UNITED STATES COURT OF APPEALS

FOR THE SECOND CIRCUIT

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August Term, 2006

(Argued: April 10, 2007 Decided: May 2, 2008)

Docket No. 06-5764-ag

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ISLANDER EAST PIPELINE COMPANY, LLC,

*Petitioner*,

—v.—

GINA MCCARTHY,
COMMISSIONER OF CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION,

and

STATE OF CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION,

*Respondents.*

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Before:

KEARSE and RAGGI, *Circuit Judges,* and RESTANI, *Judge.*[1]

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Islander East Pipeline Company, LLC, whose ability to secure federal approval to build a natural gas pipeline across Long Island Sound depends, in part, on the procurement of a water quality

[1] The Honorable Jane A. Restani, Chief Judge of the United States Court of International Trade, sitting by designation.

certification from the State of Connecticut Department of Environmental Protection, petitions this court for review of what Islander East contends is an arbitrary and capricious second denial of certification.

The petition for review is denied.

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FREDERICK M. LOWTHER (Beth L. Webb, Janet M. Robins, *on the brief*), Dickstein Shapiro LLP, Washington, D.C.; Anthony M. Fitzgerald, Carmody & Torrance, LLP, New Haven, Connecticut; Thomas L. Stanton, Associate General Counsel, Spectra Energy Islander East Pipeline Company, LLC, as Operator for Islander East Pipeline Company, LLC, Waltham, Massachusetts, *for Petitioner.*

KIMBERLY P. MASSICOTTE, Assistant Attorney General (Richard M. Blumenthal, Attorney General for the State of Connecticut; John M. Looney, David H. Wrinn, Scott N. Koschwitz, George W. O'Connell, Assistant Attorneys General, *on the brief*), Office of the Attorney General, Hartford, Connecticut, *for Respondents.*

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REENA RAGGI, *Circuit Judge*:

This case arises from the ongoing efforts of Islander East Pipeline Co., LLC ("Islander East") to secure a water quality certification from the Connecticut Department of Environmental Protection ("CTDEP") for a plan to build a natural gas pipeline from Connecticut to New York across Long Island Sound. Such certification is a necessary prerequisite to Islander East securing final federal approval for its pipeline project under the Natural Gas Act of 1938 ("NGA"), Pub. L. No. 75-688, 52 Stat. 831 (codified as amended at 15 U.S.C. §§ 717-717w). Pursuant to NGA § 19(d), 15 U.S.C. § 717r(d), Islander East petitions this court for review of the CTDEP's December 19, 2006 denial of certification, which Islander East challenges as arbitrary and capricious, see CTDEP, Water Quality Certification Application No. 200300937-SJ, Islander East Pipeline Co., LLC (Dec. 19, 2006) ("2006 Denial"). The argument is familiar to us. In a published opinion filed October 5,

2006, a majority of this panel vacated the CTDEP's initial February 5, 2004 denial of certification to Islander East as arbitrary and capricious and remanded for further agency review of the pipeline application. See Islander East Pipeline Co. v. Conn. Dep't of Envtl. Prot. ("Islander East I"), 482 F.3d 79 (2d Cir. 2006).

The CTDEP has now completed that review and persists in denying certification. Whatever reservations might legitimately be voiced as to this latest decision, see infra at **[ ]** (Restani, J., dissenting in part), judicial review of the CTDEP's denial is limited to the grounds set forth in the Administrative Procedure Act ("APA"), specifically 5 U.S.C. § 706(2)(A), which provides that we are to "hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." Because the CTDEP supports its second denial with reasoned explanations tied to record evidence, this court can no longer dismiss its conclusions as unlawful under the APA. Accordingly, we deny Islander East's petition for review.

## I. Background

### A. The Regulatory Scheme

Although we assume readers' familiarity with our prior opinion in Islander East I, 482 F.3d 79, our discussion of the relevant facts as well as our assessment of the merits of Islander East's petition are facilitated by a preliminary review of the relevant regulatory scheme.

#### 1. The Natural Gas Act

The Natural Gas Act of 1938 comprehensively regulates the transportation and sale of natural gas in interstate commerce. See id. at 84. Pursuant to NGA § 7, any party seeking to construct, extend, acquire, or operate a facility for the transportation or sale of natural gas in interstate

commerce must secure "a certificate of public convenience and necessity" from the Federal Energy Regulatory Commission ("FERC"). See 15 U.S.C. § 717f(c)(1)(A).[2] Further, the FERC must ensure that the proposed project complies with all requirements of federal law, including, but not limited to, those established by the Clean Water Act, 33 U.S.C. §§ 1251-1387, and the Coastal Zone Management Act, 16 U.S.C. §§ 1451-65. See Islander East I, 482 F.3d at 84 (citing Islander East Pipeline Co., 102 F.E.R.C. ¶ 61,054, p. 61,130 (2003)).

While the NGA generally preempts local permit and licensing requirements, see id. (citing Islander East Pipeline Co., 102 F.E.R.C. ¶ 61,054, p. 61,130); National Fuel Gas Supply Corp. v. Pub. Serv. Comm'n, 894 F.2d 571, 576-79 (2d Cir. 1990), the Clean Water and Coastal Zone Management Acts are notable in effecting a federal-state partnership to ensure water quality and coastal management around the country, so that state standards approved by the federal government become the federal standard for that state. See Islander East I, 482 F.3d at 90 n.9 (explaining that, under Clean Water Act, state water quality standard approved by federal Environmental Protection Agency ("EPA") "becomes 'the water quality standard for the applicable waters of that State'" (quoting 33 U.S.C. § 1313(c)(3))). Consistent with this scheme, the two Acts require applicants for federal permits to provide federal licensing agencies such as the FERC with certifications from

[2] By order dated September 19, 2002, the FERC concluded that Islander East's proposed pipeline was required by public convenience and necessity because it would provide the significant public benefit of a second source of natural gas for Long Island in an environmentally acceptable manner. See Islander East I, 482 F.3d at 86. In a Final Environmental Impact Statement ("FEIS") prepared preliminary to this order, the FERC had identified a preferable alternative pipeline route that "had a shorter Long Island Sound crossing, avoided more shellfish leases, and would only have air quality and noise impacts onshore in Connecticut." Id. (citing FERC, Islander East Pipeline Project, FEIS (2002)). Nevertheless, the FEIS concluded that, if Islander East employed certain measures to mitigate environmental impacts along its proposed route, its plans for the pipeline would also be environmentally acceptable. See id.

affected states confirming compliance with local standards. See id. at 84 & nn. 3-4 (citing 16 U.S.C. § 1456(c)(3)(A); 33 U.S.C. § 1341(a)(1)).

Islander East's dispute with the CTDEP regarding its compliance with the state's coastal zone management plan is the subject of a different appeal pending in this court, see State of Connecticut v. United States Dep't of Commerce, Nos. 07-4522-cv(L), 07-4593-cv(CON).[3] Accordingly, on this petition, we consider only Islander East's challenge to the CTDEP's denial of the water quality certification that, being mandated by the Clean Water Act, is a necessary prerequisite to the FERC granting final approval to commence construction of the proposed pipeline.

2. The Clean Water Act

The Clean Water Act specifically protects "existing" and "designated" uses of navigable waters. PUD No. 1 of Jefferson Cty. v. Washington Dep't of Ecology, 511 U.S. 700, 704-05 (1994) (citing 33 U.S.C. § 1313(c)(2)(A) & (d)(4)(B); 40 C.F.R. § 131.12). Thus, a state's water quality standards must identify existing and designated uses, such as drinking, recreation, wildlife support, and shellfish cultivation, and must establish "'water quality criteria for such waters based upon such uses.'" Id. at 704 (quoting 33 U.S.C. § 1313(c)(2)(A)). Further, pursuant to the Clean Water Act's "antidegradation policy," a state's water quality standards must "be sufficient to maintain existing beneficial uses of navigable waters, preventing their further degradation." Id. at 705 (citing 33 U.S.C. § 1313(d)(4)(B)). The mandate's broad reach is reflected in 40 C.F.R. § 131.12(a)(2), which provides that states "shall assure water quality adequate to protect existing uses fully." Thus, no activity that would "'partially or completely eliminate any existing use'" is permitted, even if it

[3] On January 23, 2008, a different panel of this court dismissed the appeal for lack of subject matter jurisdiction. Appellants filed a petition for rehearing on April 9, 2008.

would leave the majority of a given body of water undisturbed. PUD No. 1 of Jefferson Cty. v. Washington Dep't of Ecology, 511 U.S. at 718-19 (quoting EPA, Questions and Answers on Antidegradation at 3 (Aug. 1985)).[4]

To protect against water quality degradation, states may employ both quantitative and open-ended standards. See id. at 715-17; see also 40 C.F.R. § 131.11 (providing for states to establish numerical and narrative criteria). Open-ended standards serve to ensure against under-inclusiveness in circumstances where it may be impossible to formulate a generalized quantitative standard applicable to all cases. See PUD No. 1 of Jefferson Cty. v. Washington Dep't of Ecology, 511 U.S. at 716-18. In applying open-ended standards, however, a state is expected to translate its narrative criteria into "specific limitations for individual projects." Id. at 716.

3. Connecticut's Water Quality Standards Pursuant to the Clean Water Act

Two narrative water quality standards figure prominently in this case. Connecticut Surface Water Quality Standard No. 1, as amended, states:

> It is the State's goal to restore or maintain the chemical, physical, and biological integrity of surface waters. Where attainable, the level of water quality that provides for the protection and propagation of fish, shellfish, and wildlife and recreation in and on the water shall be achieved.

Connecticut Dep't of Envtl. Prot., Water Quality Stds. at 1 (effective Dec. 17, 2002), http://www.ct.gov/dep/lib/dep/water/water_quality_standardsl/wqs.pdf.

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[4] Because the CTDEP does not contend that any adverse impact on water quality, however trivial or temporary, would constitute the elimination of an existing use, we need not consider that possibility on this petition. We note, however, that the EPA, in revising its anti-degradation policy in 1983, deleted a provision that disallowed any "further water quality degradation which would interfere with or become injurious to existing instream uses." Water Quality Standards Regulation, 48 Fed. Reg. 51,400, 51,402 (Nov. 8, 1983). The EPA made this change "because the terms 'interfere' and 'injurious' were subject to misinterpretation as precluding any activity which might even momentarily add pollutants to the water." Id. at 51,402-03.

Connecticut Surface Water Quality Standard No. 2 states:

> Existing and designated uses such as propagation of fish, shellfish, and wildlife, recreation, public water supply, agriculture, industrial use and navigation, and the water necessary for their protection [are] to be maintained and protected.

Id.

Pursuant to these standards, the CTDEP "Commissioner shall not issue any certificate or permit for any regulated discharge, dredging activity or discharge of fill and dredged materials unless the Commissioner finds that all existing and designated uses as defined in these water quality standards will be protected fully." Id., App. E-1; see also id. at 1 (Surface Water Quality Std. No. 2).

