommendation?

A. No. Mr. Moretti states that Certificate Condition 15 should require Garnet to file a fully executed HCBA with the Town and any PILOT agreements as a Compliance Filing" (Moretti Testimony, p. 13, ll. 12–17).

Certificate Condition 15 explains that Garnet will implement the avoidance, minimization, and mitigation measures described in the Application, supplemental filings, updates, replies to discovery data requests, and the Certificate Conditions. Moreover, Certificate Condition 40 requires Garnet to file with the Secretary the actual tax payments made to local jurisdictions during the Project.

The Siting Board has previously determined that HCBA negotiations and PILOT agreements are outside of the scope of Article 10. "Article 10 and its implementing regulations do not require developers to include HCBA or PILOT agreements in the record to establish that the Project will have an economic benefit" (High Bridge Order at

[18] *See* Trelina Order at Certificate Condition 11 (using a seven-year deadline); Case 18-F-0087, *Flint Mine Solar LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Aug. 4, 2021) ("Flint Mine Order"), at Certificate Condition 9 (using a seven-year deadline); Case 17-F-0617, *Hecate Energy Albany 1 LLC and Hecate Energy Albany 2 LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Jan. 7, 2021) (Hecate Albany Order), at Certificate Condition 8 (using a seven-year deadline); Case 17-F-0597, *High River Energy Center, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Mar. 11, 2021) ("High River Order"), at Certificate Condition 10 (using a seven-year deadline); Case 18-F-0262, *High Bridge Wind, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Mar. 11, 2021) ("High Bridge Order"), at Certificate Condition 11 (using a seven-year deadline); East Point Order at Certificate Condition 9 (using a seven-year deadline).

110). "[N]either the amount of a tax assessment or the outcome of a negotiated PILOT payment is within the Siting Board's jurisdiction to determine."[19]

Q. Is there precedent to allow Garnet to seek protected status for certain documents related to property rights and agreements, as set forth in Certificate Condition 28?

A. Yes. Mr. Moretti argues that "[t]here is no reason that documentation demonstrating that all property rights and/or necessary agreements are in place for use of the Facility Site for construction and/or operation, should be considered confidential" (Moretti Testimony, p. 13, ll. 19–21).

Certificate Condition 28 requires Garnet to file with the Secretary as an Information Report documentation demonstrating that all property rights and/or necessary agreements are in place for the Facility Site for construction and/or operation. The Condition also allows Garnet to seek protected status for some or all of these documents. Other Article 10 orders have allowed protected status to be sought for documents related to land use agreements.[20]

Q. Is Certificate Condition 35 consistent with Article 10's implementing regulations and precedent?

A. Yes. Mr. Moretti asserts that Certificate Condition 35:

> As drafted appears to allow the Applicant to seek modifications or revisions to the Certificate using information and compliance filings, which violates PSL 161(1). Pursuant to PSL 161(1), "The chairperson, after consultation with the other members of the board exclusive of the ad hoc members, shall have exclusive jurisdiction to . . . grant requests for extensions or amendments to or transfers of certificate terms and conditions, provided that no party to the proceeding opposes such request." By definition, the revisions contemplated under this condition are "likely to result in significant

[19] Case 17-F-0599, *supra*, Ruling on Motion (Apr. 27, 2020), at (4).

[20] *See e.g.,* Trelina Order at Certificate Condition 28; High River Order at Certificate Condition 23.

> adverse environmental impacts or an adverse environmental impact not included in the Application." (Moretti Testimony, p. 14, ll. 1–10).

Certificate Condition 35 allows Garnet to submit changes to the Project plans that arise because of conditions of federal permits and/or approvals. It also requires Garnet to submit such revisions for review and approval pursuant to 16 NYCRR §§ 1002.2 and 1002.3. Pursuant to 16 NYCRR § 1002.2(j), a certificate holder may request a change to an approved compliance filing by requesting a major or minor change; and pursuant to 16 NYCRR § 1002.3 describes what information must be included in such filing. This condition is consistent with other Article 10 proceedings.[21]

Q. Should Certificate Condition 48 be changed to require the environmental compliance and monitoring program to be filed as a Compliance Filing instead of an Information Report as Mr. Moretti recommends (Moretti Testimony, p. 14, ll. 16–17)?

A. No. Certificate Condition 48 requires Garnet to file an environmental compliance and monitoring plan as an Information Report prior to site preparation. Although some Article 10 proceedings have required the environmental compliance and monitoring program to be included in the final SEEP or filed as a Compliance Filing,[22] submitting

[21] *See,* Trelina Order at Certificate Condition 13; Flint Mine Order at Certificate Condition 7(a); Hecate Albany Order at Certificate Condition 41; High Bridge Order at Certificate Condition 42; East Point Order at Certificate Condition 10(a); Case 15-F-0122, *Baron Winds, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Sept. 12, 2019), at Certificate Condition 36; Case 17-F-0182, *Mohawk Solar LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Nov. 19, 2020) ("Mohawk Order"), at Certificate Condition 7(a); Case 17-F-0619, *Hecate Energy Greene 1 LLC, Hecate Energy Greene 2 LLC, and Hecate Energy Greene County 3 LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Sep. 28, 2021) ("Hecate Greene Order"), at Certificate Condition 46; Case 16-F-0205, *Bluestone Wind, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Dec. 16, 2019) ("Bluestone Order"), at Certificate Condition 40.

[22] *See e.g.,* Flint Mine Order at SEEP Guide § B(2); Hecate Albany Order at SEEP Guide § B(3.2); High Bridge Order at SEEP Guide § B(2); Mohawk Order at SEEP Guide § B(2); Case 16-F-0062, *Eight Point Wind, LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (Aug. 20, 2019), at Certificate Condition 29 ("Eight Point Order").

the environmental compliance and monitoring plan as an Information Report is consistent with more recent Article 10 proceedings.[23]

Q. Do you agree with Mr. Moretti's recommendation that Certificate Condition 88 should include a requirement that Garnet's internal corporate environmental auditing team conduct environmental audits once every three years; that the reports be provided to the Siting Board, the Commission, and the Town; and that Garnet make and report corrective actions based on the findings of the audits (Moretti Testimony, p. 16, ll. 5–19)?

A. Certificate Condition 88 requires Garnet to provide funding for an Environmental Monitor and describes the compliance and reporting roles and duties of the Environmental Monitor during the different phases of the Project. The language in Garnet's proposed language regarding hiring an Environmental Monitor and conducting compliance audits with DPS as necessary is consistent with the language other Article 10 proceedings.[24]

DPS staff did not request that Garnet file an internal corporate audit. The Siting Board has never required NextEra or its subsidiary projects to publicly disclose internal corporate audits by filing them as a Compliance Filing or an Information Report. Mr. Moretti's proposal is unnecessary given the auditing and reporting requirements that Garnet must meet in cooperation with DPS staff and the Environmental Monitor.

Q. Do you agree with Mr. Moretti's recommendations that Certificate Condition 105 should include the proposed requirements to make post-construction avian monitoring "robust,

[23] *See e.g.,* Trelina Order at Certificate Condition 49; High River Order at Certificate Condition 43; East Point Order at Certificate Condition 42.

[24] *See e.g.,* Flint Mine Order at Certificate Condition 61(a) (requiring "regular reporting and compliance audits); Hecate Albany Order at Certificate Condition 72 (requiring "regular reporting and compliance audits"); High Bridge Order at Certificate Condition 79 (requiring "regular reporting and compliance audits" and that copies of the audits be provided to the host town).

last more than one year, and the results must be open to the public and academic researchers" (Moretti Testimony, p. 17, ll. 9–16).

A. No. Certificate Condition 105 describes what Garnet must include in the post-construction avian monitoring plan. This plan will be developed in consultation with DEC and the final plan will be filed as a Compliance Filing. The language is consistent with language regarding post-construction avian monitoring in other Article 10 projects.[25] The RPNCBC Avian Panel recommendations are refuted elsewhere in this Rebuttal Testimony.

Certificate Condition 105 also requires Garnet to provide the results of its monitoring to DEC under appropriate confidentiality protections for sensitive T&E data, which Mr. Moretti would have Garnet publicly publish. This data is protected under State law, and publishing this T&E species data would be entirely inconsistent with Article 10 precedent.

Q. Can you explain whether the Final Complaint Resolution Plan, detailed in Certificate Condition 49, should be filed as a Compliance Filing, as Mr. Moretti recommends (Moretti Testimony, p. 14, ll. 19–21)?

A. Certificate Condition 49 requires Garnet to submit a Final Complaint Resolution Plan for the construction and operation phases prior to the Site Preparation Phase and Operations Phase as an Information Report. The plan is required to be prepared in accordance with

[25] *See e.g.,* Trelina Order at Certificate Condition 105; Flint Mine Order at Certificate Condition 73(v); Mohawk Order at Certificate Condition 86; High River Order at Certificate Condition 97; Hecate Greene Order at Certificate Condition 102; East Point Order at Certificate Condition 97.

the Complaint Resolution Plan appended to the proposed Certificate Conditions. The language in Certificate Condition 49 is consistent with other Article 10 proceedings.[26]

Q. What does Mr. Moretti recommend with respect to Garnet's complaint resolution, set forth in Certificate Condition 51?

A. Mr. Moretti states that when a complaint resolution is not feasible, the complaint log should "explain in detail why resolution is not feasible"; he also claims that Garnet should update the log on a monthly basis and provide the log to DPS staff and the Town within seven business days upon request (Moretti Testimony, p. 15, ll. 1–12).

The language of Certificate Condition 51 is consistent the certificate conditions approved by the Siting Board in other Article 10 proceedings.[27] Accordingly, the Siting Board should adopt Certificate Condition 51 as proposed by the Applicant.

Q. Should Certificate Condition 64 be changed to include the 500-foot setback from any Project Component to any non-participating property line, as per Mr. Moretti's recommendation (Moretti Testimony, p. 15, ll. 14–18)?

A. Certificate Condition 64 requires that Garnet adhere to a 250-foot minimum setback from non-participating occupied residences; a 100-foot minimum setback from non-participating residential property lines; and a 50-foot minimum setback from non-participating non-residential and/or vacant property lines. The language in the proposed Certificate Condition, however, is consistent with the setbacks for solar projects

[26] *See e.g.,* Hecate Albany Order at Certificate Condition 39 (requiring that the plan be filed as an Information Report); Hecate Greene Order at Certificate Condition 41 (requiring that the plan be filed as an Information Report).

[27] *See* Trelina Order at Certificate Condition 51; Excelsior Order at Certificate Condition 53; High River Order at Certificate Condition 45.

established in other Article 10 proceedings.[28] As explained in greater detail above, the Project, as currently proposed, will meet or exceed the setbacks listed in Certificate Condition 64.

Q. Should Certificate Condition 72 be edited per Mr. Moretti's recommendations to require that Garnet provide a detailed description of the location and amount of forested land to be cleared, along with a plan for mitigation of adverse environmental impacts, in the Timber Salvage Plan (Moretti Testimony, p. 15, ll. 20–23)?

A. No. The language in Certificate Condition 72 is consistent with other Article 10 proceedings.[29]

Additionally, as explained in the Applicant's Updated Exhibit 22, impacts to forestland were avoided or minimized to the maximum extent practicable, including the placement solar panels, energy storage systems, and work areas in previously disturbed agricultural areas and open fields. Linear Project Components, such as access roads and collection lines, were co-located to avoid and minimize impacts to forestland. Mr. Moretti did not critique these analyses.

Q. Do you agree with Mr. Moretti's recommendation that Certificate Condition 82(e) should be edited to require that, for the Cultural Resources Mitigation and Offset Plan, proof of mitigation funding should be filed before beginning Project construction (Moretti Testimony, p. 16, ll. 1–3)?

[28] *See e.g.,* Trelina Order at Certificate Condition 64(c)–(d) (requiring a 100-foot minimum setback from all side and rear property, along with a 300-foot minimum setback from any residential structure on another parcel); East Point Order at Certificate Condition 57(a)–(c) (requiring a 100-foot minimum setback from front yards, side yards, and back yards); Mohawk Order at 79–80.

[29] *See* Trelina Order at Certificate Condition 72; High River Order at Certificate Condition 66; East Point Order at Certificate Condition 67.

