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124 FERC ¶ 61,225
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Joseph T. Kelliher, Chairman;
Suedeen G. Kelly, Marc Spitzer,
Philip D. Moeller, and Jon Wellinghoff.

Broadwater Energy LLC — Docket No. CP06-54-001

Broadwater Pipeline LLC — Docket Nos. CP06-55-001
CP06-56-001

ORDER DENYING REHEARING

(Issued September 4, 2008)

1. On March 20, 2008, the Commission issued an order in this proceeding authorizing Broadwater Energy LLC (Broadwater Energy) under section 3 of the Natural Gas Act (NGA) to site, construct, and operate a liquefied natural gas (LNG) import terminal in Long Island Sound.[1] The Commission also issued a certificate of public convenience and necessity to Broadwater Pipeline LLC (Broadwater Pipeline), an affiliate of Broadwater Energy, under section 7 of the NGA to construct, own, and operate a 21.7-mile long pipeline lateral from the outlet of the LNG terminal to a subsea interconnection with the Iroquois Gas Transmission System (Iroquois).[2] Broadwater's authorizations are subject to over 80 environmental conditions. The project, referred to as the Broadwater Project, has a daily design capacity of 1.0 billion cubic feet per day (Bcf/d) of natural gas and a peak winter deliverability of 1.25 Bcf/d.

2. The Attorney General of Connecticut (Attorney General), the Connecticut Commissioner of Environmental Protection (Connecticut Commissioner), Save the Sound, a Program of Connecticut Fund for the Environment (Save the Sound), the Towns of Riverhead and Southold in the State of New York (collectively, Riverhead), the County of Suffolk in the State of New York (Suffolk), and the Towns of Huntington, Brookhaven, and East Hampton in the State of New York (collectively, New York

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[1] *Broadwater Energy LLC*, 122 FERC ¶ 61,255 (2008) (March 20 Order).

[2] Broadwater Energy and Broadwater Pipeline will be collectively referred to herein as Broadwater.

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Towns) filed timely requests for rehearing of the March 20 Order.[3] Issues raised include the demarcation point between Broadwater's section 3 and section 7 facilities and numerous issues related to the adequacy of the Commission's environmental analysis. The Commission will deny rehearing of the March 20 Order as discussed below.

I. Background

3. Broadwater Energy proposes to site, construct, and operate an LNG receiving terminal under section 3 of the NGA that will consist of a floating storage and regasification unit (FSRU) that is approximately 1,215 feet long and 200 feet wide and that rises approximately 80 feet above the water line to the trunk deck. The proposed LNG import terminal will be located in Long Island Sound, in a water depth of approximately 90 feet, approximately 9 miles off the coast of Riverhead, Suffolk County, New York, in New York State waters. The nearest onshore point in Connecticut is approximately 10.2 miles from the proposed terminal location. A yoke mooring system (YMS) that will be incorporated into the bow section of the FSRU will moor the FSRU to a fixed tower (YMS tower) and allow the FSRU to pivot or weathervane around the tower. Broadwater Energy anticipates that, based on the expected throughput of the project and the capacity of the LNG carriers, two or three carriers per week will arrive at the FSRU, with an anticipated average of 118 carriers per year.

4. Broadwater Pipeline proposes to construct, own, and operate a 21.7-mile long, 30-inch-diameter subsea pipeline and related facilities under section 7 of the NGA that would deliver revaporized natural gas from the FSRU to an offshore connection with the existing Iroquois pipeline that extends across Long Island Sound. Broadwater Pipeline states that the pipeline facilities will be connected to the FSRU through a 30-inch-diameter pipeline riser within the YMS tower that will be secured to the seafloor by four legs. The pipeline riser will interconnect with the subsea pipeline at the sea floor.

5. The March 20 Order granted the requested authorizations subject to conditions. While recognizing that there had been considerable opposition to the project, the Commission found that with the adoption of the proposed mitigation measures contained in the final Environmental Impact Statement (EIS) prepared for the project, construction and operation of the Broadwater Project would result in only limited adverse environmental impacts. The Commission also concluded that the project is needed to meet the projected energy needs for the New York City, Long Island, and Connecticut markets.

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[3] The Attorney General and the Connecticut Commissioner also filed timely supplemental requests for rehearing.

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II. Procedural Issues

A. Late Interventions and Requests for Rehearing

6. The New York State Department of State (NYSDOS)[4] and the New York State Department of Environmental Conservation (NYSDEC)[5] filed motions for late intervention together with requests for rehearing. The NYSDOS maintains that good cause exists for it to intervene at this time because it was not until the Commission issued its March 20 Order that it had cause to intervene. Specifically, the NYSDOS claims that the March 20 Order is unlawful because it violated the CZMA and harmed New York State by authorizing the Broadwater Project without considering the NYSDOS consistency analysis.[6] NYSDOS states that its interests are not adequately represented by any other party to the proceeding because only it can determine whether the project is consistent with the New York CMP. It also claims that its participation as a cooperating agency for the purposes of developing a final EIS under the National Environmental Policy Act (NEPA)[7] does not bar its request here because the NEPA process is over and its intervention request is not based on the NEPA process but its own consistency determination. The NYSDOS also asserts that no disruption to the proceeding and no prejudice or additional burdens to the existing parties would result from granting the late intervention.

7. The NYSDEC claims it has good cause to intervene out of time because the March 20 Order unlawfully failed to incorporate a water quality certification. The NYSDEC maintains that its interests are not adequately represented by other parties in the proceeding because it is responsible for determining whether the project meets the state's

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[4] The NYSDOS states that it has the responsibility under the Coastal Zone Management Act (CZMA), 16 U.S.C. §§ 1451-1464 (2000), to ensure proposed federal agency activities in Long Island Sound coastal zones are consistent with New York's federally-approved Long Island Sound Coastal Management Program (New York CMP).

[5] The NYSDEC states it is charged by law to consider and, upon proper showing, to issue water quality certifications for facilities seeking federal authorizations involving discharges to navigable waters, pursuant to section 401 of the Clean Water Act (CWA), 33 U.S.C. § 1341 (2000).

[6] The NYSDOS' consistency determination was issued on April 10, 2008, and found that the project was inconsistent with the New York CMP.

[7] 42 U.S.C. §§ 4321-4347 (2000).

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water quality standards. It also asserts that granting it intervenor status would not disrupt the proceeding, prejudice existing parties, or place additional burdens on existing parties.

8. Broadwater filed an answer opposing the late motions to intervene and requests for rehearing. Broadwater states that the Commission has a long-standing policy against permitting agencies to intervene in the proceedings in which they have acted as cooperating agencies and as a result, the NYSDOS is barred from becoming a party. Broadwater also claims that neither the NYSDOS nor the NYSDEC has adequately supported its request to intervene now that the Commission has issued its decisional order in the proceeding. In the event the Commission accepts their pleadings as motions for reconsideration, Broadwater claims that their arguments against conditional certificates are unsupported.

9. The NYSDOS filed a response to Broadwater's answer, Broadwater filed an answer to the NYSDOS, and the NYSDOS filed a further response to Broadwater.

Commission Response

10. Since neither the NYSDOS nor the NYSDEC has established any need for an exception to Rule 213 of the Commission's Rules of Practice and Procedure which prohibits answers to answers,[8] the NYSDOS' answer to Broadwater, Broadwater's answer to the NYSDOS, and the NYSDOS' further response to Broadwater will not be accepted.

11. We deny the requests for late intervention. It is well established that Commission policy prevents an agency that has served as a cooperating agency from subsequently intervening in a proceeding.[9] The basis for this policy is that cooperating agency staff will necessarily engage in off-the-record communications with the Commission staff concerning the merits of issues in the proceeding, so that, if the agency is allowed to become an intervenor, it will then have access to information that is not available to other parties, in violation of the prohibition in the Administrative Procedures Act (APA) and

[8] 18 C.F.R. § 385.213(a)(2) (2008).

[9] *See, e.g.*, Order No. 2002, FERC Stats. & Regs. ¶ 31,150, at P 295-300 (2003), *reh'g denied*, Order No. 2002-A, 106 FERC ¶ 61,037, at P 29 (2004); *Arizona Public Service Co.*, 94 FERC ¶ 61,076 (2001).

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our rule against ex parte communications. Thus, having chosen to participate in this proceeding as a cooperating agency, the NYSDOS is barred from becoming a party.[10]

12. We also find that the NYSDOS and the NYSDEC have not shown good cause to intervene at this late stage of the proceeding. In ruling on a motion to intervene out-of-time, the Commission applies the criteria set forth in Rule 214(d),[11] and considers, among other things, whether the movant had good cause for failing to file the motion within the time prescribed, whether any disruption to the proceeding might result from permitting the intervention, and whether any prejudice to or additional burdens upon the existing parties might result from permitting the intervention. When late intervention is sought after the issuance of a Commission order, the prejudice to other parties and burden upon the Commission of granting late intervention may be substantial. Thus, movants bear a higher burden to demonstrate good cause for the granting of such late intervention.[12] Here, neither agency has met that higher burden.

13. The NYSDOS and the NYSDEC failed to adequately explain why they waited until after the Commission issued the March 20 Order to intervene even though they had notice of the application and proceeding.[13] The nature of an administrative proceeding allows for the risk that certain interests may be harmed by a final agency decision. Those entities with interests they intend to protect are not entitled to wait until the outcome of a proceeding and then file a motion to intervene once they discover the outcome conflicts

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[10] Both the NYSDOS and NYSDEC were invited to be cooperating agencies. In agreeing to be a cooperating agency, the NYSDOS stated "[t]he participation of the Department of State as a cooperating agency shall not be seen as precluding any other New York State agency from becoming an intervenor in the project proposal review." NYSDOS's August 22, 2005 Response to the Commission's March 1, 2005 Letter. On the other hand, in electing not to serve as a cooperating agency, the NYSDEC noted that it "regularly intervenes in the Commission's proceedings as a matter of course, taking an active party role on New York State's behalf . . . ." NYSDEC's August 22, 2005 Response to the Commission's March 1, 2005 Letter.

[11] 18 C.F.R. § 385.214(d) (2008).

[12] *See, e.g., Islander East Pipeline Co.*, 102 FERC ¶ 61,054, at P 17-19 (2003); *Midwest Independent Transmission System Operator, Inc.*, 102 FERC ¶ 61,250, at P 7 (2003).

[13] Both agencies participated in the proceeding, the NYSDOS as a cooperating agency and the NYSDEC by submitting comments on environmental issues.

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with their interests. Here, the NYSDOS and the NYSDEC, both state resource agencies that had knowledge of the proceeding, allowed over two years to pass, from the date Broadwater filed its application on January 30, 2006, until they filed their motions to intervene, before they sought to become a party to the proceeding. In these circumstances, we find that they have failed to show good cause to intervene at this late stage of the proceeding. Accordingly, we deny their requests for late intervention.

14. Since neither the NYSDOS nor the NYSDEC are parties to this proceeding, as defined by Rule 102,[14] they cannot request rehearing.[15] However, we will address their concerns as motions for reconsideration.