The coastal waters at issue in this petition are denominated by Connecticut as either "SA" or "SB/SA." SA waters are designated for "habitat for marine fish, other aquatic life and wildlife; shellfish harvesting for direct human consumption; recreation; industrial water supply; and navigation." Id. at 15 (Coastal Waters Classifications and Criteria). SB waters are designated for "habitat for marine fish, other aquatic life and wildlife; commercial shellfish harvesting; recreation; industrial water supply; and navigation." Id. While waters in the intermediate SB/SA classification may not currently support one or more of the uses designated for SA waters, e.g., "shellfish harvesting for direct human consumption," the state's goal for such waters is the "achievement of Class SA Criteria and attainment of Class SA designated uses." Id. Indeed, SA classification is a default classification for marine waters in Connecticut. See id. at 7. Thus, to the extent the impact of the proposed pipeline on shellfish harvesting is at issue on this petition, we note that all marine waters in Connecticut appear to be designated for shellfish harvesting unless the state has specifically

established a lesser water quality classification in a given area. See id. at 7, 15.[5]

B. The Proposed Pipeline

1. The Pipeline Route from Connecticut to New York

On June 15, 2001, Islander East filed an application under NGA § 7(c) with the FERC for a certificate of public convenience and necessity to construct, own, and operate a natural gas pipeline between Connecticut and New York. See Islander East Pipeline Co., 97 F.E.R.C. ¶ 61,363, p. 62,685 (2001). Islander East proposed to construct 44.8 miles of 24-inch-wide pipeline from an interconnection with an existing pipeline near North Haven, Connecticut, to Brookhaven, New York. A further 5.6 miles of pipeline would be constructed from Islander East's anticipated mainline near Wading River, New York, to a power plant in Calverton, New York. Id. The petition before this court focuses on the 22.6-mile section of pipeline that would cross Long Island Sound. See Islander East Pipeline Co., 100 F.E.R.C. ¶ 61,276, p. 62,102 (2002).

2. The Construction Techniques Relevant to the Challenged Denial

Islander East proposed to employ three construction techniques in building the offshore section of the pipeline — horizontal directional drilling, dredging, and plowing — which the CTDEP concludes would adversely affect the existing and designated uses of the state's coastal waters, particularly as they pertain to shellfish harvesting. We briefly describe these techniques and some of the concerns identified with respect to each.

[5] This goal is consistent with Connecticut's significant role in the nation's production of hard clams and oysters for human consumption. See 2006 Denial at 23-24 (reporting that, in 2001, state ranked first in production of hard clams and second in its production of oysters among East Coast states).

a. Horizontal Directional Drilling

To install a pipeline running from a natural gas connection site on land in Connecticut into Long Island Sound, Islander East proposed to employ a horizontal directional drill to create a 4,200-foot tunnel underneath nearshore waters off Branford, Connecticut. See Islander East Pipeline Project, Permit Application for: 401 Water Quality Certificate ("Permit Application"), App. A, Maritime Pipeline Installation Methodology at 1 (Mar. 14, 2003) ("Installation Methodology"); see also 2006 Denial at 30 & App. B. The tunnel would start some 700 feet inland, where the drill would burrow to a depth of 110 feet below sea level. See Permit Application, Attachment C. The drill would then level off and proceed south for about 2,000 feet, after which it would drill diagonally upwards until it emerged from the Sound's seabed around milepost 10.9. See id.

Once the horizontal directional drill bored a small-diameter "pilot hole" the length of the tunnel, Islander East proposed to enlarge that hole by a process called "reaming." See Permit Application, Installation Methodology at 9-10. To effect this enlargement, a "drill string" would first be driven through the pilot hole to the offshore exit point. There, workers on board a barge would attach a reaming tool to the string, which would, in turn, be pulled back through the tunnel toward the drilling rig on shore. On its way, the reaming tool would cut rock and soil until the tunnel was enlarged to a diameter of 36 inches. See id. at 10. At that point, a mile-long segment of pipe would be pulled into place near the exit hole, then pulled back through the tunnel toward the drilling rig, thereby installing that underground segment of pipeline. See id. at 1, 10.

"Drilling fluid," a substance composed of 97 percent fresh water and 3 percent bentonite clay, would be continuously pumped into the borehole throughout the drilling process. See Conn. Siting Council, Finding of Facts, Dkt. No. 221 at 19 (Aug. 1, 2002); Permit Application, Installation

Methodology at 7. This fluid would travel from equipment on the surface, through the inside of the drill pipe, out the end of the pipe, and back to the surface along the space between the drill pipe and the interior wall of the tunnel. The circulation of drilling fluid would both supply hydraulic power to the drill bit and transport soil and rock cuttings from the drill bit to the surface. See Permit Application, Installation Methodology at 7, 9. Islander East proposed to recapture, filter, and recycle most, but not all, of the drilling fluid. See id. at 7. Based on Islander East's estimates, the FERC concluded that, when the drill exited the seabed at milepost 10.9, approximately 455 barrels of drilling fluid would necessarily be released from the borehole onto the sea floor, covering an area approximately 444 feet in diameter to a depth of 5 millimeters. See FEIS 3-53. In addition to this planned release, the CTDEP identified a risk that drilling fluid could escape into Sound waters through geologic fissures in the bedrock, an unplanned release called a "frac-out." See 2006 Denial at 60 (citing FEIS 3-54).

b. Dredging and Backfilling

To install the next section of pipeline from milepost 10.9 to milepost 12, an area of shallow waters between 13 and 20 feet deep, Islander East proposed to dredge a v-shaped trench 5 feet into the seabed. See 2006 Denial at 32-33. To accommodate the pipeline's transition from tunnel to trench, Islander East would also dredge an acre-sized exit pit at milepost 10.9 approximately 18 feet deep, 130 feet wide, and 301 feet long. See FEIS 3-53; 2006 Denial at 32. To create this exit pit and trench, Islander East would remove approximately 24,000 cubic yards of sediment from approximately 5.5 acres of seabed. See Islander East Pipeline Project, Offshore Dredge Disposal Permit Amendment at 2 (July 29, 2003). Although Islander East originally proposed that, after installation of the pipeline into the trench, it would backfill the dredged areas with the removed

sediment, in response to sedimentation concerns[6] identified by the CTDEP about that process, Islander East modified its proposal to provide for most of the dredged materials, or "spoil," to be placed on barges for open water disposal. See id. at 6-10. Islander East would then refill the trench and exit pit with an "engineered backfill" composed of small non-native rocks and sand. This backfill would be deposited into the trench with a "tremie tube," a specialized funnel designed to channel the backfill directly into the trench. See 2006 Denial at 36-37 (citing Haley & Aldrich, Inc., Report on Engineered Backfill Study (May 21, 2003)).

c. Plowing

To complete pipeline installation in waters beyond milepost 12, Islander East proposed to continue excavation of the 5-foot-deep trench using a subsea plow, supplemented with hand-excavation by divers in certain areas. See id. at 35; Permit Application, Installation Methodology at 1. Plowing would require a barge to pass over the pipeline route three times: (1) to lay the pipe, (2) to pull a "post-lay plow," and (3) to pull a "backfill plow." See Permit Application, Installation Methodology at 1, 5-6. At the first step, crew on the barge would weld pipe pieces together to set onto the sea floor. As each length of pipe was so laid, the barge would move ahead approximately forty feet where the welding and laying process would begin anew. See id. at 2-3. At the second step, a barge would make another pass over each area, this time to lower a post-lay plow over the pipeline that had been laid on the sea floor. This plow would hydraulically close to encapsulate the pipe, at which point the barge would move forward, excavating a trench into which the pipe could be released when the plow was reopened. See id. at 5. At the third step, a barge equipped with a

[6] Sedimentation is the term used to describe the process where loose sediment suspended in the water column settles onto the sea floor. See infra at **[30-35]** (discussing CTDEP's sedimentation concerns in this case).

backfill plow would fill in the trench with dredged materials. See id. at 6.

In each of these three passes, a barge would likely use an anchor-mooring system to move the vessel along the pipeline path, pulling in bow anchor lines and releasing stern anchor lines. See id. at 2, 5. Anchor-handling tugboats would move the bow anchors forward and pick up the stern anchors. See id. at 5. Each time anchors were thus set, they would necessarily strike the sea floor, dispersing sediment and leaving a depression several feet deep over areas of roughly 200 square feet per strike. See 2006 Denial at 41 (citing TRC Envtl. Corp., Impacts Analysis Report at 30 (Feb. 12, 2002)); see also TRC Envtl. Corp., Impacts Analysis Report § 3.1.3 (May 2003) (updated version of 2002 Report) (estimating that "[t]he total area impacted by the anchor drops from the plowing operations would be about 7.3 acres"). Meanwhile, the cables attaching the anchors to a barge would drag across the sea floor as the barge moved, resulting in "cable sweep," causing shallow depressions in the seabed and further dispersing sediment. 2006 Denial at 40-43 & n.60 (citing, inter alia, TRC Envtl. Corp., Impacts Analysis Report 28, 30 (Feb. 12, 2002)).

C. Islander East's Efforts to Secure Water Quality Certification

1. The CTDEP's 2004 Denial of Certification

Islander East first applied to the CTDEP for a water quality certification for its pipeline project on February 13, 2002. See Islander East I, 482 F.3d at 87. The following year, on March 13, 2003, Islander East withdrew that application and substituted a new one incorporating modified offshore construction techniques aimed at reducing the project's environmental impacts. See id. (detailing proposed modifications). The CTDEP nevertheless denied certification on February 5, 2004, concluding that the pipeline project was inconsistent with state water quality standards in at least two respects: (1) the various processes associated with pipeline installation "would cause

temporary water quality disturbance, permanent change to the benthic substrate [(the sea floor)], and negative impacts to the aquata biota," inconsistent with the goal of Connecticut Surface Water Quality Standard No. 1 "to restore or maintain the chemical, physical, and biological integrity of surface waters," id. at 95 (internal quotation marks and citations omitted); and (2) backfill discharge would permanently degrade waters in the vicinity of the Thimble Islands, rendering the seabed unsuitable for various shellfish and organisms presently inhabiting the area, which result would be inconsistent with Connecticut Surface Water Quality Standard No. 2 and Connecticut's anti-degradation policy, which requires "the maintenance and protection of water quality in high quality waters and protection and maintenance of existing uses in all cases," id. at 100 (internal citations omitted). Islander East challenged the CTDEP denial in a state action filed in the Connecticut Superior Court, see Islander East Pipeline Co., LLC v. Envtl. Prot. Comm'r, No. HHD-CV-04-4022253-S (Conn. Super. Ct., filed June 21, 2004), which it subsequently withdrew.

2. This Court's 2006 Decision Vacating the CTDEP's Initial Denial

Islander East's withdrawal of its state challenge and its initial petition for review by this court were prompted by Congress's enactment of the Energy Policy Act of 2005, Pub. L. No. 109-58 , 119 Stat. 594. Section 313(b) of the Act amended § 19 of the NGA to afford United States Courts of Appeals "original and exclusive jurisdiction over any civil action for the review of an order or action of a Federal agency . . . or State administrative agency acting pursuant to Federal law to issue, condition, or deny any permit, license, concurrence, or approval . . . required under Federal law" for the construction of a natural gas facility. 15 U.S.C. § 717r(d)(1); see also Islander East I, 482 F.3d at 88 (noting that Islander East's petition for judicial review was filed on same day NGA amendment was signed into law).