A. No. Certificate Condition 82(e) requires that if Garnet must provide a Cultural Resources Mitigation Offset Plan, it must include proof of mitigation funding awards for offset project implementation within two years of the start of Project construction. This language is consistent with the language in other Article 10 projects.[30]

Attachment I to Garnet's Supplement to the Application is a Phase IB Findings Letter from the New York State Office of Parks, Recreation, and Historic Preservation ("OPRHP"), in which, OPRHP explains that it anticipates the Project will have no adverse impacts on archaeological and/or historic resources. Mitigation is, therefore, not required.

Q. Can you explain the recommendations Mr. Moretti makes regarding Garnet's proposed construction work window set forth in Certificate Conditions 90 and 91.

A. Mr. Moretti recommends that Garnet should be limited to a construction work window of 8 a.m. to 5 p.m., Monday through Friday, with no construction activities on Saturday through Sunday (Moretti Testimony, p. 16, ll. 21–23).

Mr. Moretti also recommends that Certificate Condition 91 be modified to require Garnet to alert adjacent non-participating landowners when solar panel construction activities will be necessary after 5 p.m. (Moretti Testimony, p. 17, ll. 1–3).

Certificate Conditions 90 and 91 explain the proposed construction window and notification requirements when construction activities must occur outside of the window. Certificate Condition 90 proposes a construction work window of 7 a.m. to 7 p.m., Monday through Saturday, and 8 a.m. to 7 p.m. on Sunday. Certificate Condition 91

[30] *See e.g.,* Trelina Order at Certificate Condition 80(e); Hecate Albany Order at Certificate Condition 63(d); High River Order at Certificate Condition 74(e); High Bridge Order at Certificate Condition 61(d).

requires the Applicant to notify the Town and environmental monitor if construction activities must continue later than the window. Garnet's proposed construction window is well within accepted windows in other Article 10 projects, and its notification requirements are consistent with other Article 10 projects.[31] Additionally, limiting the hours of construction to those proposed by Mr. Moretti would result in an extended construction duration as there would be fewer work hours available each day.

Q. Should the term "to the maximum extent practicable" be removed from Certificate Condition 95 as Mr. Moretti recommends (Moretti Testimony at p. 17, ll. 5–6)?

A. No. Under Certificate Condition 95, Garnet agrees to plan, construct, and mitigate the Project consistent with AGM's *Guidelines for Solar Energy Projects – Construction*

[31] *See e.g.,* Atlantic Wind Order at Certificate Condition 77 (allowing construction 6 a.m. to 8 p.m., Monday through Saturday, and 7 a.m. to 8 p.m., Sunday and national holidays; and requiring the certificate holder to notify DPS, affected landowners, and host municipalities when activities will occur outside of the construction window);

Case 17-F-0282, *Alle-Catt Wind Energy LLC*, Order Granting Certificate of Environmental Compatibility and Public Need, with Conditions (June 3, 2020), at Certificate Condition 82 (allowing construction 7 a.m. to 7 p.m. Monday through Saturday, or daylight hours outside of the construction window; and requiring the certificate holder to notify DPS, affected landowners, and host municipalities when activities will occur outside of the construction window);

Bluestone Order at Certificate Condition 89 (allowing construction 7 a.m. to 8 p.m., Monday through Saturday, and 8 a.m. to 8 p.m. Sunday and national holidays; and requiring the certificate holder to notify DPS, affected landowners, and host municipalities when activities will occur outside of the construction window);

Trelina Order at Certificate Conditions 88, 89 (allowing construction 7 a.m. to 7 p.m., Monday through Saturday; and requiring that the certificate holder only notify the host town and environmental monitor when activities will be required past the construction window);

Flint Mine Order at Certificate Condition 59 (allowing construction 7 a.m. to 7 p.m., Monday through Saturday, and 8 a.m. to 7 p.m. on Sunday and national holidays; and requiring the certificate holder to notify DPS, affected landowners, and the host towns when activities will be required past the construction window);

Hecate Albany Order at Certificate Condition 77 (allowing construction 7 a.m. to 6 p.m., Monday through Saturday; and allowing certain construction activities beyond the construction work window);

High River Order at Certificate Conditions 83, 84 (allowing construction 7 a.m. to 7 p.m., Monday through Saturday; and requiring the certificate holder to alert the host town and environmental monitor when activities will occur outside of the construction window);

East Point Order at Certificate Conditions 84, 85 (allowing construction 7 a.m. to 7 p.m., Monday through Saturday; and requiring the certificate holder to alert the host town and environmental monitor when activities will occur outside of the construction window).

Mitigation for Agricultural Lands (Revision 10/18/2019) ("AGM Guidelines") to the maximum extent practicable. This language is consistent with other Article 10 projects.[32]

Q. Can you address Ms. Bramble and Ms. Lillie's concerns regarding impacts to water supply wells?

A. Yes. Ms. Bramble claims that she has a well within 100 feet of the connecting transmission cables and 0.25 miles from other Project Components (Bramble Testimony, p. 5, ll. 20–21). She also claims that her well is not depicted in the Wells, Groundwater Aquifers, and Recharge Areas map submitted as part of the Application (Bramble Testimony, p. 5, ll. 21–22). Ms. Peggy Lillie states that her water well is approximately 120 feet from the Project, and that her well was not identified on the "Wells, Groundwater Aquifers, and Recharge Areas" map (Lillie Testimony, p. 10, ll. 5–8).

Pursuant to Certificate Condition 22(b), Garnet will provide notice by mail to owners and operators of wells within 500 feet of the final layout at least 14 days prior to the commencement of construction.

Under Certificate Condition 98(a)–(b), Garnet will not engage in post driving activities within 100 feet of any existing, active potable water supply well, and will not engage in any blasting within 1,000 feet of any known existing, active water supply well or water supply intake on a non-participating property. Under Certificate Condition 98(c), Garnet will engage a qualified third party to perform pre- and post-construction testing of the potability of active, potable water supply wells on non-participating parcels to ensure that the wells are not impacted. The water wells to be tested include those

[32] *See e.g.,* Trelina Order at Certificate Condition 93; Flint Mine Order at Certificate Condition 77(a); Hecate Albany Order at Certificate Condition 88; Hecate Greene Order at Certificate Condition 97; High River Order at Certificate Condition 87; High Bridge Order at Certificate Condition 98; East Point Order at Certificate Condition 88.

within 100 feet of collection lines or access roads; those within 200 feet of post installations; and those within 500 feet of HDD operations. Pursuant to Certificate Condition 98(d), if the New York State Department of Health ("DOH") determines that water supplied by an existing, active potable water supply well met the federal and State standards for potable water before construction, but failed to meet those standards after construction because of Project activities, Garnet will cause a new water well to be constructed, in consultation with the property owner, at least 100 feet away from collection lines and access roads and at least 200 feet away from other Project Components.

Pursuant to the SEEP Guide § A(5)(b), prior to site preparation, Garnet shall submit stream and waterbody information, including the location of any known potable water sources, including springs and wells within 100 feet of Project Components and 500 feet of HDD locations. Garnet shall also describe precautionary measures to be taken to protect each water source.

Garnet's Certificate Conditions are consistent with the approved certificate conditions in other Article 10 projects.[33] As explained in Updated Application Exhibit 23, Garnet corresponded with the DOH to identify the locations of existing water wells and data on wells within 500 feet of the Project Area.

Q. Can you address Ms. Lillie's claims regarding whether Garnet should conduct more investigations of potential impacts to drinking water supplies?

[33] *See e.g.,* Trelina Order at Certificate Conditions 22(b), 97; Hecate Albany Order at Certificate Condition 48; High River Order at Certificate Conditions 19(b), 90; East Point Order at Certificate Conditions 17(b), 90.

A. Ms. Lillie claims that Garnet "should be required to conduct a more in-depth investigation into potential drinking water supply impacts for all residents in the Project area. This investigation should include a door to door canvasing to identify all homes within the Project area that are served by wells" (Lillie Testimony, p. 10, ll.18–21). Pursuant to Certificate Condition 98(c), Garnet will engage a qualified third party to perform pre- and post-construction testing of the potability of active, potable water supply wells on non-participating parcels to ensure that the wells are not impacted. The water wells to be tested include those within 100 feet of collection lines or access roads; those within 200 feet of post installations; and those within 500 feet of HDD operations.

Q. Do you agree with Ms. Lillie's concerns regarding traffic increases?

A. No. Ms. Lillie expressed concern that traffic would significantly increase on roads during construction and requested that a speed limit be added (Lillie Testimony, p. 11, ll. 11–13).

Pursuant to Certificate Condition 63, Garnet will file a Traffic Control Plan as a Compliance Filing. Traffic Control Plans shall be developed and submitted covering all construction phases or for each phase of construction based on anticipated traffic flow impacts and proposed controls and mitigation measures.

Direct Testimony of RPNCBC witness Mr. Kent Gardner

Q. Did Mr. Gardner present any estimates of direct employment, payroll, construction, or operational expenditures?

A. No. He did state that the Applicant's estimates "appear roughly accurate" ("Gardner Testimony, p. 9, ll. 1–2).

Q. What did DPS staff say about the Applicant's estimates of direct employment, payroll, and construction expenditures?

A. DPS staff explain that the Applicant's direct estimates were consistent with other projects being reviewed by them. DPS states that "[t]he Applicant's direct construction and operation job impact estimates appear to be reasonable for the scale of the Project as compared to other New York State solar generation projects" (DPS SPSS, p. 45, ll. 12–16).

Q. Does the DPS staff assert that the Siting Board should give little or no weight to secondary impacts in making its decision under Article 10?

A. Yes. DPS "Staff recommends that the Siting Board assign little to no weight to the Applicant's indirect and induced jobs estimates in determining the Project's socioeconomic benefits in this case as well" (DPS SPSS, p. 49, ll. 8–12). Consistent with NextEra's practice in its past several Article 10 proceedings, Garnet will focus on direct benefits at this time for purposes of this Article 10 proceeding.

Q. Did Mr. Gardner accurately describe the analysis conducted by the Applicant concerning the estimation of direct jobs and payroll estimates?

A. Not entirely. He concludes that "[t]he applicant has employed industry standard methods of assessing the economic impact of new economic activity" (Gardner Testimony, p. 7, ll. 6–7). Secondary impacts were estimated using the Jobs and Economic Development Impact ("JEDI") model, to which Mr. Gardner refers. However, direct employment and payroll estimates were calculated by Garnet using detailed cost information particular to the Applicant's construction development experience, not the JEDI model as described in Application Exhibit 27 (*See* App. Ex. 27 at 2).

Q. Although not germane to the estimation of direct benefits, with respect to secondary impacts, one of Mr. Gardner's criticisms of the JEDI model is related to the sourcing of equipment and labor. Can you address his assertion?

A. Yes. Mr. Gardner states that "these "estimates are built on behavioral assumptions, particularly where equipment will be purchased and where labor will be sourced. These decisions will not be made until final supplier contracts have been met and the work scheduled" (Gardner Testimony, p. 8, ll. 20–22). While final contracts will impact the sourcing of "Materials & Equipment" estimates assumed in JEDI, this point is irrelevant to the modeling done for the Project. A conservative approach was taken, with no New York State spending assumed for costs in this category (App. Ex. 27, tbl.27.5). Any materials and equipment, such as electrical wiring and other components, which are purchased within the State would, therefore, increase the direct, indirect, and induced impacts as zero was assumed.

Q. Does Mr. Gardner essentially dismiss the employment, payroll, and construction expenditures that the Project will create, and do you agree with his opinion?

A. Yes, he does. And, no, I do not agree with Mr. Gardner's opinion. Mr. Gardner states that "employment and payroll is *de minimus* [sic] and should have little impact on the siting decision" (Gardner Testimony, p. 9, ll. 7–9). Approximately 228 FTE direct jobs and $25.6 million payroll, however, are expected to be created during construction (App. Ex. 27 at 8). Additionally, over the 30-year life of the Project, a total of more than 50 FTE direct jobs and $5.2 million (2021$) in payroll will be created through the Project's operation and maintenance (App. Ex. 27 at 14). Time and again construction workers have stated at public statement hearings and at open houses that a so-called "temporary"

construction job is a vital piece in the string of temporary jobs making up one or more years of full-time employment. Thus, the Project's creation of these direct benefits is in the public interest and has been cited as so in past Article 10 decisions by the Siting Board. In this case, DPS staff concurs (DPS SPSS, p. 43, l. 14–p. 45, l.9).