B. Motion to Dismiss Requests for Rehearing and Leave to Answer and Answer to Requests for Rehearing

15. Broadwater filed a motion requesting dismissal of the requests for rehearing filed by the Attorney General, the Connecticut Commissioner, the New York Towns, and Save the Sound asserting that these parties failed to conform their requests to the requirements of Rule 713(c) of the Commission's Rules of Practice and Procedure.[16] According to Broadwater, Rule 713(c) requires that requests for rehearing include a separate section entitled "Statement of Issues," listing each issue in a separately enumerated paragraph that includes Commission and court precedent on which the parties are relying.[17] Thus, Broadwater requests that the Commission dismiss these pleadings because they are procedurally deficient. Broadwater also filed leave to file answer and answer to the requests for rehearing asserting that its answer will assist the Commission in its disposition of the rehearing requests.

16. The Attorney General, the Connecticut Commissioner, the New York Towns, Save the Sound, Riverhead, and Suffolk filed answers opposing Broadwater's motion to dismiss the rehearing requests and Broadwater's request for leave to answer and answer to the rehearing requests.

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[14] 18 C.F.R. § 385.102 (2008).

[15] *See* 18 C.F.R. § 385.713(b) (2008).

[16] 18 C.F.R. § 385.713(c) (2008).

[17] 18 C.F.R. § 385.713(c)(2) (2008).

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Commission Response

17. The purpose of Rule 713(c)(2) is to ensure that issues are properly identified in order to prevent wasteful litigation.[18] Although the Attorney General, Connecticut Commissioner, New York Towns, and Save the Sound all failed to include a separate section entitled "Statement of Issues" in their requests for rehearing, they did include a separate section entitled either "Specification of Grounds" or "Specification of Errors" which lists each issue raised in separately enumerated paragraphs. Thus, we find that their rehearing requests sufficiently comply with Rule 713. Therefore, we deny Broadwater's motion to dismiss the rehearing requests.

18. Answers to requests for rehearing are prohibited under Rule 713(d)(1) of the Commission's Rules of Practice and Procedure[19] and Broadwater has not established any need for an exception to this rule. Accordingly, we reject Broadwater's answer to the requests for rehearing.

C. Request for Evidentiary Hearing

19. The March 20 Order denied several parties' requests that the Commission hold an evidentiary hearing. In its rehearing petition, Suffolk asserts that the Commission's failure to hold an evidentiary hearing throughout this proceeding violates its requirement to hold a full and fair evaluation of an application and denies the intervenors their due process rights.

Commission Response

20. We disagree. It is well settled that trial-type evidentiary hearings are required only where there are material issues of fact that cannot be resolved on the basis of the written record.[20] As explained in the March 20 Order, all interested parties have been afforded a full and complete opportunity to present their views to the Commission through written submissions.[21] In its rehearing petition, Suffolk fails to specify any issue that cannot be

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[18] *See Revision of Rules of Practice and Procedure Regarding Issue Identification*, Order No. 663-A, FERC Stats. & Regs. ¶ 31,211 (2006).

[19] 18 C.F.R. § 385.713(d)(1) (2008).

[20] *See, e.g., Southern Union Gas Co. v. FERC*, 840 F.2d 964, 970 (D.C. Cir. 1988); *Cerro Wire & Cable Co. v. FERC*, 677 F.2d 124 (D.C. Cir. 1982); *Citizens for Allegan County, Inc. v. FPC*, 414 F.2d. 1125, 1128 (D.C. Cir. 1969).

[21] March 20 Order at P 18.

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resolved on the basis of the present record. Therefore, we affirm our finding in the March 20 Order that there is no material issue of fact regarding any disputed issue that we cannot resolve on the basis of the written record in this proceeding.

III. Discussion

A. Point of Demarcation between the NGA Section 3 Import Facilities and the NGA Section 7 Interstate Pipeline

21. The March 20 Order determined that the demarcation point between Broadwater's proposed section 3 and section 7 facilities is the manifold deck (located on the YMS tower) where the 30-inch-diameter pipeline riser commences.[22] The Commission reasoned that the pipeline riser is the same diameter as the subsea pipeline and is part of a fixed-continuous pipeline that transports gas from the terminal to the interconnection with Iroquois in interstate commerce. The Commission also noted that the YMS tower supports the pipeline riser and is configured to allow pipeline maintenance activities to occur (e.g., pig launching facilities are provided on the YMS tower). We found that commencing section 7 regulation at the manifold deck where gas enters the continuous 30-inch pipeline appropriately distinguishes foreign from interstate commerce under the NGA.

22. Several parties contest the Commission's determination that the physical point dividing the NGA sections 3 and 7 facilities is the manifold deck of the YMS tower. They maintain that the order does not articulate a reasoned explanation for the demarcation, thereby making its determination arbitrary and capricious. Riverhead maintains that the definition of LNG terminal in NGA section 2(11) and Commission policy dictate that the entire YMS is an LNG terminal facility in foreign commerce, not just the top half of it. It argues that the YMS is primarily a mooring structure that is a critical component of the LNG terminal and its function as supporting the 30-inch pipe is only secondary.

23. To further support its argument that the entire YMS is part of the LNG terminal, Riverhead cites Broadwater's application which states that the "main components of the FSRU are . . . (4) the Yoke Mooring System . . . ."[23] and Broadwater's statement that "the Broadwater pipeline is essentially a tailgate facility necessary to connect the offshore

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[22] *Id.* P 27-28.

[23] *Citing* Broadwater Energy's Application at 9.

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FSRU to the . . . interstate pipeline grid . . . ."[24] Riverhead concludes that Broadwater's applications and Environmental Conditions Nos. 80-85 of the March 20 Order show that the YMS is an integral component of the FSRU, essential to the FSRU's safe anchorage and operation. Therefore, they claim that the point at which the gas exits the leg of the YMS and enters the pipeline on the seabed is the earliest downstream point at which the imported gas exits foreign commerce.[25] Riverhead also asserts that the Commission cannot lawfully regulate the top half of the YMS under NGA section 3 and the bottom half of the YMS under NGA section 7 because LNG import terminals are facilities in foreign commerce that can properly be authorized under NGA section 3, but cannot concurrently be subject to section 7.[26]

24. Suffolk and Save the Sound contend that there is no reason why the Commission declared that the entire YMS should be part of interstate commerce. Suffolk asserts that the more logical conclusion is that the pipeline riser and manifold deck are discrete components of the pipeline since their function is to facilitate transmission of gas from the FSRU to the subsea pipeline, while the YMS itself is an inextricable component of the FSRU because it anchors the FSRU to the seafloor. Similarly, Save the Sound asserts that section 7 applies to pipeline or storage facilities which the YMS is not. Therefore, Suffolk and Save the Sound conclude that the YMS is used to receive and store LNG and is part of the LNG terminal as defined in section 2 of the NGA.

25. By concluding that the YMS is subject of interstate commerce under section 7 of the NGA, the parties assert that the Commission improperly granted federal eminent domain authority to Broadwater.

Commission Response

26. Under NGA section 7, the Commission has jurisdiction over the transportation or sale of natural gas in interstate commerce and the construction, acquisition, operation, and abandonment of facilities to transport natural gas in interstate commerce. Under NGA section 3, the Commission has exclusive authority to approve or deny an application for the siting, construction, expansion, or operation of a LNG terminal.

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[24] *Citing* Broadwater Pipeline's Application at 5.

[25] According to Riverhead, another possible demarcation point is the point where Broadwater's pipeline interconnects with the Iroquois pipeline.

[26] *Citing Border Pipeline Co. v. F.P.C.*, 171 F.2d 149 (D.C. Cir. 1948); *Distrigas Corp. v. F.P.C.*, 495 F.2d 1057 (D.C. Cir. 1974).

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Section 311(b) of the Energy Policy Act of 2005 (EPAct 2005) amended section 2 of the NGA to add a definition of LNG terminal as follows:[27]

> (11) 'LNG terminal' includes all natural gas facilities located onshore or in State waters that are used to receive, unload, store, transport, gasify, liquefy, or process natural gas that is imported to the United States from a foreign country, exported to a foreign country from the United States, or transported in interstate commerce by waterborne vessel, but does not include:
>
> (A) waterborne vessels used to deliver natural gas to and from any such facility; or
>
> (B) any pipeline or storage facility subject to the jurisdiction of the Commission under section 7.

27. The definition of LNG terminal in NGA section 2(21) specifically excludes any pipeline subject to the Commission's jurisdiction under NGA section 7. Our determination in the March 20 Order to commence section 7 regulation at the manifold deck where the 30-inch pipeline riser commences is supported based on the record in this proceeding and is consistent with NGA section 2(21). We found that the pipeline riser is the same diameter as the subsea pipeline and is part of a fixed-continuous pipeline that transports gas from the terminal to the interconnection with Iroquois in interstate commerce. We also found that the YMS tower supports the pipeline riser and is configured to allow pipeline maintenance activities to occur (e.g., pig launching facilities are provided on the YMS tower). Based on these facts, we found that the logical point to commence interstate transportation is at that manifold deck where gas enters the pipeline riser.

28. The parties' arguments that our determination to commence interstate commerce at the point on the YMS tower where the 30-inch pipeline riser commences is inconsistent with section (2)(21) of the NGA and Commission precedent are unavailing. Their assertion that the entire YMS tower must be part of the LNG terminal under section 3 ignores the fact that the tower houses the pipeline riser and is configured to allow pipeline maintenance activities. Our determination appropriately recognizes the dual function of the YMS tower, namely, to house the pipeline riser and associated pipeline facilities in addition to mooring the FSRU to the seafloor. Based on the specific functions of the proposed facilities, we found that facilities upstream of the manifold

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[27] Energy Policy Act of 2005, Pub. L. No. 109-58, § 311, 119 Stat. 594 (2005).

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deck are subject to foreign commerce under NGA section 3 and the facilities at or downstream of this point are subject to interstate commerce under NGA section 7.

29. We also find that Riverhead's reliance on Broadwater's application to support its position that interstate transportation under NGA section 7 does not commence before regasified LNG enters the pipeline on the seafloor is misplaced. First of all, we are not bound by the applicant's proposal but are required to make our determinations consistent with the requirements of the NGA and our implementing regulations. Moreover, Riverhead is incorrect in its assertion that Broadwater filed for authority to construct and operate the YMS tower in its section 3 applications. While Broadwater described the YMS[28] in its section 3 application, the YMS tower was identified as a required part of the project in its section 7 application.[29] Our determination here also finds that the YMS is part of the LNG terminal under section 3.

30. Finally, Riverhead's argument that the Commission's determination impermissibly regulates facilities concurrently under section 3 and section 7 is incorrect. No part of the proposed facilities is authorized under both sections of the NGA. Rather, we chose the manifold deck as the specific point where NGA section 3 jurisdiction ends and NGA section 7 jurisdiction begins.

B. Environmental Analysis

31. After conducting an extensive analysis regarding environmental and safety matters and considering and responding to comments presented in the proceeding, the Commission issued a draft EIS and then a final EIS in November 2006, and January 2008, respectively.[30] The final EIS considered the relevant environmental, scientific, economic, and safety factors associated with this project and concluded that, if the proposed project was constructed and operated in accordance with the Commission

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[28] As explained *infra* at P 3, the YMS will be incorporated into the bow section of the FSRU and will moor the FSRU to the YMS tower and allow the FSRU to pivot or weathervane around the tower.

[29] Broadwater Pipeline's application at 4.

[30] In addition to receiving written comments, public comment meetings on the draft EIS were conducted in January 2007 at Smithtown and Shoreham, New York, and at New London and Branford, Connecticut. Commission staff also met with representatives of the Connecticut Long Island Sound Task Force on LNG to discuss the draft EIS.

