

STATE OF CONNECTICUT  
CONNECTICUT SITING COUNCIL

**GRE GACRUX LLC petition for a declaratory ruling for the proposed construction, maintenance and operation of a 16.78-megawatt AC solar photovoltaic electric generating facility in Waterford, Connecticut. Reopening of this petition based on changed conditions.**

**Petition No. 1347A**

**September 24, 2020**

**SAVE THE RIVER-SAVE THE HILLS, INC. POST-HEARING BRIEF**

Save the River-Save the Hills, Inc. (“STR-STH”) submits this post-hearing brief pursuant to the Council’s announced deadlines.

**I. Introduction**

This matter is before the Council pursuant to a motion to open filed by petitioner GRE GACRUX LLC (“GRE”) on January 23, 2020. GRE asks the Council to reopen Petition No. 1347 (the underlying proceeding), which the Council denied without prejudice, and to modify its decision to “issue a Declaratory Ruling that will allow for the construction, maintenance, and operation of the Project.” (Motion to Reopen at 1.) For the reasons set forth in its previous submissions to the Council and discussed below, party Save the River-Save the Hills, Inc. (“STR-STH”) urges the Council to deny the motion to reopen its original well-reasoned decision, or, in the alternative, to grant the motion and to modify its decision to deny the petition for declaratory ruling *with prejudice*.

STR-STH got involved with the underlying petition, and has remained involved here, because of its specific mission to protect the Niantic River watershed. STR-STH has opposed this project because of the nature and location of the site, not because it is opposed to solar generally. As the Council heard during several days of continued hearing, the site on which this project is proposed is environmentally sensitive due to its location sandwiched between two high-value coldwater trout streams that feed into the already impaired Niantic River estuary. A

washout of this project during construction, like those that have occurred at several other solar array projects that were approved by the Council and had a Construction General Permit from DEEP, would be devastating for those already fragile natural resources. A washout after construction would be just as devastating, and, as currently designed, this project presents substantial risk of both events. STR-STH presented extensive evidence that the stormwater engineering and soil and erosion control measures proposed by GRE do not comply with the State's water quality standards and will have a substantial adverse environmental effect. This site is simply not appropriate for a development of this type and magnitude, and the Council should deny GRE's attempt at a second bite at the apple because it is not substantially different from their first.

**II. GRE Has Not Met its Burden of Showing Changed Conditions that Present a Compelling Reason to Reopen the Underlying Petition**

As an initial matter, to succeed on its motion to reopen, GRE must make a "showing of changed conditions." Conn. Gen. Stat. § 4-181a(b). If it does so, then the Council "may reverse or modify the final decision, at any time, at the request of any person or on the agency's own motion." *Id.* Here, GRE has not made that initial showing that would permit the Council to modify its final decision.

GRE has the burden of demonstrating changed conditions. *See, e.g., Natasha B. v. Dep't of Children & Families*, 189 Conn. App. 398, 409 & n.17 (2019) (placing burden on moving party and applying to a motion to reopen under General Statutes § 4-181a(b) standards applicable to requests to modify custody and child support orders). GRE must establish that there has been "a substantial change in circumstances" since the Council's first consideration of the petition, and "must demonstrate that circumstances have changed since the last [Council] order such that it would be unjust or inequitable" to hold GRE to it. *See id.* The Council's decision rejecting

GRE's request that it reconsider its denial of Petition No. 1347 laid out its reasons for denying the original petition, so there can only be changed circumstances warranting reopening and modifying the decision if those reasons for denial have been remedied by GRE. Those reasons were:

1. Potential impacts on water quality, including, but not limited to, the absence of additional geotechnical analysis to determine the appropriate design of stormwater controls for the proposed project and the impacts of the stormwater controls on water quality, as recommended by DEEP in correspondence submitted to the Council on August 24, 2018<sup>1</sup> and December 4, 2018, and referenced in the Town's July 18, 2018 comments, Save The Rivers-Save the Hills (STRSTH) August 20, 2018 and November 20, 2018 comments and the November 27, 2018 written statement of Council Chairman Stein; and
2. The Petitioner's admissions, November 7, 2018 Petition for Reconsideration, and Petitioner's response to STRSTH's Interrogatory, October 12, 2018, that more geotechnical investigation will be required to determine the functionality and constructability of each proposed detention basin; and concerns that the results of such further investigation could have impacts on not only the design and location of these storm drainage facilities but on the design of the entire project; and
3. Concerns from the Connecticut Department of Energy and Environmental Protection (DEEP) regarding a recommended wildlife survey in correspondence submitted to the Council on August 24, 2018 and December 4, 2018, and referenced in the Town of Waterford's (Town) July 18, 2018 comments, Save the River Save the Hills' (STRSTH) August 20, 2018 and November 20, 2018 comments and the October 25, 2018 written statement of Council member Klemens.

(Petition 1347, 12/11/2018 letter from CSC to L. Hoffman.)