Prepared Testimony of Michael Saviola – AGM

Q. Please address the direct testimony of AGM staff's witness Mr. Michael Saviola.

A. Mr. Saviola states that AGM "discourages the conversion of farmland to a non-agricultural use" (AGM staff Testimony, p. 6, ll. 4–5). With respect to utility-scale renewable energy projects, Mr. Saviola states that "[t]he Department's goal is for projects to limit the conversion of agricultural areas within the Project Areas, to no more than 10% of soils classified by the Department's NYS Agricultural Land Classification mineral soil groups 1-4, generally Prime Farmland soils, which represent the State's most productive farmland" (AGM staff Testimony, p. 7, l. 21–p. 8, l. 2).

Mr. Saviola also raises generic issues about AGM's perspective concerning the construction of solar energy facilities on agricultural lands, which have been previously addressed by the Siting Board in other Article 10 proceedings (AGM staff Testimony, p. 6, l.–p. 11, l. 19). Our testimony will address the specific recommendations Mr. Saviola makes regarding the Project.

Article 10, the State Energy Plan, the CLCPA and the recently enacted Accelerated Renewable Energy Growth and Community Benefit Act ("Accelerated Renewables Act") do not specify any agricultural standards that must be satisfied, nor do they attempt to usurp the rights of private landowners to voluntarily decide if they wish to

grow food on all their land or use a portion of it to allow the generation of renewable electricity in order to support their farm operations.

Q. Does siting the Project on Prime Farmland soils amount to a permanent conversion of agricultural soils to a non-agricultural use, as Mr. Saviola argues (AGM staff Testimony, p. 8, ll. 18–20)?

A. No. Although agricultural land within the LOD will not be available for farming during the life of the Project, the soils will be suitable for agricultural use after the Project is decommissioned.

Mr. Saviola speculates that siting a solar energy project on agricultural soils constitutes a permanent conversion of those soils because a solar project and its ancillary facilities "makes it infeasible to continue farming on viable agricultural land within the Project area" (AGM staff Testimony, p. 8, l. 23–p. 9, l. 1).

Mr. Saviola also asserts that "[i]mpacts to agricultural lands remaining outside of the security fencing also has a highly [sic] likelihood to become abandoned and/or orphaned" (AGM staff Testimony, p. 9, ll. 7–8).

Mr. Saviola voices concern, generally, that narrow strips of land outside security fencing will become abandoned or orphaned due to limitations of acreage and maneuverability for modern mechanized equipment (AGM staff Testimony, p. 9, ll. 10–14). Mr. Saviola does not identify any "narrow strips" of land outside the Project's proposed fence line with any specificity. Rather, his is simply a general discussion of his concerns that seem applicable to any construction project that may take place on farmland. The decision of how to manage land outside the fence line, however, is up to

the individual landowners that retain control of those lands. Crop production in these areas would be able to continue throughout the life of the Project.

As to the Project itself, the Applicant has agreed with the landowners from whom it is leasing property, that lands outside the fence line will be available for continued farming. Importantly, which land will be leased for the placement of Project Components and which land was excluded by the landowners was the subject of voluntary negotiations. AGM staff should defer to the landowners' preferences. These arguments have previously been rejected by the Siting Board in multiple Article 10 proceedings.

Regardless of the length of a project's lease term, merely occupying an area or placing solar panels on agricultural soil is not a permanent impact; a permanent impact requires placement of permanent foundations or structures.[34] The Project has an estimated life of 30 years. At the end of the Project's useful life, Garnet will decommission the Project in accordance with the AGM Guidelines to the maximum extent practicable.

As the Siting Board has previously explained, although agricultural lands will be converted to non-agricultural use during the life of the Project, decommissioning and post-decommissioning restoration measures "result in minimal permanent impacts to agricultural resources."[35]

Mr. Saviola also argues that, given the State's energy goals, the temporary conversion of agricultural soil will be permanent because AGM assumes that facilities will be upgraded and re-leased to meet "growing or static renewable energy demand, in

[34] *See* Trelina Order at 30; Case 17-F-0597, High River Order at 48; East Point Order at 31–32; Hecate Albany Order at 27.

[35] East Point Order at 31–32.

this case, 35 years from energization. The Department further asserts that as long as [State] incentives for the development of renewable energy exists, the complete decommissioning of solar electric generation, and full resumption to agricultural use is not likely to occur" (AGM staff Testimony, p. 7, ll. 6–11). In our view, however, it is equally speculative that State incentives will remain constant, that no participating landowners will elect to resume agricultural activities within the Project Area, and that all participating landowners will agree to release their land for solar generation at that time.

New York State is combatting the devasting impacts of climate change now. After decommissioning of the Project, participating landowners will be able to resume agricultural activities on the land within the Project Area if they choose to do so. The Siting Board has previously determined "that speculation regarding whether or not landowners will resume agricultural use of restored lands does not warrant the conclusion that the impacted lands would be permanently converted, notwithstanding decommissioning and restoration."[36]

There is no requirement in Article 10 or its implementing regulations that a USSE project return a site to agricultural production at the end of the project's useful life. It will be up to the landowner to decide how best to use their land. As stated in proposed Certificate Condition 57, the final Decommissioning Plan, which will be submitted as a Compliance Filing, will comply with the AGM Guidelines to the maximum extent practicable. Garnet will consult with AGM to find reasonable alternatives when compliance is impracticable.

[36] *Id.* at 32.

Q. Does the Project minimize permanent conversion of Prime Farmland soils to the maximum extent practicable in accordance with AGM's 10% goal (AGM staff Testimony at p. 12, l. 22 – p. 13, l. 3)?

A. Yes. The Project's LOD encompasses approximately 1,054 acres. As a result of the Applicant's Update to the Application (January 2022), approximately 185 acres of solar arrays have already been eliminated from the Project layout (*see* App. Ex. 4 Update at 1). This reduction of arrays resulted in an overall reduction of Prime Farmland within the LOD by approximately 37 acres and reduced permanent impacts to Prime Farmland by approximately 2 acres. Approximately 492.2 acres of land within the LOD is classified as Prime Farmland. However, only approximately 12.6 acres (approximately 2.6% of Prime Farmland within the LOD) will be permanently impacted by the installation of Project Components (*id*.). The rest of the land will be restored and maintained in compliance with the AGM Guidelines to the maximum extent practicable. This permanent impact is well within AGM's 10% goal.

In addition, no statutory or regulatory support is cited for AGM's proposed 10% or less Prime Farmland soil conversion "goal" that "the production of food is more essential than the generation of [renewable] electricity," or that soil classifications 1-4 should be avoided, even if it means interfering with the development of a renewable facility contracted to sell renewable energy credits to NYSERDA. The Certificate Conditions conserve and protect agricultural lands; it is the responsibility of AGM, and not private solar developers, to encourage the development of farming. That charge cannot be used to thwart the renewable energy goals of the State.

The LOD includes all active Project lands, such as the fenced area. Although the LOD will be unavailable for farming during the useful life of the Project, undisturbed areas outside of the fence line will be available for landowners to use for farming operations, if desired.

Q. Can you put Mr. Saviola's acreage estimates into perspective (AGM staff Testimony, p. 14, ll. 3–12)?

A. Mr. Saviola asserts that "the proposed Project will impact a little over 500 acres of land classified as Prime Farmland" (AGM staff Testimony, p. 22, ll. 15-16). However, of the 492.2 acres of soil within the LOD that are classified as Prime Farmland, only 2.6% (12.6 acres) will be permanently impacted by the installation of Project Components. This accounts for just 0.2% of all Prime Farmland (7,772.6 acres) of Prime Farmland in the Town of Conquest and 0.006% (221,170 acres) of Prime Farmland in Cayuga County (App. Ex. 4 Update at 44).

Q. Can you explain how the Project will comply with the AGM Guidelines?

A. Yes. Mr. Saviola claims that Garnet's response to IR AGM-1 "merely reiterates" the AGM Guidelines, and that "[t]he response does not demonstrate how impacts to agricultural lands comprised of Mineral Soil Groups 1–4 will be avoided, minimizes [sic] or mitigated to the maximum extent practicable" (AGM staff Testimony, p. 14, ll. 15–18).

As Mr. Saviola acknowledged in his testimony, Garnet has agreed to comply with the AGM Guidelines in its Certificate Conditions and that Garnet will consult with AGM to develop alternatives where compliance with the AGM Guidelines would be impracticable (AGM staff Testimony, p. 8, ll. 8–15). Certificate Conditions 20, 57(e),

66(f), 77, 88(b), and 95 describe how the Project will engage in construction, maintenance, and decommissioning in compliance with the AGM Guidelines to the maximum extent practicable.

Under Certificate Condition 77, an Agricultural Area Plan will be submitted as a Compliance Filing prior to commencement of construction to identify any programs, policies, and procedures implemented that are consistent with the AGM Guidelines and will work with AGM to find reasonable alternatives when Garnet determines that the AGM Guidelines are not practicable. Certificate Condition 95 requires that Garnet construct the Project consistent with the Guidelines to the maximum extent practicable.

Garnet's response to IR AGM-1 (Ex. AGM-1) includes site-specific details regarding the Project's compliance with the AGM Guidelines; and the SEEP Guide Sections A(7)(a)(v) and B(10) require Garnet to provide site-specific techniques to minimize impacts to agricultural resources in accordance with the AGM Guidelines in the final SEEP.

Q. What does Mr. Saviola recommend regarding potential impacts to agricultural lands from access roads (AGM staff Testimony, p. 12, ll. 7–17)?

A. Mr. Saviola states that "the Applicant should design access roads in a manner that does not divide larger fields into smaller fields. Access roads should be constructed 'at grade', meaning the stone surface should be level with the surrounding adjacent field or slightly crowned" (AGM staff Testimony, p. 12, ll. 7–10).

Q. Do the AGM Guidelines address this issue?

A. Yes. The AGM Guidelines provide that:

> The surface of access roads located outside of the generation facility's security fence and constructed through agricultural

> fields shall be level with the adjacent field surface. If a level road design is not feasible, all access roads should be constructed to allow a farm crossing (for specific equipment and livestock) and to restore/ maintain original surface drainage patterns (AGM Guidelines at 2–3).

Under Certificate Condition 95, Garnet will plan and construct the Project consistent with the AGM Guidelines to the maximum extent practicable and will consult with AGM when deviation from the AGM Guidelines is necessary. As explained in its response to AGM IR-1, when siting access roads, Garnet worked with participating landowners to place access roads in areas that would not disrupt farming operations outside of the Project fence line in the future, and collocated access roads and collection lines to limit the amount of trenching and temporary construction impact to the maximum extent practicable.

While access roads are necessary to traverse the Project during construction and operation phases, they have been proposed at the minimum width necessary to provide adequate area for maintenance and emergency vehicle access in order to reduce the amount of permanent agricultural land impacts. In addition, during the update to the Article 10 Application, the amount of land used for access roads on land designated as Agricultural Land by the NYS Office of Real Property Services was reduced from 12.3 acres to 10.2 acres.

Q. Please address Mr. Saviola's statement regarding Garnet's proposal to use fixed racking to reduce the amount of grading required (AGM staff Testimony, p. 15, ll. 11–15).

A. Garnet explained in IR AGM-2 that it had considered tracker racking systems, but that the relatively steep, sloping topography of the land made the systems cost prohibitive for the Project. Mr. Saviola agrees with Garnet's statements regarding topography but

asserts that cost should not be the determinative factor in choosing a system (AGM staff Testimony, p. 15, ll. 6–16).

Contrary to Mr. Saviola's inference, cost was not the only consideration. Garnet carefully considered which system will be best suited for the Project. Exhibit 9 of the Application explains the alternative technologies that Garnet considered. Garnet has proposed fixed solar racking technology because it would require the least amount of grading for the site and will allow Garnet to fit more solar panels within the Project Area without having substantial amounts of cut and/or fill material that would need to be removed from and/or hauled to the Project Site. Thus, potential environmental impacts, available land area, and expected renewable energy production were other factors considered (App. Ex. 9 at 10–11).