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Staff's and the United States (U.S.) Coast Guard's (Coast Guard) recommended mitigation measures, its construction and operation would result in limited adverse environmental impact and would be an environmentally acceptable action.[31] The final EIS explained that during construction the primary impacts would be the physical disturbance of the seafloor and related turbidity in the water column. During normal operations, it was found that the impacts of primary concern would consist of minor impacts to water quality, air quality, fisheries resources associated with impingement and entrainment, recreational boating and fishing, commercial fishing, commercial vessel traffic, and minor to moderate impact on visual resources. Additionally, the final EIS assessed the potential impacts that would result from a release of LNG and found that the potential for impacts would be mitigated by the fact that Hazard Zone 1 and Hazard Zone 2 do not extend to shore.[32] In addition, it found that the possibility of a release is unlikely due to the safety and security measures that would be included in the project design and operation, as well as the historic safety record of LNG shipping.

32. On rehearing, the parties assert that the Commission's environmental analysis is deficient for a number of reasons including that the environmental analysis is not complete because basic data is missing, approval was granted prior to determinations of consistency with the CZMA and conformity with the Clean Air Act (CAA), and prior to the issuance of a water quality certificate under the CWA, resource impacts have been ignored or minimized, and the alternatives analysis and cumulative impact analysis are inadequate.

1. Environmental Conditions

33. The March 20 Order authorized Broadwater to construct and operate the proposed Broadwater Project subject to complying with 87 Environmental Conditions. Several parties assert that the Commission's authorization subject to these conditions does not meet the requirements of NEPA or is otherwise unlawful.

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[31] Final EIS, p. 5-1.

[32] As discussed in section 3.10.4.3 of the final EIS and in section 1.4 of the Coast Guard's Water Suitability Report (WSR) (Appendix C to the final EIS), Hazard Zone 1 would extend to 750 yards (2,250 feet) and Hazard Zone 2 would extend to 2,050 yards (6,150 feet).

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a. Conditions Requiring Further Studies/Plans/Information

34. Several parties assert that the Commission has issued the March 20 Order authorizing the Broadwater Project without completing the acquisition and analysis of environmental impact information mandated under NEPA. The Connecticut Commissioner and the Attorney General state that NEPA was created to ensure that agencies will base decisions on detailed information regarding significant environmental impacts and that information will be available to a wide variety of concerned public and private actors.[33] They argue that numerous environmental conditions recognize that significant information necessary to create a complete or even reasonably accurate picture of the potential environmental impacts of the project has not been considered because it has not been created.

35. Specifically, the Connecticut Commissioner and the Attorney General assert that necessary geotechnical analysis of sediments at the site of the FSRU has never been performed. Without this study, they claim it is not possible to determine to what extent support pilings will be needed and, thus, impossible to evaluate the potential sediment dispersion impacts, or the strength and security of the installation method ultimately selected. Similarly, they assert that necessary information regarding the method chosen for crossing the environmentally sensitive Stratford Shoals area has not been developed or provided and important information regarding the planned backfilling of the pipeline trench has been deferred.

36. The Connecticut Commissioner and the Attorney General also state that the design of the FSRU has not been completed and is expected to be filed with the Commission at some indefinite time in the future. They point out that following the loss of scores of anchored oil and gas platforms in the Gulf of Mexico during hurricanes Rita and Katrina, the Coast Guard has chosen to conduct a full redesign of energy infrastructure anchoring systems standards. Because these new design standards are not complete, they assert it is impossible to conclude that the YMS anchoring system is safe or reliable. Similarly, the New York Towns claim that the March 20 Order has not assured that the adverse environmental effects of the proposed FSRU are adequately identified and evaluated since the design specifications of the FSRU are not yet available.

37. The Connecticut Commissioner and the Attorney General claim that no Emergency Response Plan has been prepared and therefore it is impossible to determine

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[33] C*iting Morongo Band of Mission Indians v. Federal Aviation Administration*, 161 F.3d 569, 575 (9th Cir. 1998), *Mississippi River Basin Alliance v. Westphal*, 230 F.3d 170, 175 (5th Cir. 2000).

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the probable effectiveness of any response effort. According to the Connecticut Commissioner and the Attorney General, this information is critical because an incident's damage is often determined by the speed and effectiveness of the emergency response. Further, they point out that the Coast Guard has concluded that it currently does not have the resources required to implement the measures that have been identified as being necessary to effectively manage the potential risk to navigation safety and maritime security associated with the Broadwater Energy proposal.[34]

38. Save the Sound also asserts that many parts of the project did not exist at the time the final EIS was drafted and therefore could not be considered in the review of potential impacts of the project. It also notes that the geotechnical review of the sediments for the YMS has not been conducted, and in addition states that the backfill plan has not been filed, the plan to estimate worst case scenario impacts was not included, the mitigation level for level A and B harassment thresholds has not been established, and the lighting plan has not been developed.

39. Save the Sound also complains that there are numerous determinations of potential negative environmental impact in the final EIS and order which are summarily dismissed on the grounds that other agencies will determine and require mitigation. Save the Sound maintains that the Commission cannot comply with NEPA by relying on post-EIS studies to satisfy its statutory obligations.[35] Specifically, it cites requirements that Broadwater: (1) develop measures to offset nitrogen oxide (NOx) emissions, which are expected to exceed the applicable threshold, based on consultation with the NYSDEC; (2) develop mitigation measures to reduce ozone and particulate matter with a diameter of 2.5 micrometers (PM2.5) in consultation with the NYSDEC; and (3) finalize a Vessel Strike and Avoidance Plan with the National Marine Fisheries Service (NMFS).

40. For these reasons, the parties conclude that the March 20 Order is based upon inadequate information and needs to be fully reconsidered.

Commission Response

41. Under NEPA, the purpose of an EIS is to ensure that an agency, in reaching its decisions, will have available and will carefully consider, detailed information

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[34] *Citing* WSR Report, at 156-157; Government Accountability Office (GAO) Report, at 1.

[35] *Citing Conservation Law Foundation, Inc. v. Dep't of the Air Force*, 864 F. Supp. 265 (D. N.H. Aug. 29, 1994).

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concerning significant environmental impacts; it also guarantees that the relevant information will be made available to the larger audiences that may also play a role in both the decision-making process and the implementation of that decision.[36] The final EIS adopted by the Commission for the Broadwater Project sets forth the information necessary to achieve those purposes.

42. We disagree that the final EIS for the Broadwater Project was based on inadequate information. As we have explained in other cases,[37] practicalities require the issuance of orders prior to completion of certain reports and studies because large projects such as this take considerable time and effort to develop. Perhaps more importantly, their development is subject to many significant variables whose outcomes cannot be predetermined. Thus, some aspects of a project may remain in the early stages of planning even as other portions of the project become a reality. Accordingly, consistent with longstanding practice, and as authorized by NGA section 7(e)[38] and NGA section 3(e)(3)(A),[39] the Commission typically authorizes natural gas projects pursuant to its NGA jurisdiction subject to conditions that must be satisfied by an applicant or others before the authorizations can be effectuated by constructing and operating the project.[40] As is the case with virtually every order issued by the Commission that authorizes construction of facilities, the instant approval is subject to Broadwater's compliance with the environmental conditions set forth in the order.

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[36] *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

[37] *See, e.g., Weaver's Cove Energy, LLC*, 114 FERC ¶ 61,058, at P 108-115 (2006); *Islander East Pipeline Co.*, 102 FERC ¶ 61,054, at P 41-44 (2003).

[38] Section 7(e) of the NGA grants the Commission the "power to attach to the issuance of the certificate and to the exercise of rights granted thereunder such reasonable terms and conditions as the public convenience and necessity may require." 15 U.S.C. § 717(f)(e).

[39] Under NGA section 3(e)(3)(A) the Commission may by its orders approve such application, "in whole or part, with such modifications and upon such terms and conditions as the Commission may find necessary or appropriate."15 U.S.C. § 717b(e)(3)(A).

[40] *East Tennessee Natural Gas Co.*, 102 FERC ¶ 61,225, at P 23 (2003), *aff'd sub nom. Nat'l Comm. for the New River, Inc. v. FERC*, 373 F.3d 1323 (D.C. Cir. 2004).

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43. As the Supreme Court stated in *Robertson* "NEPA does not require a complete plan be actually formulated at the onset, but only that the proper procedures be followed for ensuring that the environmental consequences have been fairly evaluated."[41] Here, the Commission made extensive efforts to assure that environmental issues were resolved appropriately. The issues the parties raise were discussed in considerable detail in the final EIS and were subject to public comment. Based on the information in the record, we imposed additional measures to mitigate any adverse environmental impact associated with the project. For example, we addressed the preliminary front-end-engineering design and specifications for the FSRU and on the basis of this discussion required additional action to be documented in reports to be filed and reviewed by the Commission (section 3.10.2.2 of the final EIS). The final EIS describes Broadwater's dredging contingency plan for Stratford Shoal. Details for the contingency plan discussed in the final EIS include the trench width (26 to 54 feet), equipment to be used (spud barge containing a heavy-duty excavator), the rate and duration of sediment excavation (3,000 to 5,000 cubic yards of sediment per day, for approximately 13 days), volume of material to be removed (40,000 cubic yards), and coordination with NMFS. Turbidity and other impacts anticipated with implementation of the contingency plan are discussed in section 3.2.3.2 of the final EIS. Finally, the March 20 Order includes a condition (Environmental Condition No. 15) regarding the disposal site for dredged material and a requirement for coordination with federal and state agencies to avoid and minimize potential impacts associated with pipeline installation prior to implementation of an alternative installation method across Stratford Shoal (Environmental Condition No. 14).

44. Backfilling of the trench is also the subject of a condition to the order which requires coordination with the U.S. Army Corps of Engineers (COE), the Environmental Protection Agency (EPA), and the NMFS to identify the conditions under which backfilling would be required, the appropriate methods for backfilling, and detailed post-construction monitoring criteria to assess success including use of a multi-beam echosounder system or comparable technology (Environmental Condition No. 16). The final EIS includes a lengthy discussion of other trench backfilling operations and the level of success achieved. Further, the final EIS assesses the impacts of backfilling by concluding that turbidity impacts would be expected to be similar in magnitude and duration to turbidity experienced during installation of the proposed pipeline. This conclusion is based on the use of a backfill plow to traverse recently disturbed sediments.

45. The final EIS includes similar discussions on issues related to geological hazards (section 3.1.1.3), Level A harassment and Level B harassment thresholds for construction

[41] 490 U.S. at 352.

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and operational noise (section 3.3.2.2), worse-case spill scenarios (section 3.2.2.1), and the lighting plan (section 3.3.5.2). The March 20 Order requires Broadwater to conduct further studies and/or consult with responsible agencies on these issues and file the results for review and written approval by the Director of the Commission's Office of Energy Projects (OEP).[42]

46. Finally, emergency response and evacuation planning were discussed in section 3.10.6 of the final EIS. The requirement in the March 20 Order (Environmental Condition No. 45) that Broadwater file an Emergency Response Plan for approval prior to any construction activity in the Sound is in accord with section 3A(e) of the NGA which provides that the Commission shall require a LNG terminal operator to develop an Emergency Response Plan and it shall "be approved by the Commission prior to any final approval to begin construction."