Throughout this proceeding, GRE has not presented any evidence that it conducted the "comprehensive wildlife survey" as recommended by DEEP's August 24, 2018 letter. Nor has it presented any evidence that its newer submission "sufficiently evaluate[s] the proposed stormwater management systems for potential thermal and sediment impacts to downstream

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<sup>1</sup> The correspondence from DEEP was actually dated August 20, 2018, but forwarded to the parties by the Council under cover dated August 24, 2018.

aquatic resources or describe[s] any measures to mitigate any such potential adverse water quality impacts” so as to alleviate DEEP’s concern that “[t]he petition lacks recognition of the current hydrologic connections of this proposed development site to the shared watersheds of Stony Brook and Oil Mill Brook, or to their individual water quality assessments.” (Petition 1347, 8/24/2018 letter from DEEP at 4.) Instead, GRE responded to inquiries and testimony on those subjects by pointing to a new DEEP letter that did not contain the same language – but there is nothing in the newer DEEP correspondence that indicates its earlier concerns were satisfied. The newer DEEP letter simply addresses different issues that the agency identified with Petition No. 1347A. (See 6/17/2020 DEEP letter.) In fact, DEEP was so insistent about the deficiencies in GRE’s proposal that it submitted a *second* letter to the Council in opposition to the motion for reconsideration, which was incorporated into the Council’s decision. In that letter, DEEP wrote that no approval should be granted because:

the petitioner should address the numerous water quality concerns DEEP raised in its comment letter dated August 20, 2018. The overall water quality issues call for robust planning for phasing and stabilization throughout the construction process to ensure the proposed development can meet the standards for coverage under the General Permit, including those particular to discharges to impaired waters. This is especially true given the site's topography and the final grading needed to make it viable as a solar development.

(Petition 1347, 12/4/2018 DEEP letter at 1.)

The need for geotechnical investigation to redesign the stormwater controls and to establish the functionality of the proposed stormwater detention basins was also clearly required by the Council’s decision. GRE presented evidence that it did test pits across the site, but then *conceded* during this proceeding that several of its stormwater basins would not actually function as designed due to the depth of bedrock and/or groundwater. (4/27/2020 GRE Interrog. Responses at 8; see 7/14/2020 Hearing Tr. at 121-123, 127.) STR-STH also presented evidence that there were several locations on the site where test pits and/or

infiltration tests had not been done, and where the results of that testing could require significant changes to the design of the stormwater practices. (See, e.g., 6/18/2020 S. Trinkaus Prefiled Testimony at 5, 8; 8/4/2020 Hearing Tr. at 43 (GRE's engineer testifying that the forebay design relies on soil testing done in basin locations, not forebay locations); 8/25/2020 Hearing Tr. at 43-45 (Trinkaus explaining deficiencies in infiltration testing conducted by GRE).) And as discussed in more detail below, the stormwater controls themselves were substantially changed by GRE after its January 2020 submission, and will need to be changed again based on the testimony at the hearing in this matter.<sup>2</sup> (See, e.g., 7/28/2020 GRE Responses to CSC Late-Filed Requests, Attachment B; 8/4/2020 Hearing Tr. at 39-40, 54-55, 62-63, 76-78.) In short, there is no "compelling reason" to reopen this proceeding because the conditions that caused the Council to deny the petition in late 2018 have not changed. See *Town of Fairfield v. Connecticut Siting Council*, 238 Conn. 361, 366 (1996) ("Because of a legal expectation of finality of a decision, we must find a showing of changed conditions or a compelling reason to reopen this proceeding. After considering each and every motion, request, and contention, we find no such changed conditions or compelling reasons."). With no changed conditions, the Council may not modify its final decision pursuant to General Statutes 4-181a(b).

### **III. The Petition Should Be Denied**

If the Council concludes that changed conditions exist that present a compelling reason to reopen the petition, STR-STH urges the Council to modify its original decision to deny the

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<sup>2</sup> The Council requested that GRE submit revised plans following the first day of hearings in this matter because of the number of changes GRE needed to make to the site plans, including removing more than 300 panels from proximity to wetlands, redesigning the access road to limit impact on wetlands and vernal pools, moving basins, and adding forebays and temporary sediment traps. (See 7/28/2020 GRE Responses to CSC Late-Filed Requests.)

petition with prejudice, rather than without.<sup>3</sup> As the Council is well aware, it may only approve petitions for declaratory ruling for the construction or operation of a distributed resources project or facility with a capacity of not more than 65 MW if:

- (i) Such project meets air and water quality standards of the Department of Energy and Environmental Protection,
- (ii) the council does not find a substantial adverse environmental effect, and
- (iii) for a solar photovoltaic facility with a capacity of two or more megawatts, to be located on prime farmland or forestland, excluding any such facility that was selected by the Department of Energy and Environmental Protection in any solicitation issued prior to July 1, 2017, pursuant to section 16a-3f, 16a-3g or 16a-3j, the Department of Agriculture represents, in writing, to the council that such project will not materially affect the status of such land as prime farmland or the Department of Energy and Environmental Protection represents, in writing, to the council that such project will not materially affect the status of such land as core forest.

Conn. Gen. Stat. § 16-50k. The petition must be denied because it does not comply with DEEP water quality standards and it will have substantial adverse environmental effects.<sup>4</sup> STR-STH's position is supported by the following evidence and arguments.

**A. The Location and Nature of this Site Command that any Development Be Under Only the Most Conservative of Assumptions, Conditions and Designs**

In both this proceeding and the original proceeding, the Council heard extensive evidence and received into the public record comments about the sensitive nature of the proposed site. STR-STH, the Town, DEEP, groups like the Niantic River Watershed Committee

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<sup>3</sup> Alternatively, the Council certainly has the power to deny the petition without prejudice again, thereby permitting its earlier decision to stand until GRE can come before it with a plan that actually takes into consideration the sensitivities of this site. However, given that GRE has not done so despite express direction from the Council and DEEP in connection with the original decision, STR-STH believes another denial without prejudice would be futile.