Q. What does Mr. Saviola recommend regarding co-utilization (AGM staff Testimony, p. 16, ll. 2–6)?

A. Mr. Saviola claims that "[t]here is ample space inside the fence for agricultural activities such as sheep grazing, apiary incorporation and pollinator species, and small-scale grass hay production" (AGM staff Testimony, p. 16, ll. 2–4). Exhibit 9 of the Application presents alternative layouts as required by Article 10. The Applicant has reduced the Project footprint to the maximum extent practicable and cannot reduce the capacity of the Project without jeopardizing its ability to produce enough renewable energy to comply with the deliverable requirements in its NYSERDA contract.

As Garnet explained in its response to IR AGM-3 (Ex. AGM-3), it would not be practicable for Garnet to host farming operations within the Project fence line and the

participating landowners have not requested the option to do so. Mr. Saviola did not present any specific recommendations for the Project on these topics.

Q. Please describe Mr. Saviola's opinion of what a private landowner should do with drain tile systems.

A. Mr. Saviola states that if a landowner chooses to lease land to a solar energy facility, the landowner's capital investment of installing a tile drain system "will not be fully realized and future crop yields will be lost" (AGM staff Testimony, p. 17, ll. 7–8). This is another instance of Mr. Saviola attempting to direct how he believes private landowners should utilize their land. Participating landowners make their own decisions regarding how to operate their farms within the confines of the law. There is nothing in any State law, and Mr. Saviola cites none, where New York State should prohibit landowners from seeking to supplement their farm income with the regular, annual benefit of a lease payment to support renewable energy development and to save their farmland for future generations.

Q. What are Mr. Saviola's recommendations regarding agricultural monitoring (AGM staff Testimony, p. 17, l. 19–p. 19, l. 3)?

A. Mr. Saviola recommends that the Project requires both a full-time environmental monitor and an agricultural drainage specialist, and that drain tile repairs should be monitored by a third-party agricultural drainage specialist in accordance with Garnet's drain tile repair plan (AGM staff Testimony, p. 18, l. 21–p. 19, l. 3)?

Q. Do the AGM Guidelines require a separate agricultural monitor for renewable energy projects over 50 MW?

A. No. The AGM Guidelines state that an environmental monitor "may serve dual inspection roles associated with other Project permits and/or construction duties, if the agricultural workload allows" (AGM Guidelines at 1).

Q. Does precedent exist for utility-scale renewable energy projects to have a single, full-time environmental monitor to oversee environmental and agricultural matters?

A. Yes. Nearly every certified Article 10 project has allowed for a single, independent, third-party monitor to act as both the environmental and agricultural monitor if AGM agrees that the monitor is qualified for both positions.[37] As explained in Certificate Condition 20(a), Garnet's environmental monitor will have experience, be trained on, or have qualifications to monitor agricultural issues that could arise during construction and restoration of the Project, consistent with the AGM Guidelines. According to Certificate Condition 96, the Environmental Monitor will identify any issues through on-site monitoring of all agricultural areas impacted by construction and will keep open correspondence between contacts with respective farmland operators and AGM to properly solve issues as appropriate.

Q. Mr. Saviola recommends that "the most efficient and effective way to repair [drain tiles] without interrupting construction schedules is to make the repair immediately upon the completion of cable installation prior to backfilling the trench. Or flag and geolocate the locations and return later in the project to make the necessary repairs" (AGM staff Testimony, p. 18, ll. 16–19). Do you concur?

[37] *See e.g.,* Trelina Order at Certificate Condition 84(a); Flint Mine Order at Certificate Condition (40)(b); High Bridge Order at Certificate Condition 47; High River Order at Certificate Condition 17(a); East Point Order at Certificate Condition 16(a); Hecate Albany Order at Certificate Condition 72.

A. Yes. As explained above, Garnet has committed in its Certificate Conditions to implement the AGM Guidelines to the maximum extent practicable, and where deviations are required, to consult with AGM on reasonable alternatives (Certificate Conditions 20, 57(e), 66(f), 77, 88(b), and 95; SEEP Guide Section A(7)(a)(v)). Garnet will include Mr. Saviola's recommendation for the tile repair/replacement as part of its implementation of the AGM Guidelines.

Garnet also explained in its response to IR AGM-4 that existing drain tiles will be identified and located before construction to the extent reasonably possible. During or after construction, Garnet will check for damage and repair or replace drain tiles consistent with the AGM details for Repair of Severed Tile Line to the maximum extent practicable, or as specified in landowner lease agreements. This work will be performed by a qualified drain-tile specialist. Garnet will coordinate with landowners when monitoring drain tiles post-construction to ensure repairs or replacements are properly functioning.

Q. Mr. Saviola claims that "the Applicant has failed to propose true mitigation measures or efforts to minimize the impact to agricultural resources" (AGM staff Testimony, p. 19, ll. 10–11).

A. We disagree. We have stated in this Rebuttal Testimony that the Project will adhere to the AGM Guidelines to the maximum extent practicable and consult with AGM if there are any issues. Updated Application Exhibit 4, Section 4(v) and the Response to IR AGM-1 (Ex. AGM-1) detail the measures the Project is proposing. Certificate Conditions 20(a), 57(g), 66(f), 77, 95, and 96 also contain avoidance and minimization measures that have previously been adopted by the Board. In addition, the "Facility's

construction and operation minimizes or avoids significant adverse impacts to . . . natural resources including prime agricultural soils, wetlands and T&E species and habitats, to the maximum extent practicable" (DPS SPSS, p. 53, ll. 9–15).

In addition, lease payments to the participating landowners help keep farm parcels intact during the life of the Project, rather than being sold or subdivided for other purposes, such as industrial parks or residential subdivision developments that would permanently preclude agricultural operations on the land. Application Exhibit 31 notes that the Town of Conquest has not adopted zoning regulations that would prevent development that may disrupt farming practices, such as homes or commercial buildings with permanent foundations.

Garnet has made significant efforts to locate Project Components to minimize impacts to agricultural lands. The solar panels were selected for efficiency and effectiveness, which minimizes the amount of land required for solar generation. The Project will utilize racking systems supported by driven posts, as opposed to concrete foundations, creating minimal ground disturbance because no excavation is required for installation. The Project will have a fenced-in area of approximately 901.6 acres. Although the solar panels will cover 370.2 acres of agricultural land, only 14.7 acres of permanent ground disturbance to agricultural land will occur as part of this Project. No offsite staging and/or storage is proposed as part of the Project, further reducing the potential impact to active farmland.

Garnet has proposed some grading and excavation. However, where these activities are proposed, topsoil will be stripped, stockpiled, and returned to reduce impacts.

Impacts to current agricultural uses around the Project Area will be further minimized by limiting the number of access road entrances from public roads. Upon decommissioning, the Project Area will be returned to its substantially pre-construction conditions and be made available for agricultural use.

Application Exhibit 21 states that utility lines outside of the fence line will be buried in agricultural fields wherever practicable to minimize interference with mechanized farming. Where overhead utilities must cross farmland, Garnet will minimize agricultural impacts by using taller structures that provide longer spanning distances and locate poles on field edges to the extent practicable. Electrical conductors will be buried close to the road edge to avoid disturbing agricultural cultivation/subsoiling.

Restored agricultural areas will be reseeded as specified by the landowner to maintain consistency with the surrounding areas.

Upon decommissioning, the Project Area will be restored to as close to its previous condition as practicable with recommendations from the landowner, the Soil and Water Conservation District, and AGM. Access roads in agricultural areas will be removed unless the landowner requests otherwise. Financial assurance, such as a letter of credit, that the funds for this work will be available, is provided within the Decommissioning and Restoration Plan.

In its response to IR AGM-1, Garnet further explains that proposed permanent access will be established as soon as possible by removing topsoil as directed by the environmental monitor. Any topsoil removed from areas that will be permanently converted will be stockpiled and spread in adjacent agricultural areas within the LOD.

Agricultural areas temporarily disturbed during construction will be de-compacted to a depth of up to 18 inches to a level of no more than 250 pounds per square inch when measured with a soil penetrometer, and where topsoil was stripped, soil decompaction will be conducted prior to replacing the topsoil. Rocks four inches and larger will be removed from the subsoil surface prior to topsoil replacement. Topsoil will be replaced to the original depth and contours where possible. Soil decompaction and topsoil replacement will be avoided after October 1, but if areas are restored after October 1, provisions will be made to restore and reseed eroded and exposed areas the following spring to establish proper vegetative cover.

Access roads will be re-graded as needed to allow farm equipment crossing and to restore the original drainage patterns or incorporate the newly designed drainage pattern. Existing drain tiles will be identified and located before construction as much as reasonably possible.

During and after construction operations, existing areas with known drain tiles within the LOD will be checked for indications of damage, and any damaged tiles will be repaired or replaced consistent with AGM's details for "Repair of Severed Tile Line" to the maximum extent practicable. Garnet will then coordinate with the landowner to continue to monitor drain tile repairs post-construction.

Garnet will hire an environmental monitor to oversee construction and restoration on agricultural land. The environmental monitor will coordinate with AGM, Division of Land and Water Resources, to develop an inspection schedule and solution if any goal in the AGM Guidelines is not met, consistent with the Certificate Conditions.

As explained above, under Certificate Conditions 95, Garnet will minimize agricultural impacts consistent with the AGM Guidelines to the maximum extent practicable. SEEP Guide Section A(7)(v) also explains that, prior to site preparation, Garnet will submit site-specific techniques to minimize and avoid construction-related impacts to agricultural resources, consistent with the AGM Guidelines.

Q. Mr. Saviola claims that "Farms demand a certain acreage to meet their business, long-term staffing, and environmental objectives and to remain viable. If leased land is abruptly lost to another use, such as a solar installation, the farm will grow and market less produce, grains, forages, and livestock products; may have to downsize and lay-off employees; and could be challenged to have adequate acreage for proper manure nutrient recycling. Such changes may force the farm to close" (AGM staff Testimony, p. 10, ll. 10–15).

A. As described within Exhibit 4 of the Article 10 Application, the Project will support the local agricultural economy throughout its life (App. Ex. 4 Update at 29–30). Through land agreements, the Project will result in the infusion of revenue into local farms, thereby diversifying their income. This may allow farms to make ends meet for the life of the Project without laying off employees or downsizing, despite fluctuations in revenue from farming operations.

Again, this is AGM inappropriately second guessing a landowner's private, economic decision to supplement its income with solar lease payments. As previously stated, lease payments help parcels remain intact during the life of the Project, rather than being sold or subdivided for other purposes, such as industrial parks or residential

subdivision developments that would permanently preclude agricultural operations on the land.

Q. How does Mr. Saviola characterize lease payments to participating landowners and how has the Siting Board treated lease payments?

A. Mr. Saviola states that AGM "recognizes the financial benefits of participating landowners; however, farm operator(s) lease payments are not viewed by the Department as a benefit to agriculture when the production of crops, livestock and livestock products are downsized or eliminated as a result of the construction of utility-scale solar" (AGM staff Testimony, p. 7, ll. 12–15).

In contrast, the Siting Board has affirmed that "a significant amount of the economic benefit of renewable energy facilities accrues to local participating landowners, who often have strong connections to the land and local community. As a result, direct economic benefits accruing to participating landowners are often reinvested locally or regionally, and provide local and regional economic support."[38] The Siting Board has also explained that, over the life of a project, farm operators may see improved soil productivity associated with environmental benefits that come from leaving soil in a project area untouched, such as reduced runoff and soil erosion.[39]

Q. Do you agree with Mr. Saviola's opinion that the Project will have a disproportionate adverse impact on agricultural land (AGM staff Testimony, p. 20, ll. 2–3)?

A. No. Mr. Saviola references the February 2020 American Farmland Study to make generalized statements about the impact of siting solar energy facilities on agricultural

[38] Flint Mine Order at 14–15.

[39] *See* Hecate Albany Order at 31–32.

land (AGM staff Testimony, p. 20, ll. 2–16). When the Commission adopted the Clean Energy Standard modifications in 2020, it determined that even if all the approximately 8,110 MW of USSE were installed on agricultural land, approximately 0.5% of New York's agricultural lands could be occupied by solar facilities to meet the goals set forth in the CLCPA (including the goal to reach 70% renewable energy generation by 2030).[40] As the Commission has explained: "Given the minor conversion of land compared to the available crop and pastureland, project-specific agency guidelines, and restoration following decommissioning, significant adverse impacts on land use and land cover would not be expected from incremental utility-scale solar development."[41]

The Siting Board has also previously observed that the agricultural community faced development pressures; "[h]owever, as [AGM] acknowledges, it is the structure of today's agricultural markets and related market demand driving increased scale and consolidation of farm operations. The record here does not support the argument that the solar industry is responsible for an outsized role in the development pressures facing agricultural lands."[42]

Q. Please describe Mr. Saviola's recommendations regarding topsoil treatment.

A. Mr. Saviola recommends that Garnet establish an additional temporary workspace width of 10 feet along the collection lines in the agricultural fields for the purpose of providing additional protection to the topsoil stockpile (AGM staff Testimony, p. 20, l. 19–p. 21, l. 15).