47. In summary, our review of Broadwater's applications under the requirements of the NGA and NEPA, discusses and identifies those limited NEPA issues requiring further study treatment and requires their completion and review prior to commencement of construction. The extensive record on environmental issues provided sufficient information regarding the proposed action to be able to fashion adequate mitigation measures to support a determination that Broadwater Project will cause no significant environmental impacts upon compliance with those mitigation measures.

48. We also disagree with Save the Sound's assertion that we have improperly deferred determinations of potential negative impacts to other agencies that will determine and require mitigation. We referred issues related to NOx emissions and ozone to the NYSDEC and the finalization of a Vessel Strike and Avoidance Plan to the NMFS because they are the resource agencies with expertise and responsibilities over the particular subject matters. Moreover, the Commission undertakes its own independent assessment of the other agencies' studies and results prior to accepting or rejecting the agencies' recommendations.[43] To the extent any of the pending consultations or studies in this case indicate a need for further review, or indicate a potential for significant

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[42] *See* Environmental Condition No. 12 (geotechnical analyses), No. 18 (worse-case spills), Environmental Condition No. 20 (Level A harassment and Level B harassment thresholds), and Environmental Condition No. 21 (detailed lighting plan).

[43] *See Cameron LNG, LLC*, 112 FERC ¶ 61,146 (2005) (*citing, e.g., Steamboaters v. FERC*, 759 F.2d 1382, 1393 (9th Cir. 1985), describing the Commission's obligation to take a hard look at the potential environment impacts of a proposed action, and to not axiomatically adopt other agencies' recommendations).

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adverse environmental impacts, the Director of OEP will not provide the necessary clearances for commencement of construction. Additionally, that office's final resolution of those conditions will be subject to Commission rehearing, which is also part of the paper hearing for this proceeding.[44]

b. Authorization Prior to Determinations under the CZMA, CWA, CAA, and Prior to the Issuance of Easements

49. The NYSDOS, the NYSDEC, and several parties[45] assert that the March 20 Order improperly approves the Broadwater project prior to a final determination of consistency with the CZMA, in violation of federal law. They claim that even though Environmental Condition No. 28 requires Broadwater to file a determination of consistency with the CZMA prior to installation activities in Long Island Sound, this conditional authority is insufficient to meet the requirements of the CZMA. They maintain that under the CZMA Congress has expressly prohibited a federal agency from granting a "license or permit" for a federal project in a state's coastal zone "until the state or its designated agency has concurred with the applicant's certification or until, by the state's failure to act, the concurrence is conclusively presumed."[46]

50. Therefore, they assert that the March 20 Order exceeds the Commission's statutory authority, a point the Connecticut Commissioner and Attorney General state is reinforced by the recent case of *City of Tacoma v. FERC*, which they state held that the Commission exceeded its authority in approving a project without first complying with a statute that, like the CZMA, requires an applicant to procure state certification before federal agencies issue licenses.[47] They also state that now that the NYSDOS has denied

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[44] For this reason, the mitigation measures adopted here differ from those found inadequate in *Conservation Law Foundation*, cited by Save the Sound, because in that case the Department of the Air Force based its determination on certain mitigation measures on information received subsequent to the preparation of the final EIS that was not subject to public disclosure. 864 F. Supp. 265, 288.

[45] The Attorney General, the Commissioner, Suffolk, the New York Towns, Riverhead, and Save the Sound.

[46] *Citing* Coastal Zone Management Act, 1456(c)(3)(A), *Mountain Rhythm Res. v. FERC*, 302 F.3d 958, 960 (9th Cir. 2002).

[47] 460 F.3d 53, 68 (D.C. Cir. 2006).

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Broadwater's determination of consistency under the CZMA, the order must be withdrawn or vacated.

51. Similarly, the NYSDEC, Suffolk, the New York Towns, and Riverhead argue that the Commission violated section 401(a)(1) of the CWA[48] by authorizing the Broadwater project prior to the grant of a water quality certification by New York. They submit that the Commission's issuance of authorization for the project may not precede a state determination under this statute. NYSDEC and Riverhead assert that the court's decision in *Alabama Rivers Alliance v. FERC*[49] found that section 401(a)(1) of the CWA requires a water quality certification from the state before the Commission can issue a license amendment.[50] In addition, Riverhead argues that the Commission's interpretation of the CWA is inconsistent with section 5.23 (b) of the Commission's hydropower licensing regulations which they claim anticipate that a water quality certificate is a legal prerequisite to a decision by the Commission whether to issue a license for a hydroelectric project. Several of these parties also complain that the March 20 Order fails to condition its approval on the issuance of a grant of a water quality certification, effectively waiving this statutory requirement, an action the Commission it is not permitted to do.

52. Suffolk and Riverhead also argue that the Commission violated section 176(c)(1) of the CAA[51] by authorizing the Broadwater project prior the grant of an air conformity determination. In addition, the New York Towns asserts that the Commission failed to comply with the CAA by issuing its March 20 Order prior to the issuance by the NYSDEC of air quality permits. As with their arguments regarding the CWA, the parties also complain the March 20 Order fails to condition its approval on the issuance of these determinations required under the CAA.

53. Riverhead and Suffolk claim that the court decisions in *Public Utility Comm'n of the State of California* v. *FERC*[52] and *City of Grapevine, Texas v. Department of*

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[48] 33 U.S.C. § 1341(a)(1) (2000).

[49] 325 F.3d 290 (D.C. Cir. 2003).

[50] Riverhead also cites to *S.D. Warren Co. v. Maine Board of Environmental Protection*, 547 U.S. 370 (2006) (describing section 401's purpose and scope).

[51] 42 U.S.C. § 7506(c)(1) (2000).

[52] 900 F.2d 269, 282 (D.C. Cir. 1990).

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Transportation,[53] cited in other cases to support the Commission's approach, are inapposite.[54] Suffolk notes that these cases do not construe statutory language under the CZMA, CAA, or CWA. Riverhead claims that these cases address a single conditional approval rather than the situation here where Broadwater's authorizations are broadly subject to water, coastal consistency, and air conformity submissions from the state agencies.

54. Suffolk also argues that because the proposed project is located on state land, a conveyance of easements from the New York State Office of General Services with the consent of Suffolk County is a necessary precondition to the construction of the project. Because there is no conveyance of easements, it argues the March 20 Order is defective.

Commission Response

55. The CZMA provides in pertinent part that: "[n]o license or permit shall be granted" until the state has concurred with the applicant's consistency certification for a proposed activity that "affects any land or water use or natural resource of the coastal zone" of a state.[55] Similarly, section 401(a)(1) of the CWA provides that an applicant for a federal license to conduct an activity that "may result in any discharge into navigable waters" must obtain a water quality certification and, further, that "[n]o license or permit shall be granted until the certification required by this section has been obtained or has been waived . . . ."[56] As stated previously, the NYSDOS has delegated federal authority under the CZMA and issued its consistency determination on April 10, 2008, finding that the project was inconsistent with the New York CMP. The NYSDEC has delegated authority under the CWA and to date has not issued a water quality certification.

56. Section 176 of the CAA states that "[n]o department, agency or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license or permit, or approve, any activity which does not conform to an implementation plan after it has been approved or promulgated under Section 7410 of

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[53] 17 F.3d 1502 (D.C. Cir. 1994).

[54] Riverhead argues that to the extent these statutes are deemed to be ambiguous, the Commission's interpretation should not be given deference because the Commission does not administer these statutes. *Citing Chevron U.S.A. v. Natural Resources Defense Council, et al.*, 467 U.S. 837 (1984).

[55] 16 U.S.C. § 1456 (c)(3)(A) (2000).

[56] 33 U.S.C. § 1341(a)(1) (2000).

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this title."[57] The Commission is the lead agency for a general conformity determination under the CAA and is required to complete a general conformity analysis to ensure that the New York State Implementation Plan that is currently being revised by the NYSDEC is not impacted by approval of the project.[58] Title V air quality permits under the CAA are delegated to the NYSDEC and to date have not been issued.

57. Although we have found that the Broadwater Project is consistent with the public interest under the NGA, we recognize that the project cannot proceed until it receives all other necessary federal authorizations, including those delegated to the states. As the parties have noted here, these include relevant authorizations under the CZMA, CWA, and CAA. The Commission's practice has been to authorize import terminals and issue certificates for natural gas pipelines pursuant to its NGA authority after it has completed its necessary review.

58. We disagree with the parties assertions that the issuance of our order authorizing the Broadwater Project prior to the finalization of all state and federal authorizations under the CZMA, CWA, and CAA is impermissible. Even though the Commission has issued authorizations under the NGA for the Broadwater Project, the state's rights under the CZMA, CWA, and CAA are fully protected. The applicants must receive the necessary state approvals under these federal statutes prior to construction. Nor does our authorization in the March 20 Order impact any substantive determinations that need to be made by the states under these federal statutes. The New York state agencies retain full authority to grant or deny the specific requests. Moreover, because construction cannot commence before all necessary authorizations are obtained, there can be no impact on the environment until there has been full compliance with all relevant federal laws.

59. Rather, as we have stated before, the Commission's approach is a practical response to the reality that, in spite of the best efforts of those involved, it may be impossible for an applicant to obtain all approvals necessary to construct and operate a project in advance of the Commission's issuance of its certificate without unduly delaying

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[57] 42 U.S.C. § 7506(c)(1) (2000).

[58] Appendix K of the final EIS contains a preliminary general conformity analysis. After completion of the New York State Implementation Plan, the Commission will evaluate the magnitude and potential impact of the emissions and determine whether mitigation is necessary.

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the project.[59] While Broadwater is unable to exercise the authorization to construct and operate the project until it receives all necessary federal authorizations, the Commission takes this approach in order to make timely decisions on matters related to its NGA jurisdiction that will inform project sponsors, and other licensing agencies, as well as the public.[60] This approach is consistent with the Commission's broad conditioning powers under sections 3 and 7 of the NGA, as explained infra.

60. As we have stated in previous cases, we believe our conclusions are supported by the *City of Grapevine*.[61] In that case, the court upheld the Federal Aviation Administration's (FAA) approval of a runway, conditioned upon the applicant's compliance with the National Historic Preservation Act (NHPA). The Commission found the NHPA to be analogous to the CWA and CZMA, in that the NHPA states that the head of a federal agency "shall," prior to the approval of the expenditure of any Federal funds on an undertaking, take into account the effect of the undertaking on historic properties. Thus, the Commission explained, "this language expressly prohibits a federal agency from acting prior to compliance with its terms, a fact that did not deter the *City of Grapevine* court from upholding the FAA's conditional approval of a runway."[62]

61. The Commission has also relied upon *Public Utility Comm'n of the State of California*[63] which affirmed the Commission's determination that, contingent upon the completion of environmental review, there were no non-environmental bars to construction of a proposed pipeline. In doing so, the court noted that the "Commission's non-environmental approval was expressly not to be effective until the environmental

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[59] *See, e.g., Crown Landing LLC*, 117 FERC 61,209, at P 26 (2006); *Millennium Pipeline Co., L.P.*, 100 FERC ¶ 61, 277, at P 225-231 (2002).

[60] To rule otherwise, would either place the Commission's administrative process indefinitely on hold until states with delegated federal authority choose to act or require the Commission to deny applications where all federal permits have not issued prior to the Commission completion of its review under the NGA. Either of these approaches would likely delay the in-service date of major infrastructure projects to the detriment of consumers and the public in general.