<sup>4</sup> Although Public Act 17-218, codified at § 16-50k(B)(iii), does not expressly apply to this petition due to the timing of the RFP for the project, the project's impact on contiguous core forest lands is not consistent with the intent of that legislation. The Council should consider the project's negative impacts on a core forest associated with clearing of 75 acres. (*See* 6/17/2020 DEEP letter at 3 (noting that PA 17-218 does not apply, and stating: "Regardless of how the project is submitted, DEEP and the Siting Council may consider impacts to forestland, wildlife and wetlands, as well as air and water quality.").)

("MRWC") and Trout Unlimited, and members of the public referred the Council to literature about the present impairment of the Niantic River estuary due to non-point source pollution including runoff introducing both nitrogen and sediments. (See, e.g., 6/18/2020 letter from Trout Unlimited; 7/7/2020 letter from NRWC; 7/14/2020 Public Comment Tr. at 25-27 (Dr. Jamie Vaudrey of UCONN's marine sciences department), at 28-29 (David Lersch of Waterford Land Trust); 9/24/2020 email from Dr. Vaudrey.) The proposed site is only 4,000 feet from the river, and it is much closer to Oil Mill Brook, Stony Brook, and a possibly intermittent stream that GRE believes feeds into Oil Mill Brook.<sup>5</sup> (8/4/2020 Hearing Tr. at 51-52.) The two brooks, which are two of the three main freshwater tributaries that feed into the Niantic River estuary, are Class A waters per DEEP, meaning that they are exceptionally high-quality coldwater habitats, assessed as "Fully Supporting for Aquatic Life use designation." (Petition 1347, 10/24/2018 DEEP letter at 3.) The Class A designation means that the brooks have the potential to meet the criteria for drinking water, as well as provide fish and wildlife habitat. (*Id.*) They have been documented as supporting native trout populations.

Such habitats are now very uncommon in Connecticut because they are so easily impacted by effects such as runoff of sediments and thermal changes. In fact, DEEP mapping of coldwater streams shows that in the State's shoreline towns, they are almost exclusively found in New London County (the only exception is a very small portion of one stream that enters the most northerly portion of Westport in Fairfield County). (STR-STH Admin. Notice item #41

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<sup>5</sup> STR-STH believes the stream may actually be perennial, and may actually feed directly into the Niantic River. (See 8/25/2020 Hearing Tr. at 28-29, 34.) Whether it feeds directly to the river or to the river via Oil Mill Brook, however, that matters is that stream is significantly closer to the project than Oil Mill Brook and given that it is fed by wetlands on the site that are in proximity to proposed large stormwater basins, it is even more likely to be directly impacted by stormwater failures and increased nitrogen loads. (See 4/27/2020 STR-STH Responses to Interrogs., at 31-32 (unnamed stream is 0 feet from basin #8); 8/25/2020 Hearing Tr. at 28-29.) That direct impact will, in turn, impact the estuary.

(CTDEEP Coldwater Habitat Map).) These highly valuable streams and their biota deserve protection – and the impact of their health on the health of the estuary cannot be overstated.

According to the NRWC letter submitted to the Council, the brooks are estimated to provide one-third of the annual nitrogen load from surface fresh waters entering the nutrient-over enriched estuary, and the pollutant loading modeling for potential development in the watershed identified this project parcel as having a potential to increase the total nitrogen, phosphorous and suspended solids loading by more than 100% if developed. (7/7/2020 NRWC letter at 2-3; *see also* 9/24/2020 email from J. Vaudrey to CSC.) This point was amplified by Dr. Jamie Vaudrey of the University of Connecticut,<sup>6</sup> who noted during the public comment session on July 14, 2020, that deforestation of the Waterford site would result in more nitrogen entering the already stressed Niantic River, through both surface and groundwater discharges.<sup>7</sup> (7/14/2020 Public Comment Tr. at 25-26.) The eelgrass found in the Niantic River,<sup>8</sup> one of only two such estuaries left in Connecticut having this important habitat former, is already at a tipping point with respect to nitrogen loading. (*Id.* at 25-26 (“Niantic is a system on the edge, not just evidenced by that reappearance and disappearance of the eel grass, but also by our nitrogen loads. We are at a tipping point in our nitrogen load, where if we increase the amount of nitrogen coming into the system, we are going to lose that eel grass.”).) This site is especially risky for a development that includes so much clear cutting, removal of native soils, compaction of soil and replacement of 75 acres of trees and brush, which naturally absorb nitrogen, with

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<sup>6</sup> Dr. Vaudrey is with the UCONN department of marine science and has been working in the Niantic River and its watershed for about 20 years. (7/14/2020 Public Comment Tr. at 25.)

<sup>7</sup> STR-STH is aware that Dr. Vaudrey has also submitted written comment to the Council on today’s date, and urges the Council members to review the same and the interactive nitrogen load map she created based on her research and links to therein.

<sup>8</sup> Eelgrass is an important keystone species, providing habitat for many fishes and invertebrates, including the bay scallop. (6/18/2020 D. Danila Prefiled Testimony at 13.)



artificial structures like solar panels, roads and concrete pads, which will not. (*See id.* at 26-27 “But the proposed location, as it stands now, is in a spot in the watershed which will have a large impact on that nitrogen reaching the system. ... So the nitrogen that is going to come and is not going to be intercepted by the trees that currently reside in that area, so we are increasing that nitrogen load to the system, and potentially pushing it over that threshold ...”); *see also* D. Danila Prefiled Testimony, at 11-12; 6/18/2020 S. Trinkaus Prefiled Testimony at 13-14.)