[40] *See* Case 15-E-0302, *Proceeding on Motion of the Commission to Implement a Large-Scale Renewable Program and a Clean Energy Standard*, Order Adopting Modifications to the Clean Energy Standard (Oct. 15, 2020), at App'x E, 7–8.

[41] *Id.* at 8.

[42] Hecate Albany Order at 27–28.

Q. What do the AGM Guidelines provide?

A. The AGM Guidelines state:

> Stripped topsoil should be stockpiled from work areas (e.g. parking areas, electric conductor trenches, along access roads, equipment pads) and kept separate from other excavated material (rock and/or subsoil) until the completion of the facility for final restoration. For proper topsoil segregation, at least 25 feet of additional temporary workspace (ATWS) may be needed along "open-cut" underground utility trenches (AGM Guidelines at 2).

The AGM Guidelines already provide up to 25 feet. Garnet has agreed to implement the AGM Guidelines to the maximum extent practicable and to correspond with AGM if alternative solutions are necessary. Mr. Saviola's concerns have, therefore, been addressed.

Q. Please describe Mr. Saviola's conclusion.

A. In his conclusion, Mr. Saviola makes general recommendations regarding co-utilization or agrovotalics; the Project's scope; the Project's design; and alternative siting to minimize what Mr. Saviola maintains to be a large-scale impact to Prime Farmland despite Siting Board precedent consistently stating otherwise, which is explained in detail above (AGM staff Testimony, p. 23, ll. 18–22). These recommendations are vague and unsupported, and should, therefore, be rejected.

Q. Does that conclude your Rebuttal Testimony at this time?

A. Yes, it does.

William J. Boer, PP, AICP

Environmental Services Project Manager

EDUCATION
B.S., Environmental Planning, Plymouth State University, New Hampshire 2003

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS
American Institute of Certified Planners, (#021636), since 2009
Professional Planner, New Jersey, (License #33LI00599400), since 2007

PROFESSIONAL EXPERIENCE

***NextEra Energy Resources, LLC*, Environmental Services Project Manager (2018-Present)**

- Environmental Services Project Manager for renewable energy projects in the states of New York and New Jersey.
- Responsible for preparation of all applications and supporting environmental studies submitted under Article 10 of the Public Service Law and the State Environmental Quality Review Act including the following renewable energy projects:
    - Calverton Solar Energy Center – 22.9 MW solar project
    - East Point Energy Center – 50 MW solar project
    - High River Energy Center – 90 MW solar project
    - Watkins Glen Solar Energy Center – 50 MW solar project
    - Excelsior Energy Center – 280 MW solar and 20 MW energy storage project
    - Trelina Solar Energy Center – 80 MW solar project
    - Garnet Energy Center – 200 MW solar and 20 MW energy storage project
    - North Side Energy Center – 180 MW solar
- Manage all environmental development activities and permitting issues, energy facility siting, and report analyses/conclusions. Participate in agency, stakeholder and public meetings.

***Tetra Tech*, Supervising Project Manager (2018)**

- Responsible for providing project management on renewable energy projects located throughout the states of New York and New Jersey. Perform writing and coordination of required technical reports and studies, oversee direction of project information/data between clients and Tetra Tech technical directors, and provide general client support to advance projects through regulatory review processes and into construction.

***TRC Environmental Corporation*, Office Practice Leader/Environmental Planner (2013-2018)**

- Responsible for managing a staff of 17 employees in three separate offices (Lyndhurst, NJ; Ithaca, NY; Plymouth Meeting, PA) and providing project management on complex projects in varied fields such as electric generation facilities, infrastructure and pipelines.
- Liaison with federal and state agencies and local government officials for application review processes.
- Extensive experience with the New Jersey Department of Environmental Protection – Division of Land Use Regulation, New Jersey Municipal Land Use Law, New York State Board on Electric Generation Siting and the Environment (Article 10), New York State Department of Environmental Conservation, New York State Environmental Quality Review Act (SEQRA) and the United States Army Corps of Engineers.
- Preparation and submittal of jurisdictional permit applications to federal and state agencies and site plan/special permit applications to local planning/zoning boards for renewable energy projects.
- Review of environmental regulations in order to determine project compliance.

***French & Parrello Associates, P.A.*, Senior Staff Planner (2006-2013)**

- Member of the Land Development department and responsible for project planning from conceptual layout through project design and agency/permit approval for private and public sector clients. Served as lead wetland delineator performing delineations in accordance with USACE methodology.

Benjamin B. Ritter, EIT

Solar Project Engineer

EDUCATION
B.S., Mechanical Engineering – Green Engineering, Western New England University, Massachusetts 2013

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS
Engineer in Training, NCEES
PV Installation Professional, NAPCEP
PV Technical Sales, NAPCEP

PROFESSIONAL EXPERIENCE

***Working on Behalf of NextEra Energy Resources, LLC*, Solar Project Engineer (2021-Present)**

- Solar Project Engineer for solar energy projects in the states of New York and Florida.
- Oversees the engineering activities of the 3rd part contractor during the design and construction phases of utility scale solar projects.
- Support the preparation of applications and environmental studies submitted under Article 10 of the Public Service Law and the State Environmental Quality Review Act including the following renewable energy projects:
    - Excelsior Energy Center – 280 MW solar and 20 MW energy storage project
    - Trelina Solar Energy Center – 80 MW solar project
    - Garnet Energy Center – 200 MW solar and 20 MW energy storage project
    - North Side Energy Center – 180 MW solar
- Provide engineering support to development activities and permitting issues, energy facility siting, and report analyses/conclusions.

***K2 Systems LLC*, Scrum Product Owner/Product Development Engineer (2019-2021)**

- Lead cross functional team in engineering, procurement, marketing, and sales for solar product lines.
- Aligned efforts driving products from customer need to solution, mass production and delivery.
- Worked with high volume customers to ensure their needs were being met in product pipeline.
- Presented development status to clients and directors using Microsoft PowerPoint and Teams.
- Designed, prototyped, tested innovative racking and mounting solutions for solar PV systems.
- Patented flashings, gaskets, and roof mounts with economic and minimal tool installation capabilities.
- Conceptualized parts with SolidWorks, worked with manufacturers to ensure production ability.
- Created engineering drawings, QC documents, technical manuals, computer generated images.

***Harvest Sun Solar*, Project Manager/Solar Engineer (2016-2019)**

- Proposed projects to customers using Aurora Solar software to outline generation, cost, and ROI.
- Liaison between venders, sales, install crew, electricians, AHJ, inspectors, and utility company.
- Researched emerging technologies to remain up to date on cutting edge component offerings.
- Implemented NABCEP Installation Professional Job Task Analysis to ensure quality installations.
- Designed systems including string sizing, single-line/three-line diagrams, and structural analysis.
- Monitored system generation and carried out maintenance tasks to improve performance issues.
- Worked with manufacturers to troubleshoot issues with inverters, batteries, modules, optimizers.
- Trained/managed install crew on NABCEP best practice principles, OSHA/NEC safety standards.

***South Mountain Company*, Solar PV Technician (2015-2016)**

- Executed over a megawatt of residential and commercial projects alongside NABCEP professionals.
- Designed and installed PV systems, performed site assessments, maintenance, and troubleshooting.
- Managed installs as Lead Technician, achieved NABCEP PV Installation Professional certification.
- Created spreadsheet automating ROI timeline, achieved NABCEP PV Technical Sales certification

Pat Green

Environmental Services Project Manager

EDUCATION
B.T., Renewable Resources, Morrisville State College, New York 2010

PROFESSIONAL EXPERIENCE
Mr. Green is an Ecologist and GIS Analyst with professional experience in natural resource management, permitting, agency coordination, multiple field team management, technical writing, wildlife ecology, plant ecology and identification, and data management. Mr. Green's strong knowledge of ecosystems, GIS/GPS technologies, and has the problem-solving skills to lead environmental components of projects requiring many levels of permitting with different agencies. Mr. Green has a strong background in wetland delineation, mitigation site assessment, orthoimagery analysis, Endangered Species Act surveys, coordination, technical reporting, impact analysis, and GIS mapping/data management, which provides for a wide platform of experience and skillsets to draw from when planning surveys, building permit applications, and finding creative solutions to complex problems. Mr. Green's range of experience from ground-level work on scientific research projects to lead roles in team project management allows evaluation of projects from a broad analysis perspective and he provides commentary to solve any issues that could arise.

***NextEra Energy Resources, LLC*, Environmental Services Project Manager (2022-Present)**

- Environmental Services Project Manager for renewable energy projects in New York and throughout the northeast.
- Responsible for preparation of all applications and supporting environmental studies submitted under Article 10 or Section 94-c of the Public Service Law and the State Environmental Quality Review Act including the following renewable energy projects:
    - Excelsior Energy Center – 280 MW solar and 20 MW energy storage project
    - Trelina Solar Energy Center – 80 MW solar project
    - Garnet Energy Center – 200 MW solar and 20 MW energy storage project
    - North Side Energy Center – 180 MW solar
- Manage all environmental development activities and permitting issues, energy facility siting, and report analyses/conclusions. Participate in agency, stakeholder, and public meetings.

***Tetra Tech*, Senior Project Manager and Ecological Services Manager (2011-2022)**

- Responsible for providing project management on renewable energy projects located throughout the states of New York and New Jersey. Perform writing and coordination of required technical reports and studies, oversee direction of project information/data between clients and Tetra Tech technical directors, and provide general client support to advance projects through regulatory review processes and into construction.
- Responsible for managing a staff of 8 employees and providing project management on complex projects in varied fields such as electric generation facilities, infrastructure and pipelines.
- Extensive experience with the, New York State Board on Electric Generation Siting and the Environment (Article 10), New York State Department of Environmental Conservation, New York State Environmental Quality Review Act (SEQRA), all Pennsylvania state regulatory agencies, Ohio regulatory agencies, the Federal Energy Regulatory Commission, the U.S. Fish and Wildlife Service, and the U.S. Army Corps of Engineers.
- Preparation and submittal of jurisdictional permit applications to federal and state agencies and site plan/special permit applications to local planning/zoning boards for renewable energy projects.
- Review of environmental regulations in order to determine project compliance.

Daniel J. Dittman

Early Stage Engineering and Construction Project Manager

EDUCATION
B.S., Mechanical Engineering, University of Rhode Island, 2008

PROFESSIONAL EXPERIENCE

***NextEra Energy Resources, LLC*, Early Stage Solar E&C Project Manager (2021-Present)**

- Engineering & Construction Project Manager for renewable energy projects in the states of New York.
- Provide engineering support and daily coordination of Engineering, Estimating, Supply Chain, and Construction resources through the pre-construction activities for projects in the Development phase:
    - Trelina Solar Energy Center – 79.8 MW solar project
    - Garnet Energy Center – 200 MW solar and 20 MW energy storage project
    - North Side Energy Center – 180 MW solar
- Coordinate the project transition from preliminary design to execution once Management approval has been achieved.