[61] 17 F.3d 1502, 1509 (D.C. Cir. 1994).

[62] *Georgia Strait Crossing Pipeline LP*, 108 FERC ¶ 61,053, at P 16 (2004).

[63] 900 F.2d 269 (D.C. Cir. 1990).

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hearing was completed" and that an agency can make "even a final decision so long as it assessed the environmental data before the decision's effective date."[64]

62. The court's holding in *State of Idaho v. Interstate Commerce Commission*[65] also supports the issuance of the conditioned authorization in this proceeding. In that case, the court reviewed the ICC's issuance of authorization for a railroad to abandon and salvage a stretch of track. The authorization provided that the railroad could not begin salvage activity until: it had consulted with the state and the EPA regarding the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and the Resource Conservation and Recovery Act (RCRA); it had consulted with the U.S. Fish and Wildlife Service (FWS) and the COE regarding wetlands and related issues; Endangered Species Act compliance was completed; and any necessary water quality certification had been obtained. While the court concluded that the ICC had erred by not performing a proper NEPA analysis and had violated ESA regulations by not preparing a biological assessment, it also stated that it is "important to note that the Commission has still not given final approval to salvage operations; it has merely set forth the conditions under which [the railroad] may undertake them if it chooses to do so." The court quoted a statement from counsel for the ICC at oral argument that the Commission's interpretation of its authorization was that the railroad had to prepare a biological assessment, followed by FWS' issuance of a biological opinion, at which point the railroad would come back before the Commission, which would then decide what to do, based on the findings of the biological assessment and the biological opinion.[66]

63. Suffolk's argument that these cases are inapposite because they do not involve interpretations of statutory language under the CZMA, CAA, or CWA is unavailing. There is no direct judicial precedent on the issue of whether the Commission can issue authorizations under the NGA prior to the completion of state determinations under these statutes. As we have stated previously, we believe these judicial precedents construe the statutory terms with appropriate respect for the practical demands facing an administrative agency and as necessary to accomplish disparate statutory goals, without doing violence to such terms.[67] Equally unavailing is Riverhead's argument that the holdings in the *City of Grapevine* and in *Pubic Utility Comm'n of California* are not

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[64] *Id.* at 282.

[65] 35 F.3d 585 (D.C. Cir. 1994).

[66] *Id.* at 598.

[67] *See, e.g., Crown Landing LLC*, 117 FERC ¶ 61,209, at P 18-21 (2006).

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applicable here because Broadwater's authorizations are subject to more than one state determination. As described above, the statutory language in all three federal statutes is similar, so it is reasonable to rely on these court decisions to support our statutory interpretation here as it pertains to all three federal statutes. We also disagree with Suffolk's claim that section 5.23 of the Commission's hydropower licensing regulations anticipates that a water quality certificate is a legal prerequisite to a decision by the Commission whether to issue a license for a hydroelectric project. The regulation requires a license applicant to file either a copy of the water quality certification, a copy of the request for certification, or evidence of waiver of certification but does not specifically address the issue of whether the Commission can issue a license conditioned on later compliance with the CWA.

64. We also find that the parties' reliance on the *City of Takoma* and *Alabama Rivers* is misplaced. The *City of Takoma* considered the issue of what constitutes a state certification under section 401 of the CWA, and only references in passing to the Commission's granting a license or permit within the meaning of the statute. In that case, the state issued water quality certification before the Commission issued a license. *Alabama Rivers* addressed the issue of whether a modification to an existing license requires a state water quality certification. The timing of certifications was not an issue. Thus, the *City of Tacoma* and *Alabama Rivers* do not involve the direct construction of the relevant statutory terms with respect to procedural fact patterns similar to those presented here.[68]

65. The March 20 Order includes an explicit condition for compliance with the CZMA prior to construction activity in the Sound. We imposed this condition because there is no separate permit required from another agency that prevents Broadwater from commencing construction prior to a consistency determination under this statute. In contrast, the federal obligation for compliance with the CWA rests with the COE and EPA and a permit from the COE prior to construction is a mandatory federal permit, as indicated in Table 1.3-1 of the final EIS.[69] Similarly, Table 1.3-1 of the final EIS

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[68] Similarly, the citations to *Mountain Rhythm* and *S.D. Warren Co.* provide no relevant analysis. *Mountain Rhythm* involved a dispute whether potential projects were correctly and legally determined by NOAA to be in a coastal zone. *S.D. Warren Co.* addressed the issue of whether operating a dam to produce hydroelectricity caused a "discharge" under section 401 of the CWA.

[69] One of the requirements for obtaining a COE section 404 permit under the CWA is a section 401 certification from the affected state that the discharge to be permitted will comply with state water quality standards.

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identifies EPA and NYSDEC as the agencies responsible for Title V Clean Air Act permits. Specifically, NYSDEC has the federally-delegated permit authority for the Broadwater Project. Because authorization to construct is dependent on the COE authorization and on the NYSDEC permit, a requirement by the Commission would be redundant and would have no effect in practice. That being said, Broadwater must receive the requisite permits under the CWA and CAA, as well as a consistency determination under the CZMA before it commences construction. Additionally, the Commission is responsible for completing the general conformity analysis under the CAA and will not authorize construction prior to its completion.

66. We also do not agree with the assertions that we must withdraw or vacate the March 20 Order now that the NYSDOS has denied Broadwater's determination of consistency under the CZMA.[70] While the NYSDOS has denied consistency with the New York CMP, Broadwater has appealed that finding to the Commerce Department. We will not authorize construction of the Broadwater Project in New York State waters unless, after the appeals process has run its course, the NYSDOS denial of consistency is overturned. Nothing in the law requires us to negate the March 20 Order.

67. Finally, as noted by Suffolk, Broadwater has filed for easements for the project with the appropriate New York State agencies. If an easement is not granted for the proposed section 7 facilities, Broadwater may use the right of eminent domain granted to it under section 7(h) of the NGA to obtain a right-of-way. Similar eminent domain authority is not provided under section 3 of the NGA.

c. Compliance With and Enforceability of Conditions

68. Suffolk submits that the March 20 Order fails to contain provisions that would ensure compliance with many of the imposed conditions. Referring to Environmental Condition No. 8 that requires Broadwater to employ an Environmental Inspector (EI), Suffolk claims that there is risk of collusion between the EI and Broadwater if the EI is paid by Broadwater and the order does not clarify how the Commission will ensure that the EI is fulfilling its duties. Suffolk also asserts that the condition should require Broadwater to file updated status reports throughout the life of the project rather than only requiring these reports to be filed until construction activities are complete.

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[70] The Attorney General also claims that vacating the order or reopening the record is appropriate because the NYSDOS consistency determination contradicts statements in the final EIS on visual impacts, industrialization, and impacts to Stratford Shoals. These issues are fully addressed in the final EIS and the conclusions are supported by the record in this proceeding.

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69. Next, Suffolk addresses Environmental Condition No. 11 which provides that:

> **Within 30 days of placing the authorized and certificated facilities in service**, Broadwater shall file an affirmative statement with the Secretary, certified by a senior company official:
> a. that the facilities have been constructed in compliance with all applicable conditions and that continuing activities will be consistent with all applicable conditions; or
> b. identifying which of the authorization or certificate conditions Broadwater has complied with or will comply with. This statement shall also identify any areas where compliance measures were not properly implemented, if not previously identified in filed status reports, and the reason for noncompliance.

Suffolk complains that this condition: (1) permits Broadwater to delay notifying the Commission of its non-compliance with the conditions in the order until after the Broadwater Project has been placed in service; (2) implicitly suggests that Broadwater may be permitted to fail to implement conditions contained in the order; and (3) provides for no consequences if Broadwater fails to implement the imposed conditions.

70. Suffolk also refers to Environmental Condition No. 35 that requires Broadwater to engage and retain a qualified certifying entity for an independent review of the codes and standards development, detailed design, fabrication, installation, and operation of the proposed FSRU. According to Suffolk, this condition means that the Commission does not know what the project's design will be despite its approval of the project.[71] Suffolk also complains that the order does not specify who the appropriate certifying entity will be nor does it state whether the work of the certifying entity will be monitored by the Commission or any other agency.

71. Also, Suffolk contends that the March 20 Order should be vacated because at least three conditions imposed in the order can never be met. First, it claims that Broadwater can never obtain a CZMA consistency determination from the NYSDOS because the NYSDOS already determined the project is inconsistent with the New York CMP. Second, it asserts that the Coast Guard, Suffolk County, and local emergency planning groups cannot coordinate with Broadwater to develop an Emergency Response Plan because they lack the resources to address a catastrophic accident or fire on the FSRU or

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[71] Suffolk states this conclusion is buttressed by Environmental Condition Nos. 80-85 which impose design standards on the final design of the FSRU, YMS, and related facilities.

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LNG carriers, or in the case of the Coast Guard, provide security for the LNG terminal and carriers. Suffolk also states that the requirement that Broadwater develop a Cost-Sharing Plan for funding project-specific security/management costs that would be imposed on state and local agencies ignores the inability of local governments to shift tax dollars from essential government functions,[72] as well as the fact that the Marine Transportation Security Act[73] requires the Coast Guard, not local agencies or private citizens, to provide resources to protect against marine threats. Third, Suffolk contends that Broadwater can never obtain adequate additional security from the Coast Guard because the Coast Guard has explicitly stated it lacks the resources to provide security for the Broadwater Project. Suffolk also complains that Environmental Condition No. 86 that requires Broadwater to ensure that the FSRU and LNG vessels transiting to and from the FSRU comply with all requirements set forth by the Coast Guard Captain of the Port is not even mandatory, because Appendix B to the order states that "we recommend that [Condition No. 86] apply throughout the life of the facility."

Commission Response

72. We disagree that we have failed to ensure compliance with the conditions imposed in the March 20 Order. Viewed as a whole, the conditions imposed in the order adopt a comprehensive plan to ensure Broadwater's compliance with the requirements of the Commission's order not only during construction of the project but for the life of the proposed facilities. While the primary responsibility for ensuring compliance with the Commission's order lies with Broadwater, we will ensure that Broadwater is fulfilling its duties by conducting our own compliance monitoring during construction, including regular field inspections. In addition, the Commission and the Coast Guard will continue compliance inspections of the terminal throughout the life of the project. If Broadwater fails to comply with the conditions of the order, it is subject to sanctions and an assessment of civil penalties of up to $1 million per day per violation for violations of our order.[74]

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[72] The New York Towns raise similar concerns and state that the towns will not participate in the Emergency Response Plan.

[73] Maritime Transportation Security Act of 2002, Pub. L. No. 107-295, 116 Stat. 2064.

[74] EPAct 2005 amended the NGA to give the Commission the authority to assess civil penalties of up to $1 million per day per violation for violations of rules, regulations, and orders issued under the act. Energy Policy Act of 2005, Pub. L. No. 109-58, 314(b)(1)(B), 119 Stat. 594, 691 (2005).