Following argument, this court, by majority decision, rejected the CTDEP's constitutional and retroactivity challenges to Islander East's first petition. See Islander East I, 482 F.3d at 91, 93. Turning to the merits, the court concluded that the CTDEP's denial of certification was, as a whole, arbitrary and capricious. See id. at 104-05. With respect to the CTDEP's conclusion that the project was inconsistent with Surface Water Quality Standard No. 1, the court observed that the CTDEP had failed both to cite record evidence reasonably supporting its finding of permanent harm to natural habitats and benthic substrate, see id. at 98-99 (noting that cited sources did not support conclusion that sedimentation in pipeline area would result in permanent loss of shellfish habitat), and to address contrary evidence on the point, see, e.g., id. at 97 (noting four reports projecting recovery of shellfish habitat). As for the CTDEP's conclusion that the project was inconsistent with Surface Water Quality Standard No. 2, the court faulted the agency for failing to define the area affected, not acknowledging evidence that engineered backfill could improve shellfish habitat, and relying on negative past experiences with construction projects in the Sound without considering subsequent advances in pipeline construction technology. See id. at 100-04.

The court's conclusion that the CTDEP's denial of certification was arbitrary and capricious was reinforced by two further facts: the surprising brevity of the agency's analysis relative to the voluminous and complex record, see id. at 105,[7] and documentary evidence suggesting that the agency had pre-determined to oppose the pipeline project under any circumstances, see id.[8] While

[7] In Islander East I, we contrasted lengthy reports by the FERC, such as its August 2002 FEIS, which spanned hundreds of pages, with the CTDEP report, which contained "a mere two-and-a half pages of analysis, supported by five record citations, none of which . . . reasonably support the broad conclusions reached." 482 F.3d at 104.

[8] The court noted that "some evidence indicates the CTDEP's greater concern with mounting a public relations campaign to preclude building the pipeline than with neutrally evaluating the

the court's independent review of the voluminous administrative record identified some evidence potentially supportive of the CTDEP's conclusion, the majority declined "to mine the record for evidence" not identified by the agency, id. at 100, noting principles of administrative review instructing that a federal court "may not supply a rationale for agency action where the agency has provided none" or "construct support for an agency's conclusion when the agency has not pointed to evidence on the record favoring its decision," id. at 101 (citing Motor Vehicle Mfrs. Ass'n of the U.S., Inc. v. State Farm Mut. Auto. Ins. Co. ("State Farm"), 463 U.S. 29, 42-43 (1983)).[9]

Accordingly, being careful to "draw no conclusion" as to whether the record evidence obligated the CTDEP to grant Islander East's certification application, we remanded the case to the agency with instructions that it "conduct the sort of complete and reasoned review required by law." Id. at 105.

3. The CTDEP's 2006 Denial of Certification

Following remand, the CTDEP reexamined the record and, on December 19, 2006, again denied Islander East's application for a water quality certification. See 2006 Denial. We do not here attempt to outline the numerous findings made and conclusions reached in the agency's 82-page decision because we review many of these in the discussion section of this opinion. We note simply that Islander East promptly petitioned for judicial review, arguing that this second denial was also

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record evidence." Islander East I, 482 F.3d at 105.

[9] Judge Kearse, in her dissenting opinion in Islander East I, did mine the record for evidence supporting the CTDEP's denial decision. See 482 F.3d at 108-16 (stating "We are not to supply the rationale for an agency decision; but where the agency has stated its rationale, or where its rationale may reasonably be discerned, we are required to review the whole record, and to uphold the agency decision if it is supported by substantial evidence on the record considered as a whole." (internal quotation marks and citations omitted)). Not surprisingly, much of that evidence is now relied on by the CTDEP in support of its second denial of certification.

arbitrary and capricious.

## II. Discussion

### A. Jurisdiction and Standard of Review

Under the Energy Policy Act of 2005, this court has jurisdiction to remand the CTDEP denial of certification if it is "inconsistent with the Federal law governing such [action] and would prevent the construction, expansion, or operation of the facility subject to [the NGA]." 15 U.S.C. § 717r(d)(3). There is no dispute that the 2006 Denial would prevent the construction of the proposed natural gas pipeline. This leaves only the question whether the denial is inconsistent with federal law. In Islander East I, we concluded that this question is subject to two-step consideration. See 482 F.3d at 94-95. At step one, we employ de novo review to determine whether the CTDEP complied with the requirements of relevant federal law. See id. at 94. "If no illegality is uncovered during such a review," we proceed to step two to examine the CTDEP's challenged findings and conclusions "under the more deferential arbitrary-and-capricious standard of review usually accorded state administrative bodies' assessments of state law principles." Id. (internal quotation marks and citation omitted).

As before, we easily conclude that the CTDEP complied with the procedural dictates of the Clean Water Act in applying state water quality standards to Islander East's permit application. See 33 U.S.C. §§ 1311(b)(1)(C), 1313, 1341(a)(1). This leaves only the second step of analysis: whether the CTDEP's determination that the project would violate Connecticut's water quality standards is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A).

Under the arbitrary-and-capricious standard, judicial review of agency action is necessarily

narrow. See State Farm, 463 U.S. at 43; Environmental Def. v. EPA, 369 F.3d 193, 201 (2d Cir. 2004). A reviewing court may not itself weigh the evidence or substitute its judgment for that of the agency. See State Farm, 463 U.S. at 43. Rather, in deciding whether agency action is arbitrary and capricious, a court considers whether the agency "relied on factors which Congress has not intended it to consider, entirely failed to consider an important aspect of the problem, offered an explanation for its decision that runs counter to the evidence before the agency, or is so implausible that it could not be ascribed to a difference in view or the product of agency expertise." Id.[10]

This is not to suggest that judicial review of agency action is merely perfunctory. To the contrary, within the prescribed narrow sphere, judicial inquiry must be "'searching and careful.'" National Audubon Soc'y v. Hoffman, 132 F.3d 7, 14 (2d Cir. 1997) (quoting Marsh v. Oregon Natural Res. Council, 490 U.S. 360, 378 (1989)); see Ward v. Brown, 22 F.3d 516, 521 (2d Cir. 1994) ("Although narrow, appellate review of an administrative record must nonetheless be careful, thorough and probing."). Notably, a court must be satisfied from the record that "the agency . . . examine[d] the relevant data and articulate[d] a satisfactory explanation for its action." State Farm, 463 U.S. at 43. Further, the agency's decision must reveal "a 'rational connection between the facts found and the choice made.'" Id. (quoting Burlington Truck Lines, Inc. v. United States, 371 U.S. 156, 168 (1962)). A court will not lightly reach a conclusion that an agency has not examined all relevant data or satisfactorily demonstrated a rational connection between the facts it has found and

[10] The Clean Water Act reflects Congress's intent that state environmental agencies consider the factors enumerated in a state's federally-approved water quality standards. See 33 U.S.C. § 1313(c)(2)(A) (providing that "[s]uch standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation").

its final decision. See Patterson v. Caterpillar, Inc., 70 F.3d 503, 505 (7th Cir. 1995) (observing that court "must be very confident that the decisionmaker overlooked something important or seriously erred in appreciating the significance of the evidence" (internal citation omitted)). While a majority of this panel did reach that conclusion in Islander East I, 482 F.3d at 97-100, largely because of the paucity of findings made by the CTDEP, see United States v. Int'l Bhd. of Teamsters, 170 F.3d 136, 143 (2d Cir. 1999) (observing that court must "guard against an agency . . . drawing inferences that are arbitrary in relation to the facts found, no matter how substantial may be the support for those facts" (internal quotation marks and citations omitted)), we cannot do so here where the CTDEP's challenged decision is supported by more detailed findings and analysis.

B. The Challenged Denial of Certification Cannot Be Deemed Arbitrary and Capricious

In its second denial of Islander East's application for a water quality certification, the CTDEP explained that its primary concern was the siting of the proposed pipeline in a Connecticut coastal area that included "an extensive stretch of shallow water" that served as a natural habitat for a variety of shellfish, including clams and oysters. 2006 Denial at 9. As we earlier noted, see supra **[4 n.2]**, the FERC had expressed similar concern in identifying an environmentally preferable alternative route, but thought Islander East would be able to mitigate the adverse impacts of its plan. In evaluating that question, the CTDEP determined that the dredging, plowing, and backfilling methods that Islander East proposed to employ in installing a pipeline in shallow waters would adversely affect shellfish habitat and cause the loss of an existing and designated use, i.e., shellfishing, over an unacceptably large area. See 2006 Denial at 80. Because Islander East's proposed means of remediating these consequences were uncertain to be effective, the agency concluded that Islander East had failed to demonstrate that the pipeline project would comply with state water quality

standards as necessary to secure certification. See Islander East I, 482 F.3d at 104 (noting "Islander East's burden to demonstrate its entitlement to favorable action on its [certification] application"); see also Town of Newtown v. Keeney, 234 Conn. 312, 322 n.5 (Conn. 1995) (noting that applicant in Connecticut administrative proceeding bears burdens of production and persuasion).

In petitioning for review of the CTDEP denial, Islander East submits that two findings critical to the challenged conclusion are unsupported by the record: (1) that the pipeline would pass through existing or potential shellfish habitat, and (2) that the pipeline would have an adverse impact on that habitat resulting in the loss of an existing or designated use. Islander East does not — and, indeed, could not — argue that, if these findings are supported by the evidence, the denial of certification should be deemed arbitrary and capricious. As we noted earlier, 40 C.F.R. § 131.12(a)(2) states that, pursuant to the Clean Water Act, a "State shall assure water quality adequate to protect existing uses fully." Consistent with this obligation, Connecticut Surface Water Quality Standard No. 2 provides that "[e]xisting and designated uses such as propagation of fish, shellfish, . . . and the water necessary for their protection is to be maintained and protected." In addressing Islander East's challenge, we reiterate that we do not ourselves weigh the evidence or choose among competing inferences that might be drawn therefrom. We consider only whether there is sufficient evidence in the record to provide rational support for the choice made by the agency in the exercise of its discretion. See State Farm, 463 U.S. at 42-43. On this deferential standard of review of the record in this case, we deny Islander East's petition for review.

1. Shellfish Habitat Along the Proposed Pipeline Route

In the challenged 2006 Denial, the CTDEP tracked the route of the proposed pipeline from its entry point into Long Island Sound at a recessed section of Connecticut shoreline near Branford

across an expanse of relatively shallow waters through the Thimble Islands. See 2006 Denial at 8. The CTDEP identified seabed conditions in this area as particularly hospitable to shellfish cultivation. See id. at 12-13 (describing how seabed was product of glacier advances and retreats that had left "[t]hick deposits of layered silt and clay" on seabed); id. at 24, 71 (analogizing such seabed to prized topsoil that shellfishermen could stock with "juvenile seed shellfish" much as farmers planted fields with crop seed). It identified a variety of commercially valuable shellfish found in the area, including eastern oysters, hard and soft clams, blue mussels, and channel whelk. See id. at 23. The CTDEP noted that the Connecticut Department of Agriculture had approved for direct human consumption the shellfish procured from the "consistently excellent" nearshore waters in which the pipeline would be installed. Id. at 21-25; see also CTDEP, Map: CT Waters Less Than 50 ft. Classified as SA or SA/SB, with Dep't of Agric./Bureau of Aquaculture "Approved" Shellfishing Designation (Jan. 2007). The CTDEP further noted that the sea floor beneath these nearshore waters had been divided by state and local authorities into plots or beds, which are actively leased to shellfishermen. See 2006 Denial at 26, 55, 59.