***Belcan Engineering*, Senior Project Manager (2015-2020)**

- Developed proposals for upcoming projects and setup project format and PO's
- Scheduled and orchestrated meetings between team members and customer
- Discuss and identify requirements and expectations throughout project
- Implemented scope changes, and resulting budget modifications, if requirements change from original scope of work
- Monitored progress of team members and assist their efforts when warranted

***Thielsch Engineering, Inc.*, Senior Field Project Engineer (2013-2018)**

- Reviewed project proposals and plans, organizing background information, packing and preparing tools, forecasting engineering and technical activities
- Determined project responsibilities by identifying project phases and elements, reviewing project elements once onsite, and then assigning personnel to complete these elements
- Managed multiple facets of the project simultaneously while working onsite providing project planning, field inspections, documentation of results, assessing issues, managing technicians and sub-contractors along with client engagement
- Coordinated work schedules by studying project plans and specifications, sequencing project elements, foreseeing and proactively combating work delays, monitoring project progress, resolving issues and adjusting work agendas if needed
- Contributed to team efforts by assisting the crew with preparations and inspections while still accomplishing my managerial duties and overseeing the overall quality of work
- Prepared project status reports for client by collecting, analyzing, and summarizing information and trends, and recommending immediate corrective actions

- Successfully portrayed up-to-date status at clients daily meetings and presented results of our findings while making recommendations for repairs to assure safe and reliable continued operation of the evaluated system or component
- Maintained safe and clean working environment by enforcing procedures, rules and regulations
- Retained historical database by documenting detailed results, providing recommendations and repair options, determining remaining life of components and materials, and writing professional engineering reports

KEITH W. CARDINALI

EDUCATION

M.S., Professional Studies in Ecology/Wetland Ecology, SUNY College of Environmental Science and Forestry, 2012

B.S., Biology, State University of New York at Oswego, 2010

B.S., Secondary Education, State University of New York at Oswego, 2010

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

OSHA 40hr Hazardous Site Worker Training

OSHA 30hr Construction Safety & Health

Confined Space Entry, Attendant, & Rescue Training

First Aid, CPR & AED Training

New York State Erosion and Sediment Control Certificate Program (expired)

NUCA Excavation Safety Competent Person

USCG Boater's Safety Certification

AREAS OF EXPERTISE

Mr. Keith W. Cardinali has project management and technical experience in the following general areas:

- Environmental Permitting and Compliance
- Project Siting and Environmental Review
- Pre- and Post-Article 10 Permitting and Compliance Support
- Wetland and Stream Delineation, Reporting, and Permitting
- Agency Consultation (Local, New York State, and Federal)
- Wetland Mitigation and Restoration / Construction Design
- State Environmental Policy Act (SEQRA)
- Invasive Species Monitoring and Management
- Fish and Wildlife Impact Assessments
- Erosion and Sediment Control Inspection

REPRESENTATIVE EXPERIENCE

Mr. Cardinali currently serves as a Project Manager within TRC's Planning, Permitting, and Licensing (PPL) practice in Liverpool, New York, where his responsibilities include managing large-scale projects under Article 10 of the New York State Public Service Law (PSL) for Certification of Major Electric Generating Facilities (primarily solar), as well as other municipal and state regulations and requirements. Mr. Cardinali has over 8 years of experience in environmental and civil engineering, consulting, and construction and is experienced with working closely with engineers, designers, environmental, and construction teams to successfully execute the full life cycle of a project. His project experience includes work in both the public and private sectors, involving industrial and commercial development and remediation, as well as municipal, and federal-level projects. Mr. Cardinali has acted as construction manager on a variety of environmental remediation and restoration projects which were within NYSDEC, NYSDOH, and USACE purview. His responsibilities have included extensive field investigation,

preparation, and review of construction drawings and as-builts, performing detailed checks of work performed, performance of SWPPP inspections, permitting, and cost estimating.

Confidential Client, 90 MW Article 10 Solar Project, Montgomery County, NY (Project Manager)

Served as a Project Manager for a 90 MW solar project proposed in Montgomery County, NY. Managed Compliance and Informational Filing development, review, and associated comment responses, and assisted client by supporting additional post-Article 10 Application efforts required to commence construction. Supported construction management teams through construction pre-bid meetings and assisted with contractor RFI responses. Supported engineering and construction teams through the minor change process to ensure that design changes were approved in a timely matter and that changes did not result in adverse environmental or land use impacts that could result in Project delays. Coordinated with development teams to ensure compliance with Certificate Conditions for the Project and any other local requirements were being met through all iterations of the design.

Confidential Client, 50 MW Article 10 Solar Project, Schoharie County, NY (Project Manager)

Served as a Project Manager for a 50 MW solar project proposed in Schoharie County, NY. Managed Compliance and Informational Filing development, review, and associated comment responses, and assisted client by supporting additional post-Article 10 Application efforts required to commence construction. Supported construction management teams through construction pre-bid meetings and assisted with contractor RFI responses. Supported engineering and construction teams through the minor change process to ensure that design changes were approved in a timely matter and that changes did not result in adverse environmental or land use impacts that could result in Project delays. Coordinated with development teams to ensure compliance with Certificate Conditions for the Project and any other local requirements were being met through all iterations of the design.

Confidential Client, 200 MW Article 10 Solar Project, with 20 MW of Energy Storage, Cayuga County, NY (Project Manager)

Served as a Project Manager for a 200 MW solar project proposed in Cayuga County, NY. Managed responses received from lead agencies regarding the Article 10 Application. Participated in a highly technical review of Project siting considerations with the intent to provide an Update to the Application which would significantly reduce the Project's proposed environmental and land use impacts. Coordinated between engineering and environmental teams to submit a complete Update to the Article 10 Application with the intent of reducing Project impacts. Coordinated between multiple subject matter experts for technical studies and reviews required for the Update to the Application, as well as reviewed and provided quality oversight during completion of the Update to the Application. Coordinated development of draft Certificate Conditions for the Project and assisted client with development of a wetland mitigation plan.

Confidential Client, Wetland and Upland Restoration of an Industrial Superfund Site, Onondaga County, NY (Construction Manager)

Managed the construction and habitat restoration activities related to the selected remedy of over 100-acres of contaminated terrestrial and wetland habitats. Construction activities included the excavation and management of contaminated soils, installation of LLDPE geomembrane liner systems, installation of

groundwater collection and conveyance systems, and the implementation of slope stabilization/erosion control methodologies.

Habitat restoration activities included improving wetlands through the installation of water control structures to introduce hydrology, replanting of native plants, shrubs, and trees, management of invasive species through mechanical removal and the application of herbicides, and the subsequent monitoring of these areas against success criteria over a five-year period.

Confidential Client, Onondaga Lake Boat Launch Construction, Onondaga County, NY (Construction Manager)

Managed all aspects of construction related activities required for the successful execution of the project under a strict completion schedule. Assisted in in the permitting process with NYSDEC and USACE to acquire the required permits for activities required for the construction of boat ramps in New York State. Led weekly construction update meetings with NYSDEC, members of the engineering and design team, and client representatives throughout the duration of construction. Performed detailed checks of work performed to ensure that all work met design requirements for ADA compliance, Onondaga County codes for sanitary and water services, and that work was being performed in accordance with the conditions of all granted permits.

Brian Stoos, PWS
Office Practice Leader

Brian Stoos, PWS, is an Office Practice Leader and certified Professional Wetland Scientist (#2950) with over 15 years of experience in environmental consulting. He has experience in federal, state, and local permitting, wetland delineations, ecological resource surveys, project siting, and project management. Mr. Stoos has worked on several renewable energy projects in New York, as well as pipeline and other linear projects throughout the country. He is experienced in managing both small- and large-scale projects under Section 94-c regulations, the New York State Environmental Quality Review Act (SEQRA), as well as other municipal and state regulations and requirements. He has prepared Article 10 applications in New York as well as §401 Water Quality Certifications and §404 Individual Permit Applications. As a Project Manager, Mr. Stoos manages large budgets and complex schedules to complete permitting and meet regulatory requirements. Mr. Stoos has done environmental consulting work related to wetlands, waterway permitting, vegetation, and wildlife issues throughout New York, Pennsylvania, New Hampshire, New Jersey, Ohio, Florida, Georgia, Texas, Oklahoma, Utah, California, Oregon, and Nevada.

CREDENTIALS

Education:

- B.S., Chemical Engineering, Bucknell University, 2001

Professional Registrations/Certifications/Training:

- Professional Wetland Scientist, Society of Wetland Scientists (#2950), 2018

EXPERIENCE

Areas of Expertise:

- Wetland and Stream Delineations
- Renewable Energy Development (Wind/Solar)
- Project Siting and Environmental Review
- Environmental Permitting
- Environmental Impact Avoidance and Minimization
- Agency Consultation (Local, State, and Federal)
- Biological Resource Field Surveys

PROJECT EXPERIENCE

Confidential Client, 449 MW Section 94-c Wind Project – Clinton County, New York (Project Manager)

Manages the budget, monthly invoicing, and client coordination for the Section 94-c permit application for a 449 MW (122 turbine) wind project in Clinton County, New York. Tasks managed as part of the project include completion and compilation of the 94-c Application, coordination for review and submittal of the application to applicable agencies, coordination with the client regarding project status and budget, and siting of turbines and access roads. Mr. Stoos also leads project calls and is the lead reviewer on several exhibits prior to submittal to the client.

Confidential Client, 40 MW Section 94-cSolar Project – Albany and Greene Counties, New York (Project Manager)

Serves as the Project Manager of an approximately 40 MW solar project being proposed under Section 94-c of the New York State Executive Law. Tasks managed as part of the project include wetland delineation, critical issues analysis, breeding bird surveys, Phase I Environmental Site Assessment (ESA), and Phase IA cultural surveys. Manages the budget, monthly invoicing, and client coordination.

SunEast, Flat Hill Solar Project – Fulton County, New York (Project Manager)

Managed the budget, monthly invoicing, and client coordination for a 20-MW solar project in Fulton County, New York. Tasks included preparation and submission of SEQRA applications, wetland delineations, agency consultations, wetland permitting, visual simulations, landscape plantings, and preparation of engineering drawings. Mr. Stoos attended and supported the project at several town zoning and planning board meetings.

PROJECT EXPERIENCE (continued)

Confidential Client, Multiple Projects – Multiple Counties New York (Technical Advisor)

Wrote and reviewed exhibits for Article 10 and 94-c permit applications along with wetland delineation reports. Prepared the 401 Water Quality Certification for a large solar project. Advises teams regarding wetland regulations and field methodology. Provides testimony for Article 10 applications.

Cypress Creek Renewables, Multiple Projects – Multiple Counties New York (Project Manager)

Manages the budget, monthly invoicing, and client coordination for multiple solar projects throughout New York. Tasks included wetland delineations and agency consultations. Participates in weekly calls and supports the overall development of these projects.

Orange and Rockland, Lake Station Road – Orange County, New York

Managed the budget, monthly invoicing, and client coordination for a transmission pole replacement project in Orange County. Taks for this project included wetland delineations, United States Fish and Wildlife Service (USFWS) Section 7 consultation, and United States Army Corps of Engineers (USACE) Nationwide Permit application.

Multiple Clients, Multiple Projects – Multiple Counties New York

Coordinated and oversaw TRC's wetland delineation field crews throughout New York State. He was responsible for scheduling the teams, ensuring all projects were staffed appropriately, and each project was completed on time.

Confidential Client, Multiple Wind Farms – Multiple Counties New York

Managed the budget, monthly invoicing, and client coordination for wind farms ranging from 100 to 314 MW. Tasks included monthly raptor surveys, aerial raptor nest surveys, and bat mist netting surveys He also wrote sections of Exhibit 22 of Article 10, conducted aerial raptor nest surveys, and wrote species survey reports.

Cipriani Energy Group, Multiple Projects – Multiple Counties New York

Prepared the SEQRA applications and oversaw the preparation of Full Environmental Assessment Form (FEAF) Part 1s for multiple 5.0 MW solar projects across the state. He led the wetland delineations for some sites and oversaw the field crews on the remaining sites. Led agency coordination for jurisdictional determinations of the wetland boundaries. Mr. Stoos attended and supported the projects at several town board meetings.

The Williams Companies, Inc., Atlantic Sunrise Pipeline – Multiple Counties Pennsylvania

Led multiple field teams performing wetland and stream delineations, habitat surveys, and routing for this 183-mile pipeline plus 12 miles of pipeline loops. He calculated the wetland and waterbody impacts for USACE and PADEP permitting. Mr. Stoos also wrote wetland delineation reports and resource reports for use in the FERC application.

Kern River Gas Transmission, Mountain Pass Lateral – San Bernardino County, California

Performed desert tortoise monitoring, being responsible for escorting construction equipment around the construction site and visually clearing the ROW to ensure that no desert tortoises were present during construction.

Tennessee Gas Pipeline, Northeast Supply Line Diversification Project – Multiple Counties Pennsylvania

Assisted with preparation of the FERC 7(c) filing for 15 miles of a proposed pipeline looping in Potter, Tioga, and Bradford Counties. He analyzed impacts on fish, wildlife, and vegetation in the project area and prepared Resource Report 3 (Fish, Wildlife, and Vegetation). He also led wetland delineation, conducted surveys for endangered plants, and helped prepare the joint application permit.