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73. Suffolk is also incorrect in asserting that Condition No. 11 permits Broadwater to delay notification of non-compliance with the order's conditions until after the in-service date of the project. Condition No. 11 requires a report to be filed after the in-service date of the facilities and needs to be viewed together with the additional conditions imposed in the order. Condition No. 9 requires Broadwater to file updated status reports on a weekly basis until all construction and restoration activities are complete including, among other things, a listing of all problems encountered and each instance of non-compliance observed by the EI during the reporting period. In addition, many of the conditions imposed in the order require Broadwater to make a filing with the Commission prior to undertaking a specified activity that will be reviewed by the Commission for compliance.[75] Authorizations to proceed through the construction process and ultimately to initiate service are granted incrementally and are based on the satisfaction of all relevant conditions. Consequently, an unsatisfied condition would generally stop the progression of all subsequent steps by the applicant.

74. We require that the applicant identify any area of non-compliance during construction in the weekly status reports, as well as the report filed after the in-service date of the facilities, so that we can take appropriate corrective action and when necessary impose sanctions and/or penalties. We impose sanctions and/or penalties for non-compliance on a case-by-case basis in order to tailor our remedies to the specific facts presented (e.g., degree of non-compliance and resulting impacts).

75. Regarding the design of the FSRU, although the submitted front-end-engineering design and specifications for the FSRU are preliminary, the information provides sufficient basis for the technical review undertaken by the Commission staff. As stated on page 3-260 of the final EIS, the American Bureau of Shipping[76] will be the Certifying Entity. As required by Environmental Condition No. 35, the Certifying Entity would independently review the codes and standards development, detailed design, fabrication, installation, and operation of the FSRU. Any recommendations resulting from this review would be provided to the Commission and the Coast Guard. In accordance with

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[75] In addition, Broadwater is required to notify the Commission whenever it receives any notice of noncompliance identified by other federal, state, or local agencies on the same day that such agency notifies Broadwater. March 20 Order at Ordering Paragraph I.

[76] The American Bureau of Shipping is a world-recognized classification society which helps ensure the safety and security of property and the natural environment through the development and verification of standards for the design, construction, and operational maintenance of marine-related facilities.

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the Environmental Conditions contained in Appendix B of the Order, any required project approvals would be under the authority of the Director of OEP.

76. We disagree with Suffolk's assertion that certain of the environmental conditions can never be met. As noted above, while the NYSDOS has denied consistency with the CZMA, Broadwater has filed an appeal of that finding with the Commerce Department. Only time will tell whether Broadwater will be successful in its attempt to have the NYSDOS' decision overturned.

77. As required by section 3(A)(e) of the NGA, the March 20 Order includes a condition requiring Broadwater to develop an Emergency Response Plan in coordination with the Coast Guard, local fire and police departments, emergency responders, and other applicable agencies. As the Emergency Response Plan must be reviewed and approved prior to any project-related construction, the Commission staff will ensure that appropriate state and local agencies have been involved in preparing the plan and that the Coast Guard has been consulted and concurs. In situations where resource gaps are identified, the required Cost Sharing Plan must identify the mechanisms for funding any capital costs associated with any necessary security/emergency management equipment and personnel base. In the absence of appropriate security/emergency response resources or funding, the Emergency Response Plan and the Cost Sharing Plan would not be approved and project construction would not be allowed.

78. As described in section 8.4 of the WSR, the Coast Guard would prepare a proposal to obtain additional personnel and equipment to implement its safety and security recommendations. On June 25, 2008, the Coast Guard issued a Letter of Recommendation stating that the waterway is not currently suitable, but can be made suitable for LNG marine traffic if the risk mitigation measures detailed in section 8.4.1 of the WSR are implemented. If the needed resources are not available and properly funded, however, the Commission and the Coast Guard would not allow the project to go into operation.

79. Regarding Suffolk's concern regarding Environmental Condition No. 86 that requires Broadwater to ensure that the FSRU and LNG transit vessels comply with all requirements set forth by the Coast Guard Captain of the Port, we clarify that this condition is mandatory.[77]

[77] This is consistent with the text of the March 20 Order at P 49.

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d. Environmental Condition No. 1

80. Environmental Condition No. 1 provides, in part, that Broadwater must request any modifications to the construction procedures, mitigation measures, or conditions adopted in the March 20 Order and receive approval in writing from the Commission's Director of OEP before using that modification**.** The New York Towns assert that the Commission's regulations, specifically 18 C.F.R. § 375.308 (2008), do not permit the Director to grant modifications to Commission orders. Although they recognize that 18 C.F.R. § 385.308(x)(7) authorizes the Director to take necessary steps to ensure the protection of environmental resources "including authority to design and implement additional or alternative measures and stop work authority," they argue that it does not contain a specific authorization for the Director to modify the Commission's order as contemplated in Condition No. 1. Thus, they claim that Environmental Condition No. 1 of the March 20 Order is invalid.

Commission Response

81. The New York Towns' argument is unsupported. The cited delegation of authority gives the OEP Director broad authority to protect the environment by implementing additional or alternative measures which by their very nature would modify previous measures adopted by the Commission. In any event, the March 20 Order clearly provides the OEP Director the authority to modify a condition imposed in the order.[78] The matters delegated to the Director of OEP are matters within the particular technical expertise of the Director and his staff. Moreover, any delegated order issued by the OEP Director would be subject to rehearing under the Commission's regulations.

2. Adequacy of Environmental Analysis

a. Safety and Security

82. Commission staff and the Coast Guard technical staff have shared review of the engineering, reliability, and safety aspects of the project based on an agreement between the two agencies. This joint review began in late 2004 when Broadwater initiated the Commission's pre-filing process. The Commission has the lead responsibility for review of the proposed subsea pipeline and LNG handling, storage, and regasification on the

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[78] The Commission is permitted to establish its policies by rulemaking or by adjudication. *See, e.g., SEC v. Chenery Corp*., 332 U.S. 194, 201-203 (1947); *NLRB v. Bell Aerospace*, 416 U.S. 267, 294 (1974).

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FSRU. The Coast Guard has the lead responsibility for assessing the safety and security of the FSRU as a marine facility and the LNG carrier operations while at berth and in transit to and from the FSRU in U.S. territorial waters. The evaluations, which have focused on the safety of the engineering design and the projected operational reliability, have resulted in recommended design changes and considerations to improve the safety, security, and reliability of the facility. In addition, the Coast Guard has indicated in its WSR Report that additional risk mitigation measures are necessary to make the waterway suitable for LNG vessel traffic and the operation of the FSRU. On June 25, 2008, the Coast Guard issued a Letter of Recommendation stating that the waterway is not currently suitable, but can be made suitable for LNG marine traffic if the risk mitigation measures detailed in section 8.4.1 of the WSR are implemented. Environmental Condition No. 86 requires Broadwater to ensure that the FSRU and associated LNG marine traffic comply with all requirements set forth by the Coast Guard so that necessary risk mitigation measures are in place during operation.

83. On rehearing, several parties claim that the final EIS contains an inadequate consideration of the environmental consequences of a catastrophic accident or attack on an LNG tanker or the FSRU. These concerns are addressed below.

i. LNG Hazards

84. The Connecticut Commissioner and the Attorney General allege that the Commission's conclusion that the environmental consequences of a LNG leak are relatively minor because LNG will not explode, but only burn, is not supported. While they acknowledge that it is more likely that LNG will burn than explode, they assert that it is possible for volatilizing LNG from a leaking tanker or the FSRU to explode.[79] They allege that inexplicably the final EIS discusses only the possible impact zones for LNG fires despite the fact that the designated Hazard Zone 3, which assumes an unignited vapor cloud, can extend 4.7 miles from a tanker. They explain that at this point, if this cloud contacted an ignition source, it would catch fire and burn back to the source. For these reasons, they assert that a much greater zone around a grounded tanker can be at risk than was considered in the final EIS.

85. They also claim that while the FSRU will be 9 miles from shore and the planned tankers will normally sail some distance from the coastline, if the FRSU or a tanker is damaged in a storm, or is left adrift by terrorists, then any coastline community is

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[79] *Citing* U.S. Government Accountability Office (GAO) Report, *Maritime Security: Public Safety Consequences of a Terrorist Attack on a Tanker Carrying Liquefied Natural Gas Need Clarification*, at 1 (2007).

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threatened. They state that a planned attack and seizure of a tanker that is then driven into New Haven harbor or Bridgeport, could easily threaten tens of thousands of people.

Commission Response

86. As discussed in section 3.10.1 of the final EIS (p. 3-256), as a liquid, LNG will neither burn nor explode. There is also no evidence, as the parties suggest, that methane-air mixtures will detonate in unconfined open areas. Detonation of an unconfined natural gas cloud is extremely difficult to achieve and is generally considered by scientists and researchers to be very unlikely to occur during an LNG spill. Consequently, the final EIS finds that the primary hazards to the public from an LNG spill either on land or water would be from dispersion of the flammable vapors or from radiant heat generated by a pool fire.

87. In order to assess the suitability of the project waterway for LNG carrier traffic, the Coast Guard established hazard zones associated with a large release of LNG. (*See* section 3.10.4.3 of the final EIS, p. 3-285). Neither Hazard Zone 1 nor Hazard Zone 2 would extend to land from the expected LNG transit route. Hazard Zone 3 could extend to land along some portions of the proposed transit route. (S*ee* section 3.10.4.4 of the final EIS, p. 3-287).

88. Contrary to the parties' assertions, the final EIS includes an analysis of the impacts of a flammable vapor cloud encountering an ignition source in Hazard Zone 3. As explained in section 3.10.1 of the final EIS, an LNG vapor cloud is unlikely to explode in the open atmosphere, but it can burn provided that the necessary combination of air and natural gas is present along with an ignition source. In the event there was no ignition source within Hazard Zone 2 and the gas was not dispersed by prevailing conditions, the flammable vapor cloud could extend into Hazard Zone 3. For Hazard Zone 3 to develop, there must be no potential ignition sources associated with the catastrophic incident causing the release and no ignition source associated with the LNG carrier, support tugs, escort ships, or any other marine vessels within 1.2 miles of the release. At the first encounter with an ignition source, the vapor cloud would burn back to the source.

89. Under various scenarios, Hazard Zone 3 could extend from 1.2 to 4.3 miles from the release site and the exact extent would depend on release size and rate, meteorological conditions, and the location of an ignition source. For a release from the FSRU, the extent of Hazard Zone 3 would occur above the open waters of Long Island Sound, and the outer edge of Hazard Zone 3 would be at least 4 miles from the closest shore. Ignition of the vapor cloud could impact resources above the water surface as the vapor cloud within the flammable range burned from the ignition source back towards the release site. A vapor cloud fire would not be expected to have any substantial impact to water quality or underwater biological resources, but it could kill or injure biota on and

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above the water surface including birds, marine mammals, and federally and state-listed species. Similar to the pool fire in Hazard Zone 2, a fire associated with a vapor cloud in Hazard Zone 3 could also impact marine users due to the ignition of vessels resulting directly or indirectly in injury or death.

90. If a release from an LNG carrier occurred and the maximum size unignited vapor cloud formed, it could extend onshore in some areas until reaching an ignition source, most likely close to the shoreline, and burn back to the LNG source. This is substantiated by the GAO Report which stated that some experts polled indicated that such a cloud would not penetrate beyond the perimeter of a populated area because it would rapidly find a source of ignition.