In Islander East I, we faulted the CTDEP for failing, in its initial denial of certification, "to point to even one specific lease" that would be affected by the proposed pipeline. 482 F.3d at 101. The 2006 Denial remedied this defect by identifying four shellfish beds that lie directly above the proposed path for the tunnel to be created by horizontal drilling. See 2006 Denial at 59. Further, the CTDEP showed that dredging and plowing activities would affect five state shellfish bed leases and an unidentified number of leases within the jurisdiction of the town of Branford. See id. at 44-46 (identifying 347.54 acres of affected state leases and 240.38 acres of affected Branford shellfish

beds).[11] From the totality of this evidence, the CTDEP could rationally conclude that the proposed pipeline construction activities would adversely affect existing and designated shellfish habitat and uses.

In challenging this conclusion, Islander East submits that the CTDEP has mischaracterized the record to create a false impression that the area in question is "critical" shellfish habitat. Petitioner's Br. at 23-25. Islander East asserts that the area actually supports few or no living shellfish, such that construction of the pipeline cannot rationally be inconsistent with Connecticut's water quality standards. To support this argument, Islander East points to a study in which divers found no oysters or hard clams at sites along the pipeline route, see Peter E. Pellegrino, Bottom Characterization Surveys of Selected Subtidal and Nearshore Environments off Juniper Point (Branford, CT) at 8, 11 (Jan. 2002), and to testimony from Dr. Roman Zajac that, while the pipeline corridor could support shellfish, no oysters or hard clam populations were actually found there, see Conn. Siting Council Hearing Tr. at 54-55, Apr. 12, 2002.

Certainly, this evidence raises legitimate questions about the impact of the proposed pipeline on existing and designated shellfish use. Significantly, the CTDEP did not ignore this evidence. Cf. Islander East I, 482 F.3d at 98 (faulting agency for failing to address studies contradicting its conclusions). Rather, it appears to have accorded it little weight in light of the cyclical nature of commercial shellfishing, which could account for the reported failures to find shellfish at certain sites on discrete occasions. See 2006 Denial at 24-27. As the CTDEP explained, oysters and clams

[11] While Branford did not designate these shellfish beds until 2005, i.e., after Islander East had filed its permit application, they may appropriately be considered in our determination of whether the CTDEP's conclusions are so lacking in evidentiary support as to be arbitrary and capricious. See generally 5 U.S.C. § 706 (instructing courts to "review the whole record" in determining whether agency action is arbitrary and capricious).

often spend the early part of their lives in hatcheries, only later being moved by fishermen to seabeds to mature. See id. at 24-25. Further, because clams burrow, shellfishermen must use dredges to harvest mature specimens, see id. at 25-26, and the CTDEP cited surveys noting "extensive trawl marks" likely attributable to shellfish harvesting just past milepost 12, id. at 26-27. These facts, together with the evidence of active shellfish leases to commercial fishermen, provided sufficient record support for the CTDEP to conclude that waters in the pipeline corridor are an existing and designated habitat for shellfish and that shellfishing is an existing and designated use of these waters. Thus, we cannot conclude that this finding was arbitrary and capricious. See Universal Camera Corp. v. NLRB, 340 U.S. 474, 488 (1951) (holding that reviewing court may not displace agency's choice between "two fairly conflicting views" of evidence).

2. Elimination of an Existing or Designated Use as a Consequence of the Pipeline Construction

In considering Islander East's challenge to the second CTDEP finding — that installation of the pipeline would result in the loss of commercial shellfish harvesting in the waters in the nearshore pipeline corridor — we note at the outset that, in making this determination, the CTDEP discussed in considerably more detail than we include in this opinion a voluminous record of evidence relevant to (1) the geological development of the seabeds in question as valuable shellfish habitat, see 2006 Denial at 12-14; (2) the influence of tidal currents and marine conditions on this habitat, see id. at 14-16; (3) the sensitivity of the habitat to disturbances in the benthic substrate, see id. at 16-19; and (4) the traditional means of shellfish cultivation and harvesting in Connecticut's nearshore waters, see id. at 23-27. The CTDEP further reviewed evidence of (5) the methods Islander East proposed to use in installing the pipeline at issue, see id. at 27-39; and (6) the likely effects of such methods both generally on water quality and benthic substrate and specifically on the established use of

shellfishing, see id. at 39-72. Thus, in contrast to Islander East I, the agency's second consideration of Islander East's application was more careful and thorough. This is not to say that the extensive evidence before the CTDEP pointed ineluctably in a single direction. To the contrary, the agency was frequently presented with conflicting quantitative findings and expert opinions. It was, however, the responsibility of the CTDEP, and not this court, to resolve record contradictions and to determine which evidence was most persuasive and what weight it deserved. See Universal Camera Corp. v. NLRB, 340 U.S. at 488. Mindful that it was Islander East's burden to demonstrate to the CTDEP that its pipeline project complied with state water quality standards, see Town of Newtown v. Keeney, 234 Conn. at 322 n.5, we consider only whether the agency findings are sufficiently grounded in record evidence rationally to support the challenged conclusion that the proposed pipeline would result in a loss of existing and designated shellfishing use, see State Farm, 463 U.S. at 43.

a. The Effects of Anchor Strikes and Cable Sweeps

(1) The CTDEP's Findings

The CTDEP found that the barges used to lay pipeline would generally be equipped with "an array of 8 to 12 anchors," each anchor weighing from 7 to 15 tons and held in place by cables. 2006 Denial at 34. As a barge moves forward either to lay, plow, or backfill the pipeline, anchors would strike the seabed. Islander East's own evidence indicated that each anchor footprint would likely be 1 to 3 feet deep, disturbing 200 square feet of sediment. See id. at 41 (citing TRC Impact Analysis Report at 30 (Feb. 12, 2002) and the "Gulfstream Report" (surveying post-installation conditions in the Gulf of Mexico)). Meanwhile, cables attached to each anchor would drag along the bottom of the sea floor, cutting into the seabed — albeit considerably less deeply than anchors — and releasing

further sediment into the water column. In depths of less than 50 feet, the anchor cables would extend 1,200 feet from each side of the barge, forming a corridor of construction activity approximately 2,400 feet wide. See id. at 46. Although "midline buoys" would suspend part of the anchor cable above the sea floor, as much as 600 feet of each cable line would still drag along the sea floor, leaving incisions. See id. at 34. In waters suitable for shellfish harvesting, i.e., at depths of less than 50 feet, the CTDEP concluded that the corridor affected by anchor strikes and cable sweeps would be 3.85 miles long, occupying a total area of about 1,120 acres that would no longer be available for shellfish harvesting. See id. at 40-41, 70, 80 (concluding that 588 acres of existing shellfishing and 531 acres designated for shellfishing would be lost).

(2) Islander East's Challenges to the Findings

Islander East argues that the CTDEP exaggerates both the area and impact of these strikes and sweeps. It submits that the CTDEP erroneously included in its calculations of the anchor corridor an area of seabed bordering the exit pit and dredge section from milepost 10.9 to milepost 12, thereby inflating the area affected by anchor strikes and cable sweep by 322 acres. Further, the CTDEP erroneously assumed that the full 1,200 feet of anchor cable would sweep the sea floor. Finally, Islander East asserts that, even within the identified corridor of strikes and sweeps, the actual damage would be slight. While the first argument may have some merit, none persuades us that the CTDEP's 2006 Denial was arbitrary or capricious.

First, the CTDEP's finding that Islander East would utilize an anchor-propelled barge in the relatively shallow waters above the exit pit and dredge section may have been erroneous in light of evidence indicating that Islander East had modified its plans to avoid using an anchor array in that area. See Letter from Arthur J. Rocque, Jr., Comm'r, CTDEP, to Gene H. Muhlherr, Jr., Islander

East (July 29, 2003); see also 2006 Denial, App. A at 2; Permit Application, Installation Methodology at 1. Even assuming such error, however, the evidence of anchor strikes and cable sweeps in waters between mileposts 12 and 20 was sufficient to support the CTDEP's finding of a significant loss of existing and designated shellfishing use.[12]

Second, we identify no clear error in the CTDEP's conclusion that an anchor corridor scarred by anchor strikes and cable sweeps would be lost in its entirety to shellfishing. The CTDEP reached this conclusion, not because it assumed that all 1,200 feet of anchor cable would sweep the sea floor, as petitioner alleges, but because it found that the depressions left by plowing, anchor strikes, and even reduced cable sweep would make it too difficult for harvesting equipment to operate throughout the corridor. See 2006 Denial at 70 & n.84 (distinguishing between shellfish habitat and cultivable shellfish beds). Evidence showed that shellfishermen would not venture into such scarred terrain for fear of damaging their equipment. See id. at 70-71; Memorandum from John H. Volk, Conn. Dep't of Agric., to Sue Jacobson, CTDEP at 2 (Oct. 4, 2002) (noting that topographic irregularities caused by dredging will render "area unsuitable for commercial fishing and shellfishing" and that project "will result in a multitude of 'scars' and significant benthic irregularities caused by numerous sets of anchors, spuds, and cable sweeps . . . ."). Larry Williams, a commercial shellfisherman, not only testified that shellfish harvesting dredges could not operate in areas of topographical irregularity, see Conn. Siting Council Hearing Tr. at 128, Apr. 17, 2002 ("[I]f you're left with a

[12] As described above, the CTDEP calculated the area of the anchor corridor supporting an existing or designated use of shellfishing at 1,120 acres. See 2006 Denial at 70. Excluding the seabed from mileposts 10.9 to 12, the projected anchor corridor over shellfishing area appears to be reduced to 798 acres. See id. We note that none of these acres are within the jurisdiction of the Town of Branford, as the boundary separating Branford shellfish beds from state shellfish leases lies between mileposts 11 and 12. See Petitioner's Br., Ex. B.

bottom topography that's so upset and irregular and soft here and hard there . . . it basically becomes undredgeable, the dredges don't work, they'll cut into a high spot, they'll drop into a low spot . . . it just doesn't work."), he stated that he had personally observed such irregularities in an area damaged by a 1991 installation of a natural gas pipeline, the "Iroquois pipeline," see 2006 Denial at 43 (citing Conn. Siting Council Hearing Tr. at 93, 96, Apr. 17, 2002). While Williams testified that it might be possible to navigate around anchor strikes and cable sweeps "if the holes were mapped with GPS coordinate geometry" and "sonar mapping was furnished," Conn. Siting Council Hearing Tr. at 99, Apr. 17, 2002, nothing in the record demonstrated the availability of this technology, much less the likelihood of its successful application or Islander East's commitment to supplying it. Cf. Letter from Gene Muhlherr, Jr., Islander East, to Charles H. Evans, CTDEP (May 27, 2003) (referencing Islander East's commitment to provide an "'as built' survey of the coordinates of the pipeline following construction," with no mention of mapping individual anchor strikes or cable sweeps (emphasis added)). On this record, the CTDEP's failure to reference speculative and extraordinary mitigation measures in its consideration of lost use hardly renders its conclusions arbitrary or capricious.