Kern River Gas Transmission, Apex Expansion – California, Nevada, Utah, and Wyoming

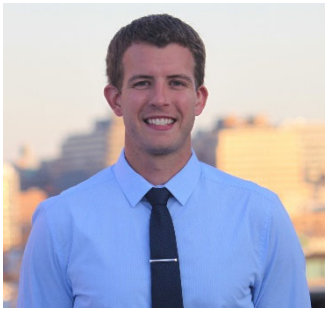
Conducted habitat, land-use, and wetland surveys and investigated the potential presence of T/E species. He provided T/E species consultation with USFWS, the United States Forest Service, and the Utah Department of Wildlife Resources to develop survey protocol, impact minimization techniques, and mitigation measures that are compatible with the project schedule. He conducted surveys for Utah prairie dog, pygmy rabbit, western burrowing owl, and amphibians to determine their presence or absence within the project area. He also analyzed impacts on fish, wildlife, and vegetation in the project area and prepared Resource Report 3 (Fish, Wildlife, and Vegetation) for the FERC 7(c) filing.

El Paso Corporation, Ruby Natural Gas Pipeline – Washoe County, Nevada

Conducted greater sage-grouse lek (breeding ground) surveys in Washoe County, Nevada, to determine the presence/absence of breeding greater sage-grouse and the abundance of males and females present at the lek. He also completed migratory bird nesting surveys in Elko County; and performed wetland and stream delineations.

Weston, S. Hillegas

Wetland Scientist/Staff Biologist



CREDENTIALS

Education:

- B.S., Wildlife and Fisheries Science, The Pennsylvania State University, 2010

Professional Registrations/Certifications/ Training:

- Wetland Delineation Training Certification: 38-hour 4 days (Richard Chinn Environmental Training, Inc.)
- Health and Safety Training 40-hour (OSHA 29 CFR 1910.120) Annual 8-hour refresher

Weston Hillegas has 12 years of experience as a project environmental scientist who specializes in environmental investigations including wetland and streams, hazardous and non-hazardous remediation, tree and plant identifications, and rare, threatened and endangered plant species surveys. In New York he has experience with wetlands delineations, T&E studies, SEQRA, 94-c and avoidance related to battery energy storage systems (BESS), wind, solar and pipeline projects. He has assisted in FERC package applications. Among these specialties he has experience in New York and Pennsylvania with section 404 and chapter 105 permitting. He has permitted renewable energy projects through NYSDEC and USACE in New York. In New Jersey he has experience with wetland permitting and LOI application permitting with NJDEP. Working with clients on linear utility projects, he has conducted on-site environmental routing and prepared corresponding wetland delineation reports required for the various permitting processes. Experience in groundwater sampling, air monitoring, wetland mitigation/monitoring and remedial investigation, lends to his well-rounded background. In executing projects, Mr. Hillegas demonstrates a strong knowledge in wildlife sciences, remediation and environmental resource management with strong leadership and oversight skills. Mr. Hillegas has experience on largescale hazardous waste cleanup projects where he has led the health and safety, drilling oversight, construction management, air monitoring, erosion and sediment control inspections, and sampling/ lab coordination. He currently serves in the capacity of Wetland Scientist / Staff Biologist. He has professional training and experience in wetland and stream delineations, wildlife sciences, environmental assessments and regulatory compliance and permitting.

EXPERIENCE

Professional Summary:

- 12 years of Environmental consulting and technical experience largely in the renewable energy, energy infrastructure and remediation industries

Areas of Expertise:

- Wetland and Waterbody Delineations
- Ecological Surveys
- Environmental Reporting and Permitting
- Critical Issues Assessments

PROJECT EXPERIENCE

Battery Energy Storage Systems Projects – NY (Wetland Scientist/Staff Biologist: 2019-2022)

Mr. Hillegas conducted site wetland and stream delineations for numerous BESS projects in New York State and has worked with clients to help avoid complicated permitting processes through the design stage. He prepared comprehensive wetland delineation reports to help his clients better understand the restraints posed by natural resources as well as recommendations to avoid conflict that may arise from the development in and around protected natural resources. Several of the BESS projects were in Long Island, NY. He has consulted with the USFWS and NY Natural Heritage Program in navigating projects through restrictions regarding T&E species.

Solar Projects – NY (Wetland Scientist/Staff Biologist: 2019-2022)

Mr. Hillegas has experience in Article 10 and 94-c permitting solar projects in New York State. He has conducted wetland delineations and T&E surveys for solar development projects in NY. He wrote wetland delineation reports relating to the development of solar projects and also gave recommendations in the design stages to help clients avoid complicated permitting processes. Mr. Hillegas congruently would survey the proposed land area for any concerns regarding special habitat for potential T&E species.

Millennium Pipeline, Columbia Gas – NY (Wetland Scientist/Staff Biologist: 2019)

Mr. Hillegas conducted stream and wetland investigations along an approximate 10-mile pipeline right-of-way and access roads. He prepared comprehensive wetland delineation reports and coordinated with the USFWS to avoid and comply with T&E species that were potentially present. This project fell under the client's nationwide permit and all guidelines and

PROJECT EXPERIENCE (continued)

regulations associated with the permit were followed to help the client comply in a timely fashion.

Colonial, Pipeline Maintenance Projects – NJ& NY (Wetland Scientist/Staff Biologist: 2018)

Mr. Hillegas conducted site reconnaissance and wetland and stream delineations for multiple sections of proposed pipeline maintenance, AC mitigation and linear anode installation. He prepared regulatory compliance data for state regulatory agencies and worked with the client on site to determine the most efficient approach to proposed work scope.

TE Connectivity Ltd., ISRA Preliminary Assessments – Eatontown and Mt. Olive, NJ (Senior Environmental Scientist: 2018)

Mr. Hillegas conducted due diligence with regards to the NJDEP site remediation program – Preliminary Assessment. He submitted OPRA requests to the townships and county where the property was located and researched the property based on historic public records. Mr. Hillegas conducted site assessments and documented any potential areas of concern based on the NJDEP Preliminary Assessment Technical Guidance, N.J.A.C. 7:26E.

Confidential Client, Remediation Construction Management Services – Avenel, NJ (Senior Environmental Scientist: 2018)

Mr. Hillegas conducted soil borings, groundwater sampling, monitoring well installation and data interpretation for a PFAS remediation site. He also coordinated with the township of Woodbridge to obtain pertinent permits for conducting the work in a timely fashion.

PPG, Remediation Construction Management Services – Jersey City, NJ (Senior Environmental Scientist: 2014-2017)

Mr. Hillegas conducted soil borings, groundwater sampling, weekly inspections, and site safety compliance during the pre-remedial, during excavation and post remedial phases for several sites. He acted on behalf of the client to monitor work was performed safely. He identified the contamination of concern (hexavalent chromium) and collected post excavation soil samples. Mr. Hillegas provided oversight for the waste management of hazardous and non-hazardous soil loadout. The soil loadout and waste water discharge disposal consisted of manifest tracking daily. Mr. Hillegas conducted a weekly inspection of the erosion and sediment controls throughout the remediation process. He completed subsequent data interpretation and filed submissions through the NJ Hazsite/EDD system. Completed remedial action reports.

EnviroFinance Group, LLC, Wetland Mitigation Bank – Bergen County, NJ (Senior Environmental Scientist: 2012-2017)

Mr. Hillegas conducted yearly monitoring of the 237-acre freshwater and tidal mitigation bank in the Hackensack Meadowlands area. Completed fish tissue and sediment sampling and analysis as well as freshwater and tidal wetland studies. Work included developing a monitoring plan for 85% plant coverage in five years.

U.S. Navy, Wetland Mitigation – St. Julien's Creek, VA (Senior Environmental Scientist: 2013)

Mr. Hillegas was part of a team who helped design a wetland mitigation storm water retention site and plant over 10,000 wetland plant species for the U.S. Navy at St. Julien's Creek Annex.

NRG Energy, Wetland Mitigation – Dagsboro, DE (Senior Environmental Scientist: 2013)

Mr. Hillegas was part of a team who helped design a wetland mitigation sill stabilization site and plant over 3,000 wetland plant species for NRG Energy at the Indian River facility.

Williams, Environmental Site Assessments – PA (Senior Environmental Specialist: 2011)

Site evaluation and assessment, Lawrence county and Butler County PA Confluence projects: Conducted desktop (GIS based) environmental assessments of 15 potential site locations for a natural gas processing plant based on environmental, zoning, engineering and other relevant criteria.

Williams Midstream Services, Linear Environmental Surveys – PA & WV (Senior Environmental Specialist: 2010-2012)

Mr. Hillegas led field work for stream and wetland delineations for numerous natural gas transmission and gathering lines in northeast Pennsylvania and West Virginia. He completed post-construction wetland monitoring. Mr. Hillegas prepared wetland delineation and stream identification reports with the relevant permits for the client. He worked as a team to complete road crossing permits for numerous natural gas pipeline projects in Southwestern Pennsylvania. In addition, Mr. Hillegas worked closely with the Pennsylvania DOT and local authorities to obtain the bonds and permits necessary for township and state crossings of natural gas pipelines on roads.

Chesapeake Energy, Linear Environmental Surveys – PA & WV (Senior Environmental Specialist: 2010-2012)

Mr. Hillegas conducted dozens of permitting and erosion/sediment control compliance audits. He completed environmental clearance packages, mapped data, and delineated natural resources including jurisdictional streams and wetlands.

Allegheny Power, Linear Environmental Surveys – WV (Senior Environmental Specialist: 2011)

Mr. Hillegas led field work for the Sutton-Bays Project in Braxton Co. WV; 138kV rebuild for Allegheny Power Inc. He performed stream and wetland investigations along transmission right of way and access roads. Mr. Hillegas located and identified RTE species including puttyroot (*Aplectrum hyemale*), cranefly orchid (*Tipularia discolor*) and downy rattlesnake plantain (*Goodyera pubescens*).

Dominion Transmission, Linear Environmental Surveys – PA (Environmental Specialist: 2010)

Mr. Hillegas performed post-construction wetland monitoring for the Dominion Transmission, Inc. PL-1 Pipeline Project in Center County, PA and the Dominion TL-453 and TL-536 Pipeline Projects located in Potter County, PA. He assisted in RTE plant species field surveys for the TL-492 project. He also assisted on the Appalachian Gateway TL-590 and TL-591 Project rerouting around wetlands.

Columbia Gas Transmission, LLC, Linear Environmental Surveys – PA (Environmental Specialist: 2010)

Line 1278 – Line K Project (Pike County, PA and Orange County, NY) Federal Energy Regulatory Commission (FERC) environmental report documentation and Project permitting (PA Section 404/Chapter 105 Joint Permit Application and USACE/NYSDEC Joint Permit Applications). Assisted in RTE plant species surveys.

RICHARD J. MONROE

EDUCATION

B.S., Fisheries & Wildlife, Paul Smith's College, 2020

PROFESSIONAL REGISTRATIONS/CERTIFICATIONS

Associate Wildlife Biologist, The Wildlife Society, June 2021

AREAS OF EXPERTISE

Mr. Richard J. Monroe, has technical experience in the following general areas:

- Avian Ecology, Habitat Management, and Survey Methods
- Invasive Species Monitoring and Management

REPRESENTATIVE EXPERIENCE

Mr. Monroe has three years of experience in coordinating and performing a variety of ecological surveys with a focus on avian ecology and management. He holds a bachelor's degree in Fisheries and Wildlife Science from Paul Smith's College. Prior to becoming a consultant, he held a position with the New York State Department of Environmental Conservation as a Wildlife Technician (Watertown, NY). His qualifications include multiple seasons of breeding bird and large use surveys, data management, and results reporting. As a consultant, Mr. Monroe has provided regulatory compliance support to private-sector clientele through critical issues analyses, ecological surveys, and desktop analyses. He currently serves as an Avian Specialist within the Planning, Permitting, and Licensing Group where he has supported multiple Article 10 and Section 94-c renewable energy projects.

Consulting Experience

Mr. Monroe has supported multiple 94-c permitting applications in New York for utility-scale solar projects throughout the state through the implementation of avian resource surveys, application preparation, and agency consultation on listed species concerns.