As Dr. Vaudrey’s public comment email to the Council sets forth, the *location* of this site in the watershed and the proposed change from forested land, which is best for intercepting and storing nitrogen, is the reason for concern here:

Closer to the bay, groundwater and stream water drain directly to Niantic River, delivering a hefty supply of the nitrogen humans contribute to these areas in the watershed. As you move farther away from Niantic River, into the upper reaches of the land that drains to the bay, the groundwater and rivers and streams have a chance to pass through ponds and wetlands and spend more time in the rivers and groundwater – all of these places absorb and use that nitrogen locally. ... Thus, changing land use in areas that are close to the bay have a disproportionate negative effect relative to similar changes made further away from the bay.

(9/24/2020 email to CSC.) Based on Dr. Vaudrey’s research, the proposed site is in an area “where anything added has a large and immediate impact on Niantic River.” (*Id.*, referring to interactive map generated based on her research).) The submission by the NRWC summarized Dr. Vaudrey’s findings as having

evaluated nitrogen loads from land areas within 200 m of the Niantic River, land areas beyond 200 meters which discharged directly to the Niantic River, and areas beyond 200 meters which did not discharge directly to the Niantic River (e.g. flowed into ponds and wetlands which could provide some nitrogen removal). The study found that areas beyond 200 meters which discharged directly to the Niantic River comprised only 25% of the watershed but contributed about 36% of nitrogen (in kg/yr) to the river.

(7/17/2020 NRWC letter to CSC at 2-3.) As the NRWC informed the Council, “[t]he proposed solar development is located within this zone” that contributes 35% of the annual nitrogen load to the river. (*Id.* at 3.)

The concerns raised in these public comments, by people who have devoted years to studying the Niantic River, are consistent with the content of prefiled testimony and administrative notice items, including the Niantic River Watershed Protection Plan, that STR-STH presented to the Council. The combination of the dramatic clearing on this historically forested site, the rocky and steep topography of the site, the compaction of soils that will occur due to grading and grubbing, the proximity of the site to the river, and GRE’s failure to design the project in compliance with water quality standards and with an intent to use the most conservative approach as possible for the stormwater design will create perfect storm for a construction and/or design failure that will devastate this fragile ecosystem.

**B. GRE Has Continued to Ignore the Sensitivity of this Site**

Rather than acknowledging the significance of the site’s location and surroundings and providing the Council with a thorough assessment of the possible impacts of this project on those valuable resources based on an actual data collection or even a literature review, though, GRE has claimed that it has no obligation to analyze the offsite impacts of its development activities, and specifically denied having “any concern” about nitrogen leaving the site – despite not having done any analysis or investigation about the risk of that happening due to the location of the site. (*See* 7/14/2020 Hearing Tr. at 130-131.) GRE went so far as to object to STR-STH’s characterization of the project site as being an “environmentally sensitive” parcel. (4/27/2020 GRE Responses to STR-STH Interrog. at 1.) That GRE could take that position after hearing the concerns raised by DEEP, the Council, and STR-STH at the original proceeding, and having reviewed documents such as the Niantic River Watershed Protection Plan, which

outlines the concern about nitrogen loads entering the river, should be of grave concern to the Council. (*See id.* (GRE's engineer testifying that he had reviewed the watershed protection plan, was aware that it included an analysis of certain areas and the potential impact of their development on nitrogen loads in the river, but did no analysis about nitrogen because "we don't have any specific concern about nitrogen leaving the project"); STR-STH Admin Notice Item #19 (discussion of impact of development in certain areas in § 4.5, as well as "build out development" maps indicating the site, if developed, would move from "green" to "red" with respect to nonpoint source loading (Figures F1 & F2, F9 & F10)).)

GRE has also argued that since DEEP did not identify any aquatic species in the NDDDB determination process, it had no obligation to do anything further because there were no aquatic species on the site. As pointed out in prefiled testimony submitted by STR-STH, developers are, in fact, required to consider the off-site impacts of their projects. Indeed, the DEEP water quality standards expressly require that stormwater treatment plans and practices "be tailored to" not just site conditions, but to the downstream resources that could be impacted by stormwater discharges from the site," and identify "streams, brooks, and rivers classified by DEEP as Class A (fishable, swimmable, and potential drinking water), as well as their tributary watercourses and wetlands, [as] high quality resources that warrant a high degree of protection." (2004 Manual § 8.4 Downstream Resources (CSC Admin. Notice Item #59).) The 2004 Manual even identifies toxic pollutants like metals and nitrogen as a primary concern, and notes that "[s]ensitive cold water fisheries ... could also be adversely impacted by stormwater runoff with elevated temperatures." (*Id.*) It also provides:

In addition, the rate and volume of stormwater discharges from new developments are especially critical to these systems, as they could impact the flood carrying capacity of the watercourse and increase the potential for channel erosion.

(*Id.*)

Despite this very clear language, contained in the DEEP water quality standards, as well as the very clear requirements of DEEP's August 24, 2018 letter (reiterated in its December 4, 2018 letter), GRE has utterly failed to provide a "high degree of protection" for the two brooks, or to include in its petition any discussion of the impacts on or risks to the brooks at all, including the potential for impacts on turbidity and temperature, both critical components of a Class A coldwater fish resource. GRE's design engineer *conceded* that the plans, as submitted in January 2020, did not contain all manner of practices required by the water quality standards, including significantly, temporary sediment traps and pretreatment forebays. (*See, e.g.,* 7/14/2020 Hearing Tr. at 124-126.) When the plans were revised to include those forebays, they were not designed in accordance with the depth and width-to-length ratios required by the 2004 Manual, and many of them are placed under solar panels in the design – both facts that will prevent them from operating as intended. GRE did not provide any evidence that those forebays are sized properly to properly pretreat the stormwater that will run off the panels, and did not include the required grading for those pretreatment practices.<sup>9</sup> (*See* 8/3/2020 S. Trinkaus Supp. Prefiled Testimony at 1-3; 8/4/2020 Hearing Tr. at 50-51.)