Third, the CTDEP did not act arbitrarily or capriciously in failing to embrace Dr. Zajac's opinion that the proposed pipeline would result in only minimal cable scarring. See Conn. Siting Council Hearing Tr. at 55, Apr. 12, 2002 (testifying that "cable sweeping would probably disturb [only] the upper . . . few centimeters of the sediment"). Evidence before the agency indicated that the degree of cable scarring can vary widely even in a single body of water depending on the distance of the cable from the anchor and the composition of the seabed. See 2006 Denial at 41 (noting that,

in pipeline installation in Gulf of Mexico, depth of cable scarring ranged from 4 to 12 inches);[13] cf. Power Auth. of New York v. FERC, 743 F.2d 93, 111 (2d Cir. 1984) (observing that, "although reasonable minds could differ as to the inferences that might be drawn from the proof," agency's finding supported by substantial evidence must be upheld). Further, it was not arbitrary or capricious for the CTDEP to consider sediment dispersal caused by sweeps as well as strikes in assessing the loss of waters available for shellfishing. The CTDEP's finding relied on the FEIS, which referenced anchor strikes and cable sweeps without differentiation in observing that, once sediment is released from the sea floor, it loses density and cohesiveness and becomes more susceptible to erosion. See 2006 Denial at 47. The FEIS further indicated that long-lasting depressions associated with anchor strikes and cable sweeps can act as "sediment traps," which, in turn, can lead to "anoxic sediments that develop considerably different communities from the original deposits" and "a long-term conversion of benthic habitat." Id. (quoting FEIS 3-65 (internal quotation marks omitted)).

While the FERC concluded that remedial measures might be devised to minimize this effect, there was record evidence before the CTDEP suggesting that depressions caused by strikes and sweeps would, in fact, be long lasting. Shellfisherman Williams testified that, over a period of some four years, he had observed the persistent scarring to the seabed caused by installation of the Iroquois gas pipeline. See id. at 43. Islander East submits that, because the CTDEP approved the Iroquois pipeline as consistent with Connecticut's water quality standards, it cannot rationally conclude otherwise with respect to Islander East's pipeline proposal. This argument misses the essential point

[13] The CTDEP was careful to note that differences in seabed composition and current velocity precluded an assumption that the impacts experienced in the Gulf would translate to the Sound. See 2006 Denial at 43 n.58. Nevertheless, the report provided some evidentiary support for the CTDEP's skepticism as to Islander East's prediction of minimal cable scarring.

that the CTDEP, with the benefit of hindsight, has now concluded that the Iroquois pipeline failed to comply with the state's water quality standards, and it is this realization that now informs its denial of the Islander East proposal. It is well recognized that "an agency must be given ample latitude to adapt [its] rules and policies to the demands of changing circumstances." State Farm, 463 U.S. at 42 (internal quotation marks and citations omitted). Here the changed circumstances are the observed adverse effects of the Iroquois pipeline despite the passage of time. In Islander East I, we faulted the CTDEP for failing to acknowledge that Islander East proposed to employ more advanced technology than had been available at the time of the Iroquois pipeline installation, see 482 F.3d at 103, or to "point to evidence indicating that [such improvements] would have been inadequate to avoid the topographic irregularities caused by the Iroquois installation," id. at 104. The CTDEP has now acknowledged considerable technological advancements since the installation of the Iroquois pipeline; nevertheless, it found that Islander East's employment of improved techniques would, at best, "minimize . . . but not eliminate" the anticipated effects of "anchor strike and cable sweep impacts." 2006 Denial at 43. Substantial evidence supports the CTDEP's finding that the technological and methodological advances that distinguish the Islander East pipeline proposal from the Iroquois pipeline would not sufficiently reduce the risk of damage caused by anchor strikes and cable sweep to avoid the loss of the existing and designated shellfishing use of a significant area. In the face of scientific or technical uncertainty as to the scope of adverse effects from proposed action, nothing in the APA prevents an agency from considering a "worst case" scenario. Cf. New York v. Reilly, 969 F.2d 1147, 1152 (D.C. Cir. 1992) ("[E]ven if [agency's] prediction did take into account the worst case scenario, its action would be permissible."). Thus, we cannot conclude that the CTDEP's consideration of the adverse consequences of the Iroquois pipeline installation in

issuing the 2006 Denial was arbitrary or capricious.

Islander East further argues that it was arbitrary and capricious for the CTDEP to deny it certification despite, in 2002, allowing the Cross Sound Cable Company to bury heavy power transmission cables beneath Long Island Sound. The latter project is distinguishable in at least two important respects. First, it does not appear to have presented significant problems of anchor strikes and cable sweeps. The narrower trench needed to accommodate power cables was dug, not with a mechanical plow towed by barges, but with a "Smartjet" rig, a remotely operated vessel that used "pressurized water to fluidize sediments into which the . . . cables would settle." Conn. Siting Council, Finding of Facts, Dkt. No. 208 at 13 (Jan. 3, 2002); see also Task Force on Long Island Sound, Comprehensive Assessment and Report, Part II, Environmental Resources and Energy Infrastructure of Long Island Sound at 78 (June 3, 2003) ("Task Force Report"). The schematics attached to the Cross Sound Cable Company's permit application indicate a 100-foot "work corridor," with no mention of an "anchor corridor" or indication of anchor use. See CTDEP, Permit No. 200102720-MG (Mar. 17, 2002). Second, while the Cross Sound Cable project traversed shellfishing beds, the beds at issue were dormant with no evidence of foreseeable future use. The record indicated that the cable path traveled 3.75 miles along an existing navigation route, the Federal Navigation Channel, in order "to substantially avoid cultivated shellfish beds." Task Force Report at 78. To the extent shellfish beds were delineated within the Federal Navigation Channel, they were "not now, and have not been actively cultivated for at least the previous five years." Conn. Siting Council, Findings of Fact at 21. Thus, in contrast to this case, where the CTDEP found that Islander East's pipeline project would cause a long-term loss of shellfishing beds in existing or foreseeable future use, the Cross Sound Cable project implicated only dormant beds that were

expected to remain so. Where circumstances are thus distinguishable, the different CTDEP rulings do not demonstrate arbitrary or capricious decision-making. See State Farm, 463 U.S. at 42.

In sum, in light of the totality of the evidence supporting the CTDEP's finding of lost use, as well as its finding that Islander East had failed to demonstrate that it would (or even could) restore the scarred seabed within a reasonable time to its pre-installation condition, we conclude that the agency did not act arbitrarily or capriciously in denying a water quality certification to build the pipeline.

b. Engineered Backfill

While the CTDEP's findings as to the lost shellfishing use caused by anchor strikes and cable sweeps, by itself, warrants our denial of Islander East's petition, that conclusion is further supported by the agency's identified concerns regarding the ability of engineered backfill to restore 5.5 acres of shellfish habitat that would be destroyed by dredging the exit pit and the adjoining mile-long trench. See 2006 Denial at 65-69, 81.

Once again, the CTDEP's concern derives from the site of the proposed pipeline. The exit pit and trench would be dredged in nearshore waters, 13 to 20 feet deep, that are used and designated for shellfishing. Although Islander East had originally planned to mound dredged material adjacent to the pit and trench for subsequent backfill, evidence indicated that waves and wind-generated currents in the affected waters posed a serious risk of dispersing sidecast spoil into the water, resulting in sedimentation. See id. at 36. Apparently, sediment deposits a few millimeters thick may smother some benthic species, including "juvenile oysters." Id. at 51-52 (citing Letter from John C. Roberge, Roberge Associates Coastal Engineers, LLC, to John Opie, First Selectman, Town of Branford at 2 (Feb. 4, 2004)). To alleviate these concerns, Islander East proposed to remove the

dredged sediment and to use an engineered material consisting of small rocks and sand to refill the trench. In denying certification, the CTDEP noted "[d]iscrepancies in the record" regarding the precise composition of this engineered material, which made it impossible to assess "the full extent of resulting sedimentation" and the "scour resistance" of the backfill. Id. at 38-39. More important, the CTDEP noted that no "reasonable prediction of benthic community establishment" could be made without knowing "the exact sediment grain size difference between the existing native substrate" that would be removed "and the new backfill" that would replace it. Id. at 39.

Islander East concedes what the record confirms, i.e., that "[t]he composition of the backfill is unresolved." Petitioner's Br. at 28; see 2006 Denial at 36-37 (comparing Islander East proposal to use sand on top of rock or gravel less than 4 inches in diameter with Haley & Aldrich Report recommending no more than 2-inch diameter gravel together with .187-inch coarse sand and small percentage of fine sand). Nevertheless, it submits that it should not be denied a permit for its good faith efforts to mitigate the CTDEP's concerns about the sedimentation of dredged materials. Islander East's argument might be persuasive if the CTDEP had imposed a supplemental condition on an otherwise meritorious certification application. But that is not the case. It is undisputed that the usual practice of casting dredged spoil to the side of a trench for subsequent backfill raised legitimate concerns about sedimentation along the proposed pipeline route. Thus, Islander East's application was not meritorious without the inclusion of a concrete proposal for adequate backfill mitigation measures. In proposing alternative backfill materials to carry its certification burden, Islander East introduced new concerns about the suitability of foreign backfill as shellfish habitat. It was not arbitrary or capricious for the CTDEP to have noted those concerns or to have sought their resolution preliminary to granting certification.

In Islander East I, we faulted the CTDEP for failing both to cite record evidence supporting its summary conclusion that engineered backfill would "permanently degrade the benthic substrate along the pipeline route," 482 F.3d at 102, and to acknowledge evidence suggesting likely recovery, see id. at 102-03. The agency has now addressed both points at length, explaining why it gave "little weight" to those studies predicting rapid restoration of shellfish habitat based on seabed recovery from natural disturbances. 2006 Denial at 66. The CTDEP expressed

> no reason to doubt that, under perfect circumstances, in the native substrate, benthic organisms would eventually recover. The three to five year recovery predictions offered in the above-referenced scientific studies are generally based on observations of benthic community succession following dredging or other disturbances such as storm events which redeposit[] naturally-occurring sediment which is not the case with the activity proposed by Islander East. The habitat needs to recover before the benthic organisms can recolonize the area. . . . [T]he primary factor in recovery time is first obtaining habitat suitability.

Id. at 67 (emphasis in original). Moreover, the agency noted no available studies "that offer predictions on benthic colonization in an entirely new, and very different material than the native substrate." Id. at 68. Observing that the native substrate to be displaced by Islander East's proposed pipeline consisted of compact, fine-grained sediments, see id. at 69, the CTDEP cited evidence indicating that the replacement of such material with a predominantly rocky backfill would not only deprive soft shellfish of a medium into which they could burrow, it would also attract shellfish predators. See id. at 6, 68-69 (citing comments of John H. Volk, Connecticut Department of Agriculture). Although Islander East submitted a report indicating that rocky backfill could actually promote habitat diversity by "improv[ing] conditions for two valuable commercial species, oyster and lobster," TRC Envtl. Corp., Evaluation of Benthic Impacts Associated with Islander East's Modified Offshore Construction Techniques § 4 (Feb. 17, 2003), we cannot conclude that the CTDEP acts arbitrarily or capriciously when it fails to view a potential increase in certain shellfish

species as an adequate offset for the decrease in other species, such as soft-sediment clams. This sort of balancing falls squarely within the agency's environmental expertise, and is consistent with the federal anti-degradation mandate that "[s]pecies that are in the water body and which are consistent with the designated use . . . must be protected, even if not prevalent in number or importance." Questions and Answers on Antidegradation, in EPA, Water Quality Standards Handbook, App. G at 3 (2d ed. 1994) (emphasis in original).