Confidential Client, Wind Facility Development – Somerset County, Pennsylvania (Avian Specialist: 2020-2022)

Coordinated northern harrier habitat suitability assessments and presence/absence surveys within the Project Area, following Pennsylvania Game Commission protocols.

Confidential Client, Solar Facility Development, 94-c Projects – Franklin County, New York (Avian Specialist: 2020-2022)

Coordinated and conducted Grassland Breeding Bird studies on utility-scale proposed solar facilities in accordance with requirements for 94-c Permitting. Also assisted wetland delineation efforts, avian survey planning, and occupied habitat determinations.

Confidential Client, Solar Facility Development, 94-c Projects – Montgomery and Cayuga Counties, New York (Avian Specialist: 2020-2022)

Coordinated and conducted Grassland Breeding Bird and Winter Raptor use studies and reporting requirements. Also assisted with wetland delineation efforts and site characterization reports.

Confidential Client, Solar Facility Development, 94-c Projects – St. Lawrence and Clinton Counties, New York (Avian Specialist: 2021)

Coordinated and conducted Grassland Breeding Bird surveys and reporting.

Confidential Client, Solar Facility Development, 94-c Projects – Albany and Columbia Counties, New York (Avian Specialist: 2020-2022)

Coordinated and conducted Grassland Breeding Bird surveys and reporting. Also assisted in wetland delineations, bog turtle habitat assessment, and occupied habitat determinations.

Confidential Client, Solar Facility Development, Article 10 & 94-c Projects – Tomkins and Cayuga Counties, New York (Avian Specialist: 2020)

Assisted in wildlife site characterization reports and wetland delineations. Also assisted in providing rebuttal testimony assessing project impacts on avian resources.

Ecological Survey Experience

New York State Department of Environmental Conservation – Watertown, New York (Wildlife Technician: 2019)

Mr. Monroe served as a Wildlife Technician with the NYSDEC performing a variety of ecological surveys including Grassland Breeding Bird surveys, Colonial Waterbird surveys, Invasive Species surveys and management, Small Mammal trapping surveys, water level monitoring and control, waterfowl banding, and colonial waterbird banding on public and private lands. He was responsible for data management and reporting of Grassland Breeding bird surveys.

Adirondack Watershed Institute – Alexandria Bay, New York (Watershed Steward: 2018)

Mr. Monroe served as a Watershed Steward with the Adirondack Watershed institute performing aquatic vessel inspections and removal for aquatic invasive species for any vessels entering/exiting the waterbody. He communicated regularly with the public and with stakeholders regarding the status of the lake and its management practices.

New York State Department of Environmental Conservation – Lake Clear, New York (Volunteer: 2017)

Mr. Monroe assisted in the capture and milking of landlocked salmon at a state-owned fish hatchery to aid in population management through assisted breeding.

SPECIALIZED TRAINING

- Waterfowl Identification, NYSDEC, 2018
- Waterfowl Banding Training, NYSDEC, 2019
- Colonial Waterbird Banding Training, NYSDEC, 2019
- Small Mammal Trapping Training, NYSDEC, 2019

PROFESSIONAL AFFILIATIONS

- The Wildlife Society, National Chapter
- National Deer Association, National Chapter

SAMATHA MOTURI

EDUCATION

M.S., GIS & Urban Planning, Eastern Michigan University, MI

B.Arch, Architecture, Jawaharlal Nehru Technological University, INDIA

AREAS OF EXPERTISE

Ms. Samatha Moturi has program management and technical experience in the following general areas:

- Geographic Information Systems (GIS)
- Web Application Development
- Visual Impact Analysis (Viewshed & Line of Sight)
- Article 10/94c Impact Analysis
- Permit Applications
- Biological Survey and Reporting
- Environmental and Planning Constraints Analysis
- Environmental Impact Reports and Assessment (EIR/EIS)
- Nesting Bird Surveys
- Habitat Mitigation and Monitoring Plan (HMMP)
- Electrical Transmission and Wind Power Permitting

REPRESENTATIVE EXPERIENCE

Ms. Moturi has over 14 years' experience in GIS and the environmental consulting field. She has used GIS and AutoCAD technology for environmental permitting, and compliance for a broad range of clients in the electric transmission, solar, wind, and gas utility industries. She excels at using the best possible technologies to reduce overall project cost and time. Ms. Moturi has experience with all aspects of ecological projects such as assessing impacts to sensitive habitats, diverse rare plant flora and jurisdictional wetlands/waters; wildlife and avian monitoring, vegetation mapping; custom database development. She also utilizes mobile technology and web mapping applications to facilitate faster project work. Mr. Moturi also has a technical specialty in visibility analysis using Lidar data in support of Visual Impact reports. Ms. Moturi currently serves as a GIS Analyst III, providing both technical and field support for the Planning, Permitting, and Licensing group.

Confidential Client, Article 10 Solar Portfolio – NY (GIS Analyst III: 2019 - Present)

Mr. Moturi was involved as GIS Analyst for four Article 10 projects assisting at various stages like project component siting, and sensitive environmental resource identification. She also provided mapping support and data analysis for the environmental aspects of these projects including; federal and state permit deliverables, environmental field surveys, and quantitative analysis of project impacts.

Confidential Client, Solar Portfolio – MA, ME, NH, VT (GIS Analyst: 2018 - Present)

Ms. Moturi provides GIS support for the planning and permitting of several solar generation facilities in New England. Ms. Moturi reviews potential locations of Project components for environmental and cultural constraints, assists field staff, and does GIS site analysis and mapping for state and local permit applications. Ms. Moturi has provided visibility analysis and potential buffers assessment via viewshed analysis based on Lidar Data and potential views from and towards proposed solar site.

Confidential Client, Gas Line Reliability Project – MA (GIS Analyst: 2020 - Present)

Ms. Moturi is providing GIS support for a 5-mile long natural gas pipeline project. She is performing GIS analysis to provide environmental and constructability criteria analysis for each route alternative.

National Grid, NPCC4 – MA (2018 – Present)

Ms. Moturi is providing GIS support for wetland and rare species identification and permitting for advancement of exploratory soil borings along electric transmission lines, substations in central and western Massachusetts. The boring data will be used for replacement of structures and other maintenance activities, for which she is also providing permitting GIS support.

Mountain Valley Pipeline, LLC, MVP Southgate Project – VA, NC (2018 - 2020)

Ms. Moturi is providing GIS support for a 73-mile long natural gas pipeline project. She is performing steep slope and side slope analysis using high-resolution LiDAR data and raster analysis models to determine potential areas that will utilize special steep slope construction techniques.

Eversource, Transmission ROW Reliability Project – CT (2018 - 2019)

Ms. Moturi is providing GIS support to Eversource Energy's ongoing vegetation management program in Connecticut to ensure compliance with federal regulations. She has mapped wetland delineation, work areas, swamp matting, and tree clearing areas of substations and transmission ROWs that are currently forested as well as calculating environmental impact areas. She has generated line list tables to notify owners of impending work.

Confidential Client, Cultural Resource Surveys – TN (GIS Analyst: 2019 -2020)

Ms. Moturi provided multiple viewshed analysis to support Phase I cultural resource surveys of transmission lines.

Confidential Client, Housing Development – CA (GIS Analyst: 2015)

Ms. Moturi was the primary analyst for home range analysis of nesting birds at a 5000-acre ranch. Ms. Moturi has performed exploratory spatial data analysis, including home range analysis-utilization distributions for golden eagles using sightings and flight path data, and prey distribution using a logistic regression model to understand existing patterns of eagle habitat use.

Confidential Client, Solar Development – CA (GIS Analyst: 2014 - 2015)

Ms. Moturi was the GIS lead on a Solar Generation Project (280 MV, 2900-acre facility), which required permitting, species and habitat mitigation, and wildlife/avian monitoring and compliance support. Permits included Section 404, Clean Water Act, USFWS and CDFW approvals related to State and federally listed species, Habitat mitigation and monitoring (HMMP). Ms. Moturi managed the spatial data and analysis, including project layout, alternatives, environmental field surveys, habitat suitability analysis, viewshed for bird count sites, and project impact analysis compensation plan development, and project impact analysis. Ms. Moturi improved the resource field data collection by creating tablet-based data collection templates for use in the field and processes the incoming data. Developed an interactive web-based project map.

I-80/I-680/State Route 12 Interchange Project – CA

Ms. Moturi provided GIS support with U.S. Army Corps of Engineers, the Regional Water Quality Control Board, and the California Department of Fish and Wildlife permitting and preconstruction special-status species surveys for three phases of the project.

California Valley Solar Ranch Project – CA (GIS Analyst: 2013 - 2015)

Ms. Moturi provided GIS and data management support for analyzing avian activity and mortality at a solar generation facility and in nearby areas prior to construction, and through the construction cycle. She created a monitoring survey database in MS Access for wildlife on-site monitoring field staff. The database facilitated on-site field staff with, easy to use front end user forms and managers with customized queries and weekly reports. It helped manage huge volumes of high-quality spatial and non-spatial fish and wildlife monitoring data.

Santa Clara County Parkland Acquisition Plan – CA (GIS Analyst: 2013 - 2015)

Ms. Moturi designed a strategic decision spatial model for a County Parkland Acquisition Plan. The model uses more than 30 spatial and non-spatial criteria to analyze and model potential parkland acquisitions, thereby facilitating informed decisions by county supervisors.

SPECIALIZED TRAINING

- ArcGIS Pro 2.7, ArcGIS Desktop 10.x, ArcGIS Spatial Analyst and Network Analyst Extensions, ArcGIS Online, Field Maps, AutoCAD Map 2019, R, Pathfinder Office 5.x, Microsoft Office, Access Database, Trimble GPS and Garmin GPS

APPENDIX B – ABOUT THE AUTHOR

Aaron Williams BSc (Hons)

Qualifications

BSc (Hons) Mathematics

Experience

Undertaken aviation impact assessments for wind farms internationally – including impacts on primary and secondary surveillance radar

Undertaken glint and glare assessments for solar developments in the context of safety and amenity

Evaluated proposed developments against operational and training safety constraints in consultation with a UK airport safeguarding team

Undertaken field surveys pertaining to television and radio reception quality

Undertaken a range of technical assessments including:

- Aviation
- Solar Reflections
- Technical Mitigations
- Radar
- Television Reception
- Communication Systems

Worked on projects in:

- United Kingdom
- Ukraine
- USA
- Canada
- Trinidad and Tobago
- France

Publications:

Produced news articles and editorials covering various topics including:

- Innovative Solar Developments
- Carbon Emissions from Food/Agriculture
- Climate Change Conference COP 26

APPENDIX C – ABOUT THE REVIEWER

Danny Scrivener BSc (Hons)

Qualifications:

BSC Hons Environmental Science

Experience:

Overcame military radar objections to wind turbines by demonstrating shielding effects of intervening buildings and terrain (2012)

Resolved local concerns regarding television interference caused by a new building through modelling and surveying (2013)

Secured planning permission for two solar farms adjacent to Bournemouth Airport by designing an optimal layout to eliminate unacceptable glare (2015)

Secured permission for an on-airport solar development at Dublin International Airport by managing glint and glare concerns (2017)

Resolved Irish Aviation Authority concerns for two new telecommunications masts, allowing them to be built within 150 metres of an existing radar following technical analysis (2018)

Secured consent for a solar development at Madurai Airport in India by addressing the Airports Authority of India requirements pertaining to glint and glare (2018)

Completed over 150 individual solar glint and glare assessments (2013-2019)

Undertaken a range of technical assessments, surveys and meetings including:

- Aviation
- Aviation Lighting
- Electromagnetic Emissions
- Navigation Beacons
- Radar
- Solar Reflections
- Telecommunications
- Shadow flicker
- Technical mitigations

Worked on projects in 11 countries including the UK, Australia and South Africa.

Given technical presentations in:

- Paris: European Wind Energy Association on the topic of radar risk for wind developments (2015)
- Cork: Irish Solar Energy Association on the topic of glint and glare planning issues (2017)
- Gave technical seminars across the UK (2016-18)

Research and Development

Drove the development of solar glint and glare software to address the impacts on dwellings, roads, railways and aviation safety (2014-18)

Gave expert opinion to the Solar Trade Association regarding their investigation into the 'Impact of solar PV on aviation and airports' (2016)