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<sup>9</sup> These matters are particularly significant, as discussed below, because they are not the kind of "details" that can be "filled up" in a D&M Plan. There may not be physical space for properly sized forebays on the site, given the rocky nature of especially the east and south portions of the site. (*See* 8/25/2020 Hearing Tr. at 48-49 (GRE's engineer testifying that it was "not feasible" to design the forebays in accordance with the 2004 Manual recommendation for inlet-to-outlet ratio based on site topography and admitting following that recommendation would be more conservative approach).) The grading required may interfere with the placement of panels or increase the likely compaction of the soils, which was discussed at length before the Council as another aspect of the design that was not as conservative as warranted by the nature of the site. There may be a need for even more geotechnical investigation to determine whether these practices can be built in compliance with the requirements of the 2004 Manual and the 2002 Guidelines.

GRE has also argued that it did not need to do an analysis of the potential impact of its development on downstream resources because no aquatic species were listed in the NDDB determination. It made the same argument to explain why it did not conduct bat surveys despite being aware that a federally listed bat species may be present on site. (Petition, Ex. I, 10/2/2019 letter (no bat surveys “because NDDB did not identify this species as potentially occurring on the site”); 7/14/2020 Hearing Tr. at 133-135 (GRE witness Jeff Shamas testifying that “it was not a requirement to study the bats” although listed by the U.S. Fish and Wildlife Service, because DEEP’s NDDB did not list any bat species).) That argument ignores the explicit language of DEEP’s 2018 letters on these issues, the express language of Section 8.4 of the 2004 Manual, and the reality that the NDDB determination criteria are not dispositive when it comes to the potential presence of state-listed species. There is no substitute for an actual on-site wildlife survey, as the Council knows from its review of the Quinebaug Solar project in Petition Nos. 1310 and 1310A (survey conducted for northern long-eared bat based on NDDB listing, but actually found state endangered species little brown bat and tri-colored bat). (See also 6/18/2020 D. Danila Prefiled Testimony at 9-10 (describing other examples where on-site surveys identified protected species that were not in the NDDB).) Given the impairment of the Niantic River and the proximity of those Class A waters, there simply is no excuse for not conducting a survey for aquatic species, considering the thermal impact of warmer treated water entering those watercourses, and/or addressing the risks should the stormwater practices on the site become overwhelmed, as has happened before at solar sites, including GRE’s Antares site in East Lyme.

If the Council approves this project, it would be setting a precedent that developers can ignore the off-site impacts of their facilities, including off-site impacts to adjacent and highly valuable resources such as coldwater trout streams. That precedent would violate the express

requirements of the 2004 Manual and flies in the face of professional standards for professional engineers and for smart planning. The State, local towns, inter-town commissions and boards, and many non-profit environmental groups have invested enormous amounts of time, money and other resources into monitoring and working to improve the health of the Niantic River, and approving this project or others like it without consideration of the river's watershed is also inconsistent with that public policy. (*See, e.g.*, Petition 1347, 10/24/2018 DEEP letter, at 3-4 (discussing extensive research supported by DEEP).) Offsite resources *must* be part of the assessment of any development, and GRE's position otherwise is unsupported and would be devastating to the environment should the Council adopt it.

**C. GRE's Plans Do Not Comply with DEEP Water Quality Standards**

STR-STH has submitted extensive evidence showing that GRE's site plans, stormwater report and soil and erosion control measures do not comply with DEEP water quality standards, as set out in the 2004 Manual, the 2002 Guidelines and the General Permit, including proposed Appendix I. As the Council has heard, the most significant issue is that GRE claims compliance with the conditions of section (1)(a) through (e) of Appendix I such that it would not be required to consider the panels impervious for purposes of calculating the WQV – yet again and again, STR-STH has demonstrated that that claim simply is not true.

Condition 1(b) requires that “[o]verall site conditions and solar panel configuration within the array are designed and constructed such that the runoff remains as sheet flow across the entire site.” (6/18/2020 STR-STH Admin Notice Item #7.) As STR-STH's expert and professional engineer Steve Trinkaus testified, that condition has not been met. (6/18/2020 S. Trinkaus Prefiled Testimony, at 5-7, 11-12, 16-17.)

Condition (1)(c) contains four subparts that must be satisfied before a developer may consider the panels impervious:

- For slopes less than or equal to 5%, appropriate vegetation shall be established as indicated in Figure 1, below; and
- for slopes greater than 5%, but less than 10%, practices including, but not limited to, level spreaders, terraces or berms as described in Figure 2, below, shall be used to ensure long term sheet flow conditions; and
- for sites with slopes greater than or equal to 8%, erosion control blankets or stump grindings or erosion control mix mulch or hydroseed with tackifier shall be applied within 72 hours of final grading, or when a rainfall of 0.5 inches or greater is predicted within 24 hours, whichever time period is less; and
- for slopes equal to or greater than 10% and less than 15%, the Plan includes specific engineered stormwater control measures with detailed specifications that are designed to provide permanent stabilization and non-erosive conveyance of runoff to the property line of the site or downgradient from the site.