Islander East submits that the CTDEP failed to note its alternative proposal to backfill the trench with sand, a substance that would avoid the noted predator concern. See Letter from Joe Reinemann, Islander East, to Joanne Wachholder, FERC, et al. (Apr. 17, 2003). While this evidence may demonstrate Islander East's good faith willingness to explore alternatives, absent a further showing that a sand backfill would likely restore the affected 5.5 acres to shellfish habitat, we identify no abuse of discretion in the CTDEP's failure specifically to address this alternative. Cf. 2006 Denial at 66, 69 (noting that original substrate was plastic and cohesive, so that, while sand would be a better backfill than rock, it would not be as good as silt in restoring shellfish habitat). This is not to foreclose the possibility that some engineered backfill might be identified to provide adequate assurance of habitat restoration along the proposed pipeline. But in the absence of such a showing by Islander East, we conclude that the CTDEP did not act arbitrarily or capriciously in relying on the lost use attributable to backfill concerns as well as the lost use attributable to anchor strikes and cable sweeps in denying certification.

c. Sedimentation and Drilling Fluid Release

The CTDEP cited two additional reasons for denying Islander East a water quality certification: (a) dredging and plowing (even with spoil removal) would cause sedimentation,

adversely affecting more than 80 acres of shellfish habitat, see id. at 50-55; and (b) planned and unplanned releases of drilling fluid would destroy at least 3.55 acres of shellfish habitat, see id. at 56-65. While both concerns are legitimate, we identify some evidentiary issues with the CTDEP's conclusions that might warrant remand in the absence of the aforementioned grounds to deny the petition.[14]

(1) Sedimentation

In its discussion of sedimentation, the CTDEP cited evidence that sediment deposits of 1 millimeter could cause 50 percent mortality in some benthic species while deposits of 2 millimeters could cause 100 percent mortality in the same species. See id. at 51-52 (noting further that juvenile oysters could be adversely affected by "as little as 3 millimeters of sediment"). While applauding Islander East's use of installation methods that would reduce sedimentation, the CTDEP concluded that sedimentation associated with the project would still harm a sufficiently "significant area of both natural habitat and prime shellfishing beds" to preclude certification. Id. at 50-51.

In choosing among conflicting reports of the degree of sedimentation likely to result from installation of the Islander East pipeline, the CTDEP found the study conducted by Roberge Associates "most reliable in terms of predicted amount and extent of sediment dispersion." Id. at 53. That study estimated that a 3-millimeter layer of sediment would be deposited over approximately 35 acres of sea floor stretching 131 feet from the centerline of the pipeline trench. See id. at 53. Almost all of this acreage qualified as town or state shellfish beds. See id. at 55 (indicating that 3-millimeter sedimentation would affect 26.52 acres of Branford shellfish beds and

[14] We discuss these concerns only to provide guidance in the event the parties should renew their discussions about the possibility of installing the proposed pipeline consistent with the requirements of federal and state law.

7.97 acres of state shellfish beds). The Roberge study estimated that dredging would also deposit a 1-millimeter layer of sediment over approximately 70 acres. See Letter from John C. Roberge, Roberge Associates Coastal Engineers, LLC, to John Opie, First Selectman, Town of Branford at 3-4 (Feb. 4, 2004).

In its brief to this court, the CTDEP now concedes that the Roberge study is mathematically flawed, resulting in a significant overstatement of the area affected by sedimentation. The agency reduces its identification of the affected area to 6.2 acres covered by 3 millimeters of sediment and 12.3 acres covered by 1 millimeter of sediment. See Respondent's Br. at 51 n.24. Islander East asserts that this recalculation is itself flawed because it double counts certain acres. See Petitioner's Reply Br. at 23 n.27. We need not resolve this dispute because, even if were to assume the correctness of the CTDEP's recalculation, the agency does not explain how discrete sedimentation exposure in this smaller area will cause more than a temporary loss of either benthic species or use of the waters for shellfishing. Thus, were sedimentation the sole ground for denying certification, we would remand to afford the agency the opportunity to address this question. See, e.g., Li Hua Lin v. United States Dep't of Justice, 453 F.3d 99, 111 (2d Cir. 2006) (remanding based on factual error critical to agency conclusion). We do not do so because, for reasons already discussed, we conclude that the denial of certification is rationally supported by other findings of lost use satisfactorily grounded in record evidence. Cf. National Ass'n of Home Builders v. Defenders of Wildlife, 127 S. Ct. 2518, 2530 (2007) ("'In administrative law, as in federal civil and criminal litigation, there is a harmless error rule.'" (quoting PDK Labs., Inc. v. United States Drug Enforcement Admin., 362 F.3d 786, 799 (D.C. Cir. 2004))).

(2) Drilling Fluid Release

In its initial denial of certification, the CTDEP conclusorily found (1) that the use of horizontal drilling technology at the first step of pipeline installation was inconsistent with state water quality standards because 455 barrels of drilling fluid would be released when the drill exited the sea floor at milepost 10.9; and (2) that unplanned releases of fluid, or "frac-outs," would occur in the course of drilling. In the absence of further findings as to the likelihood of frac-outs and the adverse consequences of fluid releases to shellfish habitat, we held this rationale insufficient to support denial. See Islander East I, 482 F.3d at 100 (noting that "we may not supply a reasoned basis for the agency's action that the agency itself has not given" (quoting State Farm, 463 U.S. at 43)). In its 2006 Denial, the CTDEP addressed both points.

As evidence of the likelihood of frac-outs in the Islander East project, the CTDEP cited reports of such occurrences "in at least half of the [horizontal drilling] projects it ha[d] regulated." 2006 Denial at 61. Further, noting that frac-outs are most likely to occur at substrate transitions, e.g., from a sedimentary to a rocky area, the CTDEP observed that the geological characteristics of the Thimble Islands indicated many such transitions. See id. On this record, we cannot conclude that the agency's identified concern with likely frac-outs on the Islander East project was arbitrary or capricious.

To support its conclusions concerning the adverse effect of drilling fluid on shellfish habitat, the CTDEP pointed to evidence supplied by Michael Ludwig, an employee of the National Marine Fisheries Service. See id. at 57 & App. H. Mindful that drilling fluid is 97 percent fresh water and 3 percent bentonite clay, Ludwig explained that shellfish cannot live in fresh water. When exposed to drilling fluid, they close their shells to "hold [their] breath." Id. In doing so, the shellfish

inevitably pull in some clay, which would lodge in their gills. As they reopen to expel the clay, the shellfish are exposed to fresh water, causing them to close again, trapping in more clay. As the cycle repeats itself, the shellfish, unable to breath, suffocate. See id.

The risk of such suffocation depends, in large part, on drilling fluid remaining fixed in place rather than dispersing. The evidence on this point was conflicting. While certain studies suggested rapid dissipation, see 2006 Denial, App. H at 3-4 (reprinting Larry Gedney, Drilling Mud Poses Little Environmental Hazard, Alaska Science Forum (May 7, 1984) (noting that "after an insubstantial amount of time, currents dissipated the [drilling] fluids to levels that were innocuous")); Garrett Group Ltd., Preliminary Report on the Anticipated Biological Impacts Associated with the Proposed Islander East Pipeline Project at 10 (May 8, 2003) (stating that drilling fluids "rapidly dissipate into any background concentrations"), other evidence indicated that drilling fluid "tends to be resistant to dispersion when placed in saline waters," Email from Michael Ludwig, National Marine Fisheries Service, to Sue Jacobson, CTDEP at 1 (Sept. 29, 2003). The CTDEP chose to rely on Michael Ludwig's opinion and the FEIS prepared for the FERC for the conclusion that, because "'drilling fluids flocculate [lump together] and settle to the bottom,'" 2006 Denial at 57 (quoting FEIS 3-53) (modification in original), "[d]ispersion by dilution of this gel-like mud into the water column is unlikely," id. (citing FEIS 3-54). Where reasonable minds might thus differ on a point, an agency's resolution of competing evidence cannot be deemed arbitrary and capricious. See Universal Camera Corp. v. NLRB, 340 U.S. at 488 (holding that reviewing court may not displace agency's choice between "two fairly conflicting views" of evidence).

Recognizing the risks associated with the release of drilling fluid, Islander East advised the CTDEP of its willingness to develop plans to contain and recover the substance. It submitted a

containment plan offering alternative proposals, deferring its final choice until after a horizontal drilling contractor had been selected. The CTDEP found these proposals to be "vague and largely inadequate." 2006 Denial at 31; see also id. at 58. We cannot review this finding because Islander East has not included its alternative proposals in the appendix on appeal and the CTDEP has not filed a certified administrative record as required by Fed. R. App. P. 17(a). To the extent the CTDEP disagreed with Islander East's proposed definition of a "significant" release of drilling fluid into the Sound, see id. at 57-58, however, we note a concern.

Islander East's proposed threshold for identifying a "significant" release warranting removal action was based on several factors, including, inter alia, (1) "the ability to contain the release within a 200 foot wide corridor centered on the HDD drill path," and (2) whether such deposits "exceed 24 inches in depth." 2006 Denial at 58. Referencing evidence that sedimentation deposits of as little as 1-2 millimeters could adversely affect benthic organisms, the CTDEP concluded that the proposed 24-inch threshold was "too high" to satisfy state water quality standards. Id. The CTDEP does not point to any evidence, however, supporting an analogy between the levels of sedimentation and drilling fluid that would cause a loss of shellfishing use. While we might remand to afford the agency an opportunity to clarify this point, because we have identified other reasons for agency denial of certification that are supported by record evidence, we conclude that no such remand is necessary. Cf. National Ass'n of Home Builders v. Defenders of Wildlife, 127 S. Ct. at 2530.

Islander East points out that although the CTDEP rejected Islander East's proposal to define a significant release by reference to fluid deposits over 24 inches deep, it had approved a nearly identical definition in connection with the Cross Sound Cable Company's monitoring of its horizontal drilling. See CTDEP, Permit No. 200102720-MG, App. B at 6 (Mar. 17, 2002) (including

within "conditions which constitute a significant impact" on water quality "[d]rilling fluid depositional depths . . . exceed[ing] 24 inches at the interface with the containment fence"). In contrast with the CTDEP's adverse experience with aspects of the Iroquois pipeline, which, as we have noted, provided a rational basis for the agency subsequently to reject similar aspects of the Islander East proposal, the CTDEP found no adverse effects arising out of Cross Sound Cable's horizontal drilling to support its rejection of Islander East's 24-inch threshold. Indeed, CTDEP provided Islander East with Cross Sound Cable's monitoring plan, including its definition of "significant," as a reference. See Letter from Charles H. Evans, CTDEP, to Gene Muhlherr, Jr., Islander East at 7 (May 5, 2003) (enclosing redacted copy of Cross Sound Cable monitoring plan and stating "monitoring plan will be required. Please refer to the enclosed sample for reference"). While Islander East may have understood this reference to signal that its proposed monitoring plan should duplicate that of the Cross Sound Cable Company's, in light of the fact that the latter project's horizontal directional drilling would affect only dormant shellfishing beds while Islander East's drilling would affect active beds, we cannot conclude that it was arbitrary or capricious for the CTDEP to conclude that stricter release monitoring was necessary to assure water quality standards in this case.