91. However, we believe Hazard Zone 3 is theoretical because the scenarios that would cause a sufficiently large hole in the LNG carrier or FSRU that could result in a vapor cloud of this extent would require the use of explosives and an ignition source would be present to ignite the vaporized LNG and create an LNG pool fire. In this situation, there would not be a vapor cloud. Nevertheless, we incorporated information on potential impacts due to ignition of a vapor cloud within Hazard Zone 3 in the resource section throughout section 3 of the final EIS.

92. In section 3.10.4.4 of the final EIS (pp. 3-288-289), we considered the potential for an LNG carrier to experience a loss of steering, travel out of its intended transit route, and drift toward a shoreline. An LNG-related fire has historically never occurred during an LNG carrier transit. We found that the potential would appear to be related only to an intentional incident in which ignition of LNG occurred following an attack. Because LNG carriers have an approximate draft of 38 feet, the carrier would be grounded in the water once the water depth was shallower than 38 feet. Based on this draft, the carrier would never reach the shoreline and would be grounded no closer than 528 yards (0.3 mile) from the shoreline. In the highly unlikely event that an LNG carrier deviates from its proposed course, depending on the depth of water and the draft of the vessel, Hazard Zone 1 or Hazard Zone 2 could extend to land. Hazard Zone 3, which could extend to land along portions of the proposed transit route, also could extend to land if an LNG carrier deviates from its proposed transit route.

93. However, we found that several mitigating factors could reduce the actual size of the hazard zones. The offshore location of the proposed FSRU and LNG carrier transit routes are far removed from the shoreline. The proposed transit route varies from 1.4 to 9 miles from shore. There would be a short duration for any substantial LNG release from a ruptured tank and the duration of an associated fire would also be short. For a 250,000-m^3 capacity carrier, the calculated burn times would be no greater than 95 minutes. The LNG carrier, upon losing power, would drift (primarily due to tides and current) in the middle of the Long Island Sound; the drift time for the LNG carrier to

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head toward shore would vary based on environmental conditions. As a ruptured carrier drifted towards shore, it would release LNG cargo so that by the time it reached a grounding depth the dimensions of the hazard zones would decrease correspondingly.[80]

94. In addition, as addressed in section 8.4.1 of the WSR, the Coast Guard would require Broadwater to provide the appropriate number of tugs to escort LNG carriers and to assist in berthing and deberthing and to be present at the FSRU at all times there is an LNG carrier present. These tugs would be able to assist the FSRU if it detaches from the YMS or carriers that have lost power. In addition, Environmental Condition No. 65 requires that the FSRU include an adequate number of side shell bitts as well as at least two sets of emergency towing equipment in the event that tugs need to connect to the FSRU for towing assistance.

ii. Hazard Zones

95. As described in section 1.4 of the WSR, the Coast Guard established hazard zones associated with a large release of LNG based on several modeling studies. NYSDEC asserts that the final EIS does not adequately respond to the agency's comments concerning the modeling methodologies used. Specifically, the NYSDEC questions the use of average meteorological conditions, asserts that the final EIS does not adequately address the impact of the potential for increased hazard zones due any simultaneous breach of tanks at the carrier and FSRU, and states that the Commission summarily dismisses its comment that federal regulations requiring calculation of half of the Lower Flammable level (LFL) for the vapor cloud Zone 3 distance (*citing* 40 C.F.R. Part 193, Subpart B)[81] have not been followed.

Commission Response

96. We do not agree with the NYSDEC's assertion that the use of annual average meteorological conditions in estimating the hazard zones is not representative of the hourly or daily conditions which might exist during a potential accident. The Commission staff performed a sensitivity analysis on the marine spill model by varying

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[80] In addition, section 3.10.5 of the final EIS addressed the potential impacts to natural resources and the ecosystem along the LNG carrier route due to a release of LNG from an LNG carrier incident. The final EIS provides additional information within each resource section (sections 3.1.2.2, 3.2.3.2, 3.3.1.2, 3.3.2.1, 3.3.4.2, 3.3.5.2, 3.4.1.5, 3.5.8, 3.6.9, 3.7.1.4, 3.8.6, 3.9.1.2, and 3.9.2.2) on potential impacts associated with the transit of LNG carriers including LNG releases.

[81] The correct citation is 49 C.F.R. Part 193

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meteorological conditions and found that distances to the radiant heat levels changed by approximately 1 percent. Therefore, we believe that the analysis presented in the final EIS adequately represents conditions during which an incident might occur.

97. As discussed in the final EIS, the scenario involving the potential for increased hazard zones due to a simultaneous breach of an LNG carrier moored at the FSRU is highly unlikely. Nevertheless, Commission staff performed modeling to estimate the equivalent zones. The results indicate that hazard areas from this larger spill would not extend more than 20 to 30 percent of the hazard zones discussed in the final EIS and the WSR. Due to the remote location of the FSRU, this increase of the thermal hazard zones would not create additional public impacts beyond those considered in the final EIS and the WSR.

98. As the FSRU would be located in navigable waters and LNG carriers are under the jurisdiction of the Coast Guard, the facility and carriers would not be subject to the regulations in 49 C.F.R. Part 193 (*see* 49 C.F.R. § 193.2001(b)(4)). During its assessment of the suitability of the waterway, the Coast Guard relied on simulations conducted by the Commission staff using the DEGADIS model, the Sandia National Laboratory's report *Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill over Water* (SAND2004-6258), and modeling conducted by Det Norske Veritas (DNV). Based on these studies, the Coast Guard established three hazard zones to develop the operating restrictions for LNG vessel movements in the waterway. The outer limits of Zones 1 and 2 were based on radiant heat from a pool fire, while the outer boundary of Zone 3 was based on the maximum theoretical vapor cloud dispersion distance to the LFL from a breach in the FSRU or an LNG carrier.

99. Although not specifically applicable to the Broadwater project, the modeling regulations under 49 C.F.R. Part 193 specify use of half of LFL with DEGADIS to account for uncertainties in the model. One of the primary causes of uncertainty is the inability to model turbulence. Based on the final EIS' conclusion that minimal turbulent fluctuations would occur in this situation, the Commission staff's calculations for the Coast Guard used the LFL to determine the outer distance to Zone 3. Since then, the Commission staff has consulted with subject matter experts and recognizes that other model limitations exist that may warrant the use of concentrations lower than the LFL, which would yield longer dispersion distances for staff's calculations for the Coast Guard. However, the Coast Guard's selection of the outer boundary of Zone 3 was also based on the modeling done by Sandia National Laboratory and DNV. We find that the Coast Guard's use of multiple models as a basis for the selection of the Zone boundaries mitigates the uncertainties created by any one model, and that the appropriate hazard zones were considered in both the WSR and the final EIS.

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iii. Terrorism and Security Issues

100. The Connecticut Commissioner and the Attorney General claim that the Commission's response to a terrorist threat is insufficient. They complain that although the Commission recognizes terrorism as a real threat, the Commission responds that it cannot discuss it in the final EIS for reasons of national security. They also claim that the final EIS announces, without elaboration, that "FERC continues to coordinate with [federal] agencies – and specifically the Coast Guard – to address this issue."[82]

101. They assert that experts agree that energy infrastructure is a prime target of terrorists and the possibility of an accident in the crowded waters of the Sound is real. They complain that while the final EIS acknowledges that New York officials have published a report on terrorism that identified LNG shipping as a potential target, the Commission inappropriately discounts the threat, asserting that other ships carrying ammonium nitrate or fuel "would be more attractive targets of terrorist activity."[83] They claim that the March 20 Order directly contradicts the considered opinion of federal experts that shows that both maritime activities and energy infrastructure remain important terrorist targets.[84] They also state that the GAO Report lists six terrorist attacks on tankers and energy infrastructure between October, 2002, and February, 2006,[85] and noted "the expressed desire by terrorists to target U.S. economic interests, and the potential outcome of a terrorist attack on a tanker have lead Congress and the Administration to conclude that protective efforts are warranted."[86] However, they also claim that the GAO Report found that the Coast Guard has "insufficient resources" and "has not developed plans for shifting resources among units."[87]

102. As a result, they maintain that there is a real possibility of an attack or accident resulting in massive environmental consequences that the final EIS fails to consider

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[82] C*iting* final EIS, p. 3-301.

[83] *Id.*, p. 3-302

[84] *Citing* GAO Report, at 1; U.S. Department of Justice, Office of the Inspector General, T*he Federal Bureau of Investigation's Efforts to Protect the Nation's Seaports*, at ix (March 2006).

[85] GAO Report at 89.

[86] *Id.* at 8.

[87] *Id.* at 1.

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adequately, a danger they state is made obvious by the fact that weeks before the Commission issued the March 20 Order, a 933-foot LNG tanker lost power apparently due to a computer malfunction and drifted helplessly in high winds and waves off Boston, Massachusetts.[88] For theses reasons, they conclude that the Commission is factually wrong to claim that the risk of terrorism is too low to require full open analysis.

103. The New York Towns also argue that the Commission underestimates the threat of explosion or terrorism, especially in light of the GAO Report that warns that maritime activities and energy infrastructure are important terrorist targets.[89]

Commission Response

104. Safety and security are important considerations in any Commission action. The attacks of September 11, 2001, have changed the way pipeline operators as well as regulators must consider terrorism, both in approving new projects and in operating existing facilities. However, the likelihood of future acts of terrorism or sabotage occurring at the proposed LNG import terminal, or at any of the myriad natural gas pipeline or energy facilities throughout the U.S. is unpredictable given the disparate motives and abilities of terrorist groups. The continuing need to construct facilities to support the future natural gas pipeline infrastructure is not diminished by the threat of any such unpredictable acts.

105. The potential risks associated with the proposed project, including the threat of terrorist attack, were assessed by the Coast Guard with input from a subcommittee of the Area Maritime Security Committee. The methods used in that assessment are described in section 5 of the WSR. The results are Sensitive Security Information (SSI) and not available to the public.

106. Section 3.10.4.3 of the final EIS (p. 3-280), addresses a deliberate attack on an LNG carrier by a terrorist group. In addition, several terrorist attack scenarios were addressed in section 5 of the WSR. The WSR concludes that, with specific mitigation measures in place, the risks of operation of the FSRU and the associated LNG carriers could be managed. Condition No. 86 in the March 20 Order requires that Broadwater comply with all requirements set forth by the Coast Guard Captain of the Port which includes all risk mitigation measures as set forth in the WSR. Further, as stated in

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[88] *Citing* Boston Herald, *LNG Tanker Adrift off Cape Raises Concerns (*Feb.12, 2008).

[89] *Citing* GAO Report at 1 and 8.

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section 8.4.2 of the WSR (Appendix C, p. 164), if the Broadwater proposal is approved by the Commission, the Coast Guard will continue to systematically analyze the waters of Block Island Sound and Long Island Sound to effectively manage the potential risks to navigation safety and maritime security associated with the project.

107. As described in section 8.4 of the WSR, if the Commission provides Broadwater with initial authorization for the project, the Coast Guard would prepare a proposal to obtain additional personnel and equipment to implement its safety and security recommendations. If the needed resources are not available and properly funded, however, the Commission and the Coast Guard would not allow the project to go into operation.