(6/18/2020 STR-STH Admin Notice Item #7.) GRE's January 2020 submission did not comply with three of those subparts. GRE subsequently added language to its plans with respect to the third subpart but conceded that even that language added does not fully comply with Appendix I. (8/4/2020 Hearing Tr. at 62-63.) Its most recently revised plans also still do not comply with the second and fourth subparts. GRE's plans do not contain level spreaders, terraces or berms as set forth in Figure 2, because the level spreaders on the site are not at the drip edge of the solar panels and there are no level spreaders, terraces or berms proposed. (See 7/14/2020 Hearing Tr. at 140-142.) Nor will its plans ensure long-term sheet flow conditions. As Mr. Trinkaus's testimony set forth, the deficiencies in the site plans will result in channelized flow in many areas that previously had overland flow. (6/18/2020 S. Trinkaus Prefiled Testimony, at 5-7, 11-12, 16-17.) The fourth subpart has also not been complied with, as many of GRE's stormwater control measures are devoid of details (e.g., no construction details, no grading provided for new pretreatment forebays, no grading provided for new temporary sediment traps), and GRE has *admitted* that its "engineered stormwater control measures" will not operate as they claim. For example, GRE conceded that it failed to account for the groundwater and bedrock in several basins, such that the vertical space called for in the DEEP

water quality standards was not present. Per Appendix I, because the above conditions have not been met, the area of the solar panels themselves must be considered impervious for the calculation of the Water Quality Volume (WQV), which GRE did not do.

GRE's plans, even as revised, still do not comply with other water quality standards, including provisions of the 2004 Manual and the 2020 Guidelines. STR-STH understands that the Council is accustomed to "filling up details," which may include final site plans, stormwater reports and erosion control measures, in the separate D&M Plan – but the deficiencies of this project are so fundamental that the Council simply cannot make the requisite finding of compliance with water quality standards or no substantial adverse environmental impact because of GRE's non-compliance. General Statutes § 16-50k does not permit the Council to defer compliance with those standards to the D&M Plan process; compliance must be demonstrated now.<sup>10</sup>

GRE has admitted that its pretreatment forebays, which are *required* for each of the 15 basins, are not yet fully designed. (See 8/25/2020 Hearing Tr. at 43-44, 48-49, 51; 8/3/2020 S. Trinkaus Supp. Prefiled Testimony at 1-3.) (GRE has never explained why such a fundamental piece of its stormwater design was missing from its earlier submissions, which is telling.) Those forebays are currently not designed to the recommendations and specifications within the water

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<sup>10</sup> STR-STH is aware that the Council has included language like the following in its opinions and reports:

Although the Town and DEEP have both expressed concerns regarding stormwater management and degradation of off-site water quality and watersheds in their respective comments to the Council, all aspects of stormwater management at the site is under the exclusive jurisdiction of DEEP's Water Permitting and Enforcement Division.

(Petition 1347, 10/26/2018 Staff Report, at 11.) DEEP may be the agency charged with issuing stormwater permits, but the Council is charged with authorizing the construction of facilities like the one proposed here, and the legislature directed that it may only do so where the Council has determined that it will meet DEEP water quality standards. Conn. Gen. Stat. § 16-50k. DEEP therefore does *not* have exclusive jurisdiction over stormwater issues; the Council also has authority over the same, and has an express statutory obligation to review these matters *before* approving any petition.



quality standards, and it is not clear that they *can* be designed to comply with the water quality standards due to the restrictions of the site. (See 8/25/2020 Hearing Tr. at 43-44 (GRE's engineer testifying that no test pits have been done in areas of forebays, and admitting that having an adequate depth for the forebays is necessary to accomplish the goal of pretreatment), 48-49 (GRE's engineer testifying that it was "not feasible" to design the forebays in accordance with the 2004 Manual recommendation for inlet-to-outlet ratio based on site topography and admitting following that recommendation would be more conservative approach), 51 (GRE's engineer admitting that temporary sediment traps must be at least three feet deep and testifying that several of the forebays will be used as temporary sediment traps).)

Many of the forebays are already proposed to be located underneath solar panels due to those restrictions; there is simply no evidence in the record that the requisite forebay sizing and grading will fit on the site, because GRE never provided calculations for the sizing of those basins or plans showing the required grading. The same is true of the temporary sediment traps that GRE added at the eleventh hour without providing supporting calculations or design details or grading. (8/3/2020 S. Trinkaus Supp. Prefiled Testimony at 1-2; see 8/4/2020 Hearing Tr. at 43s.) Several of the basins it has proposed still will not act as infiltrative practices as GRE claimed – yet it has not redesigned them, perhaps because it cannot do so given the lack of deep test pit and infiltration data in key areas of the site and the physical restrictions of the site. (See, e.g., 8/4/2020 Hearing Tr. at 43 (Kochis testifying that the forebay design relies on soil testing done in basin locations, not forebay locations); 8/25/2020 Hearing Tr. at 43-45 (Trinkaus explaining deficiencies in infiltration testing conducted by GRE).)

In short, GRE has not met its burden with respect to water quality standards, and the items that are lacking are not such that they can be remedied in the "details" of a D&M Plan.

D. Given All of the Above, the Council Cannot Make a Finding of No Substantial Adverse Environmental Effect

GRE and its consultants have quite simply failed to provide information that would permit the Council to determine that the project will not have significant adverse environmental effects. As set out above, GRE's submissions have never addressed the risks of adverse impacts on the aquatic life present in Oil Mill Brook and Stony Brook, have never included any investigation of the current conditions of those brooks or the potential thermal and sediment impacts that could result from the project. GRE's failure to address the biota and environment of the two Class A waters bracketing the site and issues potentially occurring downstream in the Niantic River estuary is a glaring omission in light of the environmentally sensitive nature of this site, the Council's denial of the earlier petition, the requirements of the 2004 Manual and standards of professional engineering, and the information presented by STR-STH in the underlying proceeding and in this proceeding. GRE has also ignored the significance of the clear-cutting and grading that it proposes to do in phases of more than five acres at a time, and has at nearly every turn chosen to ignore the most conservative (and therefore protective) options in favor of whatever measure will get shovels in the ground faster.