3. Good Faith

In Islander East I, we cited some evidence raising concern that the CTDEP had pre-determined to deny certification in this case, affording the pipeline proposal only perfunctory review. See 482 F.3d at 105. On its latest petition, Islander East includes in the record several newspaper articles reporting continued opposition in Connecticut to the pipeline, presumably to demonstrate that the CTDEP has again denied it good faith review. It further points to CTDEP actions attempting

to block Islander East from conducting geological surveys as evidence of bad faith. We are not persuaded.

While the survey allegation raises some concern, the actions predate the first denial and, in any event, are not fully developed. Moreover, the surveys relate to a ground for denial not relied on in this decision. See supra at **[36-39]**. On this record, we deem the allegation insufficient to establish bad faith with respect to the 2006 Denial.

While there is no denying the continued strong opposition to the pipeline voiced by some Connecticut residents and officials, where an agency's analysis of a controversial application is detailed and thorough, as is the case with the CTDEP's 2006 Denial, we will not readily conclude that it is infected by bad faith. While the CTDEP might have made more of an effort to resolve seeming discrepancies in or omissions from Islander East's proposal before issuing its challenged denial, its failure to do so does not demonstrate bad faith or an arbitrary and capricious decision. As we made plain in Islander East I, even as we ordered remand in that case, it was "Islander East's burden to demonstrate its entitlement to favorable action on its . . . application." 482 F.3d at 104. Because the CTDEP has now "adequately . . . consider[ed] important aspects of the issue," id., and supported its conclusion that Islander East did not carry this burden with record evidence, Islander East must point to more than continued political opposition for us to find agency bad faith.

In so holding, we express no view as to the wisdom of the challenged denial or of a statutory scheme whereby a single state agency effectively vetoes an energy pipeline that has secured approval from a host of other federal and state agencies. It is, after all, Congress that has "provide[d] states with the option of being deputized regulators" of the Clean Water Act. Islander East I, 482 F.3d at 90. If Congress were to agree with Islander East that the public interests furthered by its proposed

pipeline outweigh Connecticut's water quality concerns, Congress could consider whether to dissolve the federal-state partnership it created. Until such time, however, this court is charged with reviewing the state agency's denial only to ensure that it is not arbitrary or capricious. Because we conclude that it is not, we hereby deny the petition for review.

## III. Conclusion

To summarize, Islander East's proposed installation of a natural gas pipeline from Connecticut to New York across Long Island Sound must comport with various statutes, including the Clean Water Act. The Clean Water Act requires Islander East to procure from the CTDEP a certification that the proposed pipeline will comply with state water quality standards. Record evidence supports the CTDEP's finding that various techniques to be employed by Islander East in installing the proposed pipeline would violate state water quality standards by eliminating a significant area of nearshore waters from their existing and designated use of shellfishing. On such a record, we cannot conclude that the CTDEP's decision to deny Islander East a certificate of compliance was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Islander East's petition for review is DENIED.

JANE A. RESTANI, *Judge*, dissenting:

I respectfully dissent from the majority's conclusion that Connecticut Department of Environmental Protection's ("CTDEP") second denial of certification for Islander East's proposed natural gas pipeline plan, see CTDEP, Water Quality Certification Application No. 200300937-SJ, Islander East Pipeline Co., LLC (Dec. 19, 2006) ("2006 Denial"), was supported by reasoned explanation based on record evidence and was not arbitrary or capricious. In particular, I note the majority's acknowledgment that CTDEP failed to explain properly its dismissal of an expert report on sedimentation – especially in light of CTDEP's admission that the report it relied upon was mathematically flawed and significantly overstated the affected area – and that CTDEP improperly rejected Islander East's proposed drilling plan, despite the fact that CTDEP approved and provided for reference a nearly identical plan from a prior project. I disagree with the majority's characterization of these errors as harmless, and find that there is not reliable evidence to otherwise support CTDEP's decision.

## I. Review of the 2006 Denial

The majority correctly states that the issue is whether CTDEP was arbitrary or capricious in finding that the proposed pipeline would result in damage inconsistent with the Connecticut Water Quality Standards. CTDEP, Water Quality Standards (effective Dec. 17, 2002) ("CTWQS").

Under CTWQS surface water quality standard number two, "[e]xisting and designated uses . . . and the water necessary for their protection [are] to be maintained and protected." CTWQS at 1. As part of its antidegredation policy, the EPA requires states to publish Water Quality Standards ("WQS") that maintain a "level of water quality necessary to protect . . . existing uses." 40 C.F.R. § 131.12(a)(1). The state has the responsibility to apply any quantitative criteria provided in the

WQS, as well as descriptive characteristics. PUD No. 1 of Jefferson County v. Wash. Dep't of Ecology, 511 U.S. 700, 714–15 (1994). The Clean Water Act envisions that a state's WQS may list non-quantitative criteria, such as use designations, which "must be translated into specific limitations for individual projects." Id. at 716. Thus, while a state is free to impose narrative or open-ended criteria in its WQS, the use of such criteria does not free the state from its obligation to impose a specific limitation within the context of a particular project proposal. The agency's central task is to give open-ended criteria meaning for a particular proposed project, providing parties with the necessary guidance to participate in the regulatory process.

In the 2006 Denial, however, CTDEP declined to quantify what specific limitations would have to be met to find the proposed project consistent with the CTWQS. Rather than stating minimum thresholds, CTDEP pointed to a series of likely or potential environmental impacts that it contends would violate the CTWQS. As a court, we are powerless to set the specific limitations on water quality impacts that would be inconsistent with the CTWQS. The majority correctly notes that such a determination depends on scientific evidence and policy judgments best left to the expert consideration of an agency. See Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 48 (1983). Although it is within the agency's authority to determine a level at which such harms are unacceptable, it must be reemphasized that "an agency's action must be upheld, if at all, on the basis articulated by the agency itself." Islander East Pipeline Co. v. Conn. Dep't of Envtl. Prot., 482 F.3d 79, 95 (2d Cir. 2006) ("Islander East I") (quotations omitted). Our task is to hold CTDEP to its own reasoning and judgments.

## II. Review of CTDEP's Conclusions

### A. CTDEP's Claims Regarding Sedimentation in the Dredge Section

CTDEP's treatment of potential sedimentation impacts in the dredge section of the project presents the most serious concern, particularly because sedimentation is cited as grounds for denial in two of CTDEP's four conclusions.[1] In finding that "a significant area of both natural habitat and prime shellfishing beds would be exposed to sedimentation exceeding normal levels and for extended periods of time," CTDEP relied heavily on expert studies on the record, finding the Roberge Report, (John C. Roberge, P.E., LLC, Potential Sedimentation Impacts Which Could Result from Dredging (2003) ("Roberge Report")), "to be the most reliable in terms of predicted amount and extent of sediment dispersion," (2006 Denial at 53), and dismissing the ASA Report, (Applied Science Associates, Inc., Results of SSFATE Model Simulations, Nearshore Connecticut, Long Island Sound (2003) ("ASA Report")), because it relied on tidal currents alone. (2006 Denial at 52–53.) On the basis of the Roberge Report, CTDEP provided a measurement of the area that would be impacted by sedimentation.

CTDEP now admits that the Roberge Report's predictions are incorrect, overstating the extent of sediment dispersion by more than a factor of four. According to Respondents' brief, the Roberge Report should have stated that the area of sediment dispersion would be 18.5 acres, not 86. (Compare 2006 Denial at 53, with Resp'ts' Br. 51 n.24.) This is far closer to the amount predicted in the ASA Report, which estimated 14 acres of sediment dispersion. (See id.; ASA Report at 4.)

Despite the fact that CTDEP should have considered a significantly reduced estimate of the

[1]CTDEP cites an "unacceptable impact to benthic habitats . . . indirectly through sedimentation," and states that the project will cause the "biological integrity" of the area to be "unacceptably reduced and changed as a result of the change in benthic substrate, including sedimentation." (2006 Denial at 80.)

sedimented area, Respondents now contend that "[t]he error is one of degree," and that any area of sedimentation that interferes with shellfish harvesting is inconsistent with the CTWQS. (Resp'ts' Br. 52.) This is a surprising claim. CTDEP's reasoning refers to a "significant area" of sedimentation, specifically, 86.23 acres. (2006 Denial at 50–51, 55.) Further, if any amount of sedimentation would be inconsistent with the CTWQS, it would not have been necessary for CTDEP to go to such lengths to dismiss the ASA Report's conclusions. More importantly, there is no indication in the record that CTDEP actually considered whether 18.5 acres of sedimentation would be a significant impact resulting in a partial loss of an existing use. It is not the role of the court to make such a determination on CTDEP's behalf. See Ace Motor Freight, Inc. v. ICC, 557 F.2d 859, 864 (D.C. Cir. 1977). CTDEP's admittedly erroneous finding of 86 acres remains the only finding before us, along with Respondents' assurances that the actual amount of sedimentation does not matter. As we stated in Islander East I, we "'may not accept appellate counsel's post hoc rationalizations for agency action. It is well established that an agency's action must be upheld, if at all, on the basis articulated by the agency itself.'" 482 F.3d at 95 (quoting State Farm, 463 U.S. at 50).

CTDEP's strong reliance on the erroneous sedimentation findings as a basis for denial seems far from harmless error, contrary to the assertion of the majority. Because CTDEP did not consider the effects of sedimentation under the drastically reduced calculations or adequately explain its rejection of the ASA Report in light of its similarity to the new calculations, the 2006 Denial's conclusions with respect to the effects of sedimentation in the dredged section were arbitrary and capricious.

**B. CTDEP's Conclusions Regarding the Use of Backfill**

1. Engineered Backfill

The 2006 Denial also expressed concern over the placement of engineered backfill into the dredge trench, finding that there were significant discrepancies in the record regarding the proposed composition of the backfill, and that even if shellfish could return to a rocky backfill, shellfish predators – particularly starfish – would also colonize the area. (2006 Denial at 37, 66–68.) With respect to the backfill composition, the 2006 Denial specifically noted that an expert report called for the use of "'[r]ock or gravel of less than 4 inches in diameter,'" (id. at 37 (quoting TRC Environmental Corporation, Evaluation of Benthic Impacts Associated with Islander East's Modified Offshore Construction Techniques at 6 (2003) ("2003 TRC Report"))), and that Islander East's own consultants recommended the use of backfill containing "mostly gravel, no more than 2 inches in diameter and coarse sand," (id. (citing Haley & Aldrich, Inc., Report on Engineered Backfill Study at 4 (2003).) Because the nature or grain size of the materials were uncertain, CTDEP concluded that it could not speculate as to what fauna might be able to inhabit the area. (2006 Denial at 38.)

The record demonstrates that the 2003 TRC Report was issued before Islander East had finalized its backfill proposal, and therefore does not contradict the later descriptions of the intended backfill as a layer of rock covered by a layer of sand. (See 2003 TRC Report (issued February 17, 2003).) Islander East provided a completed backfill plan on April 15, 2003, and subsequently referenced the use of two layers in the backfill. (See Multi-Agency Meeting Notes (Apr. 15, 2003) ("April Minutes").) The 2006 Denial, however, continued to refer to concerns related to an all-rock backfill. (See 2006 Denial at 70.) Similarly, the 2006 Denial repeatedly cited concerns that predators would also colonize an area filled with a rocky backfill. (Id. at 66, 68.) Although the

record shows that the use of a two-layer sandy backfill would prevent predators from undermining shellfish colonization, (see April Minutes at 1), CTDEP failed to explain why it did not consider the evidence indicating negotiated changes in the composition of Islander East's proposed backfill, and the potential effects thereof.

2. Proposed Use of Some Native Spoil

In the 2006 Denial, CTDEP found that Islander East's "suggestions regarding disposal options . . . appear to retreat from the conclusion reached during the agency technical discussions" by seeking to use some native spoil in the backfill area. (2006 Denial at 37.) CTDEP expressed concern that the proposal to return excess spoil to the HDD exit area was contradicted by Islander East's prior statements to CTDEP, would be "inefficient and slow," and would "increase sedimentation." (2006 Denial at 38 (quotations omitted).)

CTDEP failed to acknowledge, however, that plans to use some native spoil to fill the HDD exit pit had existed since the beginning of the process. (See Project Meeting Minutes at 2 (Mar. 4, 2003) (stating that Islander East intended to dispose of a maximum of 25,000 cubic yards of dredged sediment, and that it was "possible to return spoil to the HDD exit hole or to use spoil as a top dressing material to the engineered backfill"); April Minutes at 1 (stating that spoil could be placed over rock laid in the HDD exit pit).) The fact that Islander East was prepared to use a limited amount of dredged material is therefore not at odds with its contention that using dredged sediment to the exclusion of engineered backfill would not be practical. Thus, in addition to its failure to consider negotiated changes in the composition of engineered backfill, CTDEP neglected to consider fully record evidence of the proposed options for use of some native spoil in the backfill area.

**C. CTDEP's Claims Regarding the Plow Section**

The 2006 Denial found that anchor strikes, cable sweeps, and plow impacts resulting from the use of a subsea plow after mile 12 would disrupt the sea floor, rendering it uneven. (2006 Denial at 47.) In support of its conclusion that disturbed sediments would settle into surface irregularities, CTDEP referenced two projects that have reportedly suffered long-term scarring: the Iroquois Pipeline between Connecticut and Long Island and a series of electric cables installed on the floor of the Hudson River. (Id. at 43, 47–48.) CTDEP failed to address, however, record evidence regarding the installation of the Cross-Sound Cable, showing that it resulted in little or no impact on shellfish habitat. (See Task Force on Long Island Sound, Comprehensive Assessment and Report: Environmental Resources and Energy Infrastructure of Long Island Sound at 78–79 (2003).) Although the Cross-Sound Cable is a comparable utility project in Long Island Sound, installed more recently than either the Hudson River cables or the Iroquois Pipeline, CTDEP did not explain why it discounted record evidence that the plowing resulted in little or no impact, or why the Cross-Sound Cable's trench construction was distinguishable from Islander East's proposal.[2] It is not our responsibility to search the record for such distinctions. As we noted in Islander East I, "it was Islander East's burden to demonstrate its entitlement to favorable action on its WQC application, [but] it was CTDEP's burden adequately to consider important aspects of the issue." 482 F.3d at 104.

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[2]The majority finds a distinction on the grounds that, "in contrast to this case, where the CTDEP found that Islander East's pipeline project would cause a long-term loss of shellfishing beds in existing or foreseeable future use, the Cross Sound Cable project implicated only dormant beds that were expected to remain so." Maj. Op., ante at 30. Under the CTWQS, however, both "[e]xisting and designated uses" are protected. CTWQS 1. In addition, it is not clear from the record that the potentially affected areas in this case had been recently used for shellfish cultivation, nor is it the responsibility of the court to draw such distinctions from the evidence where the agency neglected to do so.

**D. CTDEP's Conclusion Regarding Islander East's Proposed Use of HDD**

Although CTDEP found that shellfish in the drilling exit pit, or in an area affected by a frac-out, would die of exposure to drill fluid, the 2006 Denial did not cite record evidence indicating that wave energy might disperse the fluid, or address other record evidence suggesting that dispersion does occur. Although there is evidence on the record indicating that releases of drill fluid would likely be "small and isolated, . . . or rapidly dissipate," (Garrett Group, Ltd., Preliminary Report on the Anticipated Biological Impacts Associated with the Proposed Islander East Pipeline Project, through the Nearshore Area of Long Island Sound – Branford, CT at 10 (May 8, 2003)), the 2006 Denial does not explain why it assumed that drill fluid would not disperse before the suffocation of the shellfish populations not removed prior to construction. While the majority indicated that reasonable minds might differ on the implications of the evidence on the record, it is not the responsibility of the court to comb the evidence to derive such implications where the agency neglected to do so.

In addition, even assuming that drill fluid would not disperse quickly enough to avoid shellfish suffocation, CTDEP dismissed all of Islander East's proposed mitigation and remediation plans. (See, e.g., 2006 Denial at 31, 58.) CTDEP refused to consider Islander East's containment plan and claimed that Islander East's proposed monitoring and operations plan failed to include an appropriate definition of a "significant release" of drill fluid. As noted by the majority, however, CTDEP approved a nearly identical definition used in a monitoring plan provided by the Cross-Sound Cable Company. CTDEP also failed to identify reasons why the use of alternative HDD technology was acceptable in the Cross-Sound Project, but not here. It was CTDEP's responsibility to identify reasons to justify its inconsistent treatment of the plans, and it failed to do

so.[3]

**E. CTDEP's Finding that the Anchor Corridor Would Include the Dredge Section**

The 2006 Denial also concluded that the project would create an anchor corridor of 4,045 acres, approximately 1,120 of which are in existing and potential shellfish lease areas, an acreage characterized by CTDEP as "unacceptably large." (2006 Denial at 41, 70, 80.) As noted by the majority, CTDEP erroneously included in this calculation 322.4 acres in nearshore waters that were incorrectly assumed to be subject to anchor strikes and cable sweeps, and failed to address Islander East's proposed alternative means of installing the pipeline in the dredged area.

In its modified proposal, Islander East provided that a stationary barge could be used to assemble the necessary pipeline between mileposts 10.9 and 12 instead of laying the pipe from a barge directly into the dredged trench. (See Islander East Pipeline Project, Permit Application for: 401 Water Quality Certificate, Marine Pipeline Installation Methodology 1, 9.) Following this method, "a winch mounted on a construction vessel at the HDD exit hole will be used to pull two strings of pipe, each approximately one mile long, from the laybarge to near the exit hole." (Id. at 1.) Thus, "[t]he HDD pipe string [could] be installed by the laybarge either by standard operations or by remaining stationary and [using] a winch mounted on a separate vessel . . . to pull the pipeline off the laybarge to the HDD exit hole." (Id. at 9.) CTDEP did not address the possibility of using this method to install the pipe, and therefore overestimated the impact by over twenty-five percent.[4]

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[3]Also as noted by the majority, these conclusions are particularly troubling because the Cross-Sound monitoring plan was provided as a reference to Islander East.

[4]CTDEP calculated that 4,045 acres would fall within the anchor corridor created by the barges, but that only 1,120 acres of the corridor support an existing or designated use of shellfishing. (See 2006 Denial at 70.) CTDEP found that the use of this area would be lost in its entirety due to anchor strikes and cable sweeps. (Id.) Subtracting the 322.4 acres incorrectly assumed to be affected

CTDEP's conclusions on the basis of these calculations[5] are therefore unsupported.

**F. CTDEP's Failure to Address Mitigation Measures**

Finally, CTDEP should have investigated the possibility of imposing conditions requiring the remediation of impacted areas in the dredged and plowed sections. Record evidence makes repeated references to the use of remediation plans as conditions to certificate approval. (See, e.g., Conn. Siting Council, Cross-Sound Cable Co., LLC, Application for a Certificate of Envtl. Compatibility and Public Need, Findings of Fact at 22 (Jan. 3, 2002).) The record also contains evidence indicating that proper remediation measures might encourage shellfishing interests to harvest within the anchor corridor. (See, e.g., Williams Test., Hr'g Tr. 98:6–12, 19–20 (stating that fishing around anchor holes would be possible with buoys and "a buffer zone near the holes").) Other mitigation measures include notification of impending construction, removal of shellfish from the work area, reseeding of beds in the work area at Islander East's expense, and provision of pipeline surveys. (See Islander East Pipeline Project, Response to Request for Additional Information, Impacts Analysis Report at 36 (2003).) Although its failure to address possible mitigation measures in itself does not render CTDEP's conclusions arbitrary and capricious, based on this record, CTDEP should have addressed the possibility of conditioning approval on remediation of anchor strikes and topographical irregularities, and the possibility of providing surveys to shellfishing interests that would allow for renewed harvesting within the anchor corridor.

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leaves only 797.6 acres of negatively impacted shellfish habitat. We do not have CTDEP's views on that impact.

[5]These figures are, according to Respondents, "[t]he only specific acreage impact mentioned in [CTDEP's] conclusion as a basis for denial." (Resp'ts' Br. 52.)

## III. Conclusion

While there may have been a reasoned approach that CTDEP could have taken to justify its conclusion based on the evidence available on the record, CTDEP's inconsistent treatment of the evidence continues to suggest that its denial of certification for the proposed pipeline may have been a foregone conclusion. As we indicated in Islander East I, "[a]ny effort by the CTDEP to pursue a 'strategy' to justify a foreordained opposition to the pipeline would be incompatible with a reviewing agency's mandate to use its expertise to come to a reasoned decision supported by substantial evidence." 482 F.3d at 105. The fact that the agency's decision would have been the same regardless of the errors on the record is insufficient to show that the 2006 Denial was not arbitrary and capricious, or that the errors noted by the majority were harmless.

In addition, the majority gives significant credit to CTDEP for its inclusion of more "voluminous" information in the 2006 Denial, stating that the panel reached its decision in Islander East I "largely because of the paucity of findings made by the CTDEP" in the original determination. Maj. Op., ante at 18. Our review is not relative with respect to the CTDEP's prior findings reviewed in Islander East I, and the majority's determination that CTDEP issued more detailed analysis in the 2006 Denial does not indicate that the agency's conclusion is not still arbitrary and capricious. Although a lack of record evidence may certainly indicate a lack of support for an agency's findings, the converse is not necessarily true. It is insufficient for an agency to provide "voluminous" information in support of its conclusion where such information is erroneous, dismissed by the agency without adequate explanation, or fails to fully explain the agency's decision. I do not wish to provide such an incentive here. While the 2006 Denial provides a lengthy explanation of the reasoning that led CTDEP to deny Islander East's WQC, the inconsistencies in the reasoning,

CTDEP's failure to consider relevant evidence on the record, and the manifest errors in the evidence relied upon by CTDEP, leave me with no choice but to conclude that the 2006 Denial is arbitrary and capricious.