108. As noted by the Connecticut Commissioner and the Attorney General**,** in addition to the general security enhancement actions taken by the Commission and the Coast Guard, the New York State Office of Homeland Security issued a report entitled *Focus Report: Maritime Terrorist Threat* on February 21, 2006. The report considered threats to ports and waterways, and although it did not specifically address the Broadwater Project, it included a general discussion of LNG facilities and LNG carriers. As described in the final EIS (p. 3-302), while the report identified LNG shipping, loading, and offloading as "significant" terrorist targets, it also stated that a "considerable body of evidence suggests that liquefied petroleum gas (LPG) and liquefied natural gas (LNG) carriers, while potentially dangerous in the hands of terrorists, may be considerably more difficult to 'weaponize' than other big ships that carry crude oil, especially fuel and other heavy oils, toxic chemicals, and ammonium nitrate." This statement supports our assertion in the final EIS that existing vessels and cargoes that transit Long Island Sound would be more attractive targets for terrorist activity.

109. As noted by the parties, on February 11, 2008, a 933-foot LNG tanker, Catalunya Spirit, became disabled off the coast of Boston around 3 a.m. According to the Coast Guard, the loss of propulsion was reported by 6:30 a.m. on February 11.[90] The Coast Guard immediately deployed tug vessels which took control at 10:00 p.m. on February 11. Upon receiving the call, a Coast Guard helicopter air lifted technicians, surveyors, and response personnel to the Catalunya Spirit for inspection and investigation. During the time that the Catalunya Spirit had no propulsion but the tug had not taken over, the vessel drifted towards the southeast and away from the U.S. coastline.

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[90] United States Coast Guard, *LNGC Catalunya Spirit Loss of Propulsion of the Massachusetts Coast* (Feb. 11, 2008), available online at: http://www.uscg.mil/d1/response/rrt/rt1Presentations/March2008/CAT%20SPIRIT%20-%20RRT.ppt.

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Since the vessel was in open seas and drifting away from the shoreline, the incident posed no risk to public safety.

iv. LNG Carrier Accidental Grounding, Sinking, or Fire

110. The Connecticut Commissioner and the Attorney General also claim that the Commission errs by ignoring the impacts of a LNG carrier accidental grounding, sinking, or fire. They fault the final EIS for assuming that 48 years of LNG carrier operations without a major release of cargo is proof that nothing can go wrong. They state that LNG tanker accidents have occurred repeatedly, as detailed in the final EIS.[91] In addition to those noted in the final EIS, they state that on January 8, 2007, a nuclear-powered attack submarine, the U.S.S. Newport News, collided with the Japanese supertanker Mogamigawa in the Straits of Hormuz, a 34-mile wide body of water considerably wider than Long Island Sound.[92] They also refer to the incident involving the Catulunya Spirit, the 933-foot LNG tanker that became disabled off the port of Boston. They state that the Coast Guard WSR itself explicitly states that "[c]ollisions involving LNG carriers in The Race, Block Island Sound and Eastern Long Island Sound, areas that are part of the thoroughfare used by vessels transiting Block Island Sound and Long Island Sound, account for the majority of the potential navigation safety risk associated with the Broadwater Energy proposal."[93] For these reasons, the Connecticut Commissioner and the Attorney General disagree with the final EIS' conclusion that "because of the implementation of safety and security measures during marine transit, the likelihood of a marine LNG spill is extremely remote."[94]

Commission Response

111. Although no type of marine transport can be completely safe, we noted in the final EIS that no catastrophic incidents have been associated with LNG carriers (section 3.10.4). Throughout the history of LNG transport by marine carriers, there has never been a loss of LNG cargo as a result of accidental incidents. There have been LNG leaks on LNG carriers due to valve failures. One such leak resulted in a death onboard.

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[91] The Commissioner and Attorney General reference accidents occurring in 1965, 1979, 1980, 1985, 1989, 2001, 2002, 2004, and 2006.

[92] *Citing* Associated Press, *Japan Seeks Probe of Ship Collision* (Jan. 10, 2007).

[93] *Citing* WSR at 123.

[94] *Citing* Final EIS, section 3.10.4.3, p. 3-286.

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Another leak resulted in fracture of deck plates. Some of the affected vessels needed to undergo repairs.

112. The final EIS (p. ES-10) concludes that the types of events most likely to cause a significant release of LNG are ship casualties, such as collisions, allisions, or groundings and evaluates the potential consequences. To cause a release of LNG, such an incident would require sufficient force to breach the LNG ship's double hull and cargo tanks. During the approximately 44,000 voyages that have been completed since the inception of LNG maritime transportation, only 10 substantial incidents have involved LNG ships, and none of those incidents resulted in the release of LNG due to ruptured cargo tanks. Accidental groundings, collisions with small vessels, and low-speed collisions with large vessels could cause minor ship damage but would not result in a cargo spill due to the protection provided by the double-hull structure, the insulation layer, and the primary cargo tank of an LNG vessel. Thus, we do not believe that these types of accidents would result in significant environmental impacts.

113. Moreover as explained above, the Coast Guard has assessed potential risks to navigation associated with operation of the proposed project in the WSR. As explained in section 3.10.4.5 of the final EIS, based on its assessment, the Coast Guard has made the preliminary determination that, to make the waters of Block Island Sound and Long Island Sound suitable for LNG carrier traffic and operation of the FSRU, additional measures would be necessary to responsibly manage the potential risks to navigation safety and maritime security associated with Broadwater's proposal. As noted previously, on June 25, 2008, the Coast Guard issued a Letter of Recommendation stating that the waterway is not currently suitable, but can be made suitable for LNG marine traffic if the risk mitigation measures detailed in section 8.4.1 of the WSR are implemented.

114. In addition, the Coast Guard would require Broadwater to provide the appropriate number of tugs to escort LNG carriers and to assist in berthing and deberthing and to be present at the FSRU at all times there is an LNG carrier present. These tugs would be able to assist carriers that have lost power. (S*ee* section 8.4.1 of the WSR).

v. <u>Anchor Strikes</u>

115. The Connecticut Commissioner and the Attorney General claim that the final EIS contains no meaningful analysis of the risk of anchor strikes on the pipeline from any of the numerous commercial and larger recreational boats that use the Sound. They note that the final EIS inadequately responds to these concerns by stating that: (1) the pipeline will be remotely monitored and valves will shut off flow into the system in the event of a breach; and (2) that the pipeline will meet all codes and would be coated with approximately 3 inches of concrete coating for buoyancy control that would provide

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protection against anchor strikes. However, they conclude that the record provides no support for the assertion that the concrete coating would in fact provide any meaningful protection.

116. The Connecticut Commissioner and the Attorney General point out that the Connecticut Light & Power Company has an electric cable system that crosses the Sound that has suffered more than 50 anchor strikes severing one or more cables over 30 years. They assert that an anchor from a large vessel can easily sink through many feet of sediment into the seabed.[95] They argue that the potential for repeated anchor strikes over the planned thirty-year service period of this system cannot be overlooked, yet the final EIS essentially ignores this important and dangerous issue.

117. They also maintain that hitting a natural gas pipeline with an anchor brings more serious results than severing a cable. They refer to a spud anchor dropped from the Dave Blackburn on October 23, 1996, in Tiger Pass, Louisiana, that struck a 12-inch underwater natural gas pipeline owned by Tennessee Gas Pipeline Company (Tennessee). They explain that the natural gas ignited and the resulting fire destroyed the dredge and the tug. They state that the National Transportation Safety Board report concluded, "[a]s shown by other fatal accidents investigated by the Safety Board that involved damage to pipelines traversing navigable waterways, underwater pipelines represent a risk for both recreational and commercial vessels.[96]

118. The Connecticut Commissioner and the Attorney General also allege that the final EIS is silent as to the environmental consequences of an anchor strike or other breach of the proposed pipeline. They state that two major accidental releases of natural gas in the Sea of Azov in 1982 and 1985 "drastically disturbed the composition and biomass of the water fauna and caused mass mortality of many organisms, including fish and benthic mollusks."[97] They conclude that despite the established commercial and environmental importance of Connecticut's seafood industry, the final EIS contains no mention of the potential impacts of an undersea pipeline rupture on marine resources.

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[95] *Citing* Comments of the Attorney General, January 22, 2007, at 18; Decision of the Department of Environmental Protection, Islander East Application for Water Quality Certificate, released December 19, 2006, at 43.

[96] National Transportation Safety Board, Safety Recommendation, P-98-26 and -27, October 16, 1998, at 3.

[97] S. Patin, *Natural Gas in the Marine Environment*, based on Environmental Impact of the Offshore Oil and Gas Industry, at 3, translated by Elena Cascio.

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Commission Response

119. Section 3.1.2.2 and section 3.10.9.3 of the final EIS address potential anchor strikes. As explained in these sections, the pipeline would be designed to meet all applicable codes and standards required by the U.S. Department of Transportation (49 C.F.R. Part 192). The pipeline would be buried under 3 to 5 feet of sediment. The pipeline's location would be depicted on future navigational charts and in marine regulations to discourage vessels from anchoring within a corridor along the pipeline route. In addition, a 3-inch-thick layer of steel-reinforced concrete would provide further protection from anchor strikes, and Broadwater would augment the pipeline protection design by using one or more of the following: a thicker pipe wall, thicker concrete coating, rock armor, or concrete slabs. Further, the pipeline would be located in waters generally 90 feet deep or greater, except at the Stratford Shoal crossing where water depth is reduced to approximately 60 feet and it is not likely that this portion of the Sound would be used more than occasionally for anchoring, if at all. (S*ee* Appendix N (Response to Comments) Item SE3-34 (p. N-167). Based on these factors, we conclude that the risk of anchor strikes on the proposed pipeline is minimal.

120. Section 3.11.2.1 of the final EIS (p. 3-317) describes the cable line (1385 Cable Line) constructed in 1969 by CP&L that traverses Long Island. The 1385 Cable Line system initially was installed using two construction methods. In shallow nearshore waters (outside the Broadwater Project area), the cables were installed in a dredged trench that subsequently was backfilled with concrete, rock, or other fill. Within the project area, the cables were laid directly on the seafloor and later were covered with fill material. These fill activities did not completely cover the cable; consequently, the 1385 Cable is exposed in many places (TFOLIS 2003).[98] Since 1970, third-party damage to "exposed portions" of the 1385 Cable has resulted in the release of alkylbenzene on 55 separate occasions (TFOLIS 2003). We do not believe that damage to these exposed cables from anchor strikes is representative of the potential for damage to the proposed buried pipeline from anchor strikes. It is also worth noting that the Iroquois pipeline was constructed roughly perpendicular to prevailing ship traffic in 1991. It extends from Devon, Connecticut to Northport, Long Island and in 17 years has not incurred notable anchor damage.

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[98] Task Force on Long Island Sound (TFOLIS), *Comprehensive Assessment and Report Part II: Environmental Resources and Energy Infrastructure of Long Island Sound*, Willimantic, CT (2003), available online at http://www.easternct.edu/depts/sustainenergy/taskForceWorkingGroup/AssessmentReport2.pdf.

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121. The Tiger Pass Louisiana Gas pipeline rupture, referred to by the parties, involved a gas pipeline with a top of pipe elevation that was about 22 feet below the surface of the water (Appendix N (Response to Comments) Item SE3-34 (page N-167)). The incident primarily occurred because the crew of the vessel believed that the pipeline was farther away from the location where they lowered their dredging equipment. In contrast, as described in the final EIS, the pipeline from the FSRU to the Iroquois pipeline would be marked on navigation charts and would be located in waters generally 90 feet deep or greater, except at the Stratford Shoal crossing where water depth is reduced to approximately 60 feet. The proposed pipeline does not