For example, GRE's engineer, Steve Kochis, testified at the hearing that he had run the water quality volume calculations for the site assuming that the panels were impervious, and that even with that assumption, the calculations did not show an increase in water quality volume. (8/4/2020 Hearing Tr. at 73-74.) When asked if that was true, why had GRE not simply elected to proceed assuming that the panels were impervious, Mr. Kochis said they had started from the Appendix I requirements in order to take conservative measures. (*Id.*) But when asked why he had never run the calculations for *peak rate* for the site using the assumption that the panels were impervious, Mr. Kochis fell back on GRE's expected response in this proceeding:

That isn't expressly required by regulation. (*See id.* at 74 ("There's no regulation or requirement in the State for -- for -- even surrounding states to consider the panels to be impervious for the sake of peak rate runoff.") Mr. Kochis expanded on his testimony by explaining that as a designer, he is simply "designing to regulation" and does not go further unless "required [to do so] by the regulators." (*Id.* at 74.) This site demands more of an engineer, especially in light of the evolving state of regulations with respect to stormwater and ground-mounted solar arrays. (8/4/2020 Hearing Tr. at 63 (Kochis: "I will admit that CT DEEP Appendix I is a guidance document that's open for public comment right now. It's a very new document that I haven't had experience with a construction project with.")).

Similarly, until very late in the proceedings, GRE refused to commit to allow even a full "growing season" (which according to GRE is only a few months, i.e., either fall or spring, but according to the Town is a full year) to allow grass to become established under and around the solar arrays. (*See* 8/4/2020 Hearing Tr. at 19, 58-59.) GRE likewise did not think to design the access roads on the site in the most conservative way possible, so as to lessen its impact on the wetlands and vernal pools on the site, or to explore alternate surfaces, like grass pavers, to replace the impervious gravel access roads. (8/4/2020 Hearing Tr. at 49-50 (GRE's engineer testifying that although grass pavers may might be a feasible alternative to crushed stone for the site access roads that would result in less erosion, but that "unless we're asked otherwise to do to so, to use something alternative, we are proposing crushed stone"). Nor has GRE designed its stormwater controls by taking measures like dropping the soil class down by two levels for areas that are being stumped, grubbed, *and* graded, which GRE's engineer admitted would be a more conservative approach. (*See* 8/4/2020 Hearing Tr. at 72-73; *see also* 8/25/2020 Hearing Tr. at 45-46 (Trinkaus explaining that the draft Appendix I may only propose one step down, but

that experience with Antares site showed that is inadequate where the soils are being graded and grubbed, due to the additional compaction).)

Again and again, GRE could not explain why it had not elected to take a more conservative approach in its design of this site, which can only lead to the conclusion that GRE does not believe it *needs* to design its project to be as protective as possible of the Class A coldwater resources that neighbor the site, or the already impaired Niantic River estuary – unless a regulator specifically tells it design certain measures. That is an incredibly troubling approach for any company to take with respect to a site like this one, and is especially concerning given this developer’s history with respect to the stormwater failure during construction at the Antares solar site in nearby East Lyme. There, the inadequately managed construction activities resulted in erosion and deposits of sediments into receiving streams, an acute effect of this development. A tributary discharging stormwater into Cranberry Meadow Brook, a coldwater trout stream, had its temperature increased by 2°F as a result of the solar field, a long-term chronic effect. This is of importance because warming climate, as well as large-scale changes to Connecticut’s landscape, have already pushed many streams in approaching their upper thermal maximum to hold trout in summer. (See 6/18/2020 D. Danila prefiled testimony, at 12-14; 8/25/2020 Hearing Tr. at 30-33.)

STR-STH also reminds the Council that Appendix I to the General Permit was proposed specifically because of the construction issues that occurred at Antares and other sites. (STR-STH Admin Notice Item #s 35-37 (cease and desist and consent orders issued to other solar projects).) Appendix I is part of a draft proposal from DEEP that is intended to replace the current General Permit, which expires on September 30, 2020, and there is an ongoing rule-making proceeding at DEEP, in which several parties to and individuals involved in this petition are engaged. (See STR-STH Admin Notice Item #s 6-7; see also 8/4/2020 Hearing Tr. at

63 (“CT DEEP Appendix I is a guidance document that's open for public comment right now.”)

The debates surrounding proper stormwater controls and the permitting process for large ground-mounted solar projects reflect not only the novelty of these projects in the last few years, but the high risk that improper controls present. GRE’s repeated assertions that it need only comply with regulations, and not do anything more, to receive its permits, when it is well aware that this is an evolving regulatory area, ignore the very real risks of employing anything other than the most conservative stormwater control measures possible.

The evidence establishes that is very likely that this project will result in thermal impacts and erosion and sedimentation in the brooks and tributaries that lead directly to the Niantic River estuary and will have other impacts to water quality, including likely increased discharges of nitrogen. The Council simply cannot make a finding of no substantial adverse environmental effect given the evidence before it.

**IV. If the Council Nevertheless Decides to Modify its Decision and Approve the Project, Any Approval Must Be Subject to Conditions**

If the Council approves the Project, its approval should be conditioned on GRE redesigning its stormwater system to take into account the deficiencies noted herein and taking measures that will allow for monitoring and later mitigation of the expected adverse environmental effects, as well as more traditional Council conditions. Prevention is always better than remediation in an environmental decision. In this case, prevention of sediment-filled, nitrogen-carrying, heated runoff is the only way to protect the viability of the trout-supporting streams on each side of this proposed project and their receiving water body, the Niantic River. Remediation after such a release is not an option. Therefore, STR-STH respectfully asks the Council to condition any approval on the following:

- Before any site clearing or other construction activities may begin, GRE should be required to undertake a comprehensive wildlife survey in order to satisfy the

DEEP requirements set out in its letters of August 24 and December 4, 2018, and the Council in its denial of Petition 1347. Specifically, GRE should be required to assess the aquatic resources currently present in Oil Mill Brook and Stony Brook, get baseline measures of their health, particularly with respect to temperature, turbidity and nutrient levels, and to undertake detailed surveys for bats, other animals, and state-listed insects in the area. The results of those surveys must be publicly filed with the Council, and all parties, as well as DEEP, should be given the opportunity to comment on whether the results of those surveys require further modification of the proposed project before the initiation of any construction activities.

- Site clearing should only be permitted between October 15 and March 1, to protect wildlife on site, including reptiles, amphibians and bats.
- Site disturbance/clearing should be limited to phases of not more than 5 acres at a time.
- Once cleared, the site must be stabilized through an entire year before construction commences, not just a single fall or spring “growing season.”
- DEEP’s recommendations with respect to protections for the eastern ribbon snake should be adopted.
- GRE should be required to monitor the basins in proximity to the vernal pools on site to ensure that the basins are not acting as decoy pools, in accordance with its proposal submitted during this proceeding, and including reports on the results of that monitoring to be filed with the Council and copied to the parties shortly after each year’s monitoring studies are completed.
- GRE should be required to remove the 300 solar panels it has admitted would be located within 100 feet of a wetland in violation of its own consultant’s recommendations. (GRE appears to have taken this measure in its most recent revised plans, but it should be expressly barred from subsequently attempting to add them back into the project in the D&M Plan.)
- GRE should be required to update its site plans to reflect their adherence to *all* of the conditions of section (1)(a) through (e) of Appendix I, or in absence of that, re-run their WQV numbers with the assumption that the panels are impervious and redesign as warranted by that new calculation.
- All stormwater basins must be designed to fully with the 2004 Manual.
- GRE should be required to provide channel protection volume in all basins, and all panels must be considered impervious for post-development hydrologic analysis, so that the channel protection volume is accurate.
- All basin outlets must discharge to an existing stable outlet point, not to an upland soil area in areas where concentrated flow does not currently occur.
- Before, during and, to be sure of monitoring variable annual conditions, including extreme weather events, for at least 5 years after construction has been completed, GRE should be required to install monitors to continually measure water temperature and turbidity in all water courses receiving stormwater

discharges. These include the unnamed tributary that runs parallel to Oil Mill Brook and Stony Brook and its tributaries, all of which feed directly into the Niantic River. GRE should be required to first obtain consensus on the study design from the Town and STR-STH (these three entities comprising the “committee”), with the first meeting to be initiated within 60 days of the Council’s approval of the project. The monitoring study should commence as soon as possible to obtain pre-construction and pre-operation data to the extent possible. The study design for monitoring water temperature and turbidity should include specifics on the equipment to be deployed, where placed, and when accessed to download data. Besides “before” and “after” comparisons, sites should be chosen in upstream areas from site stormwater discharges to have “potentially impacted” and “non-impacted” comparisons. The committee needs to precisely define what constitutes an impact with respect to both changes in water temperature and turbidity that can be attributed to the project. Data should be collected and reported at least quarterly to the committee members, DEEP, and the Council, should it decide to maintain as a presence in this matter. The data should be made available online in a usable format to the committee, other agencies, and the public. Should any adverse effects that can be attributed to the project occur, GRE must be required to remedy the same in a manner that is acceptable to the Town, STR-STH, DEEP, and as approved by the Council.

- During construction, a third party sedimentation and erosion control specialist shall be hired by the developer to provide weekly inspection reports to the Council, DEEP STR-STH and the Town, and to promptly correct any problems noted. That inspector shall also visit the site during construction before, during, and immediately after any predicted significant rainfall events, and shall report to the Council and the parties immediately any release of sediment or other failure of the stormwater controls on site.
- GRE should be required to submit a decommissioning plan that is based on actual estimates from companies that recycle solar panels and related components, estimates from companies of the cost of disposal for construction debris, and estimates from companies that provide heavy equipment such as will be necessary to remove the solar arrays and related equipment from the site and to restore it. Research done by Mr. Trinkaus in connection with Petition No. 1410 revealed that the related entity proposing that development likely underestimated the expense of decommissioning by \$1 million or more. The plan must ensure that the Town will not be responsible for decommissioning, whether by requiring GRE to provide a bond or by other measures that provide some financial security.
- GRE should be required to develop and share with the Council the plan of maintenance discussed by the Town fire marshal, namely, to report to the Council how it plans to design and maintain a “non-combustible base” under the solar arrays, as well as to explain how those bases will affect the stormwater engineering of the site.

V. Conclusion

For the reasons set forth above, and as detailed in the evidence STR-STH submitted to the Council during this proceeding, the Council should deny the petition, whether by declining to reopen the underlying petition, or by reopening that petition to modify its decision to deny the petition with prejudice.

**SAVE THE RIVER-SAVE THE HILLS, INC.**

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**CERTIFICATION**

I hereby certify that a copy of the foregoing document was delivered by first-class mail and e-mail to the following service list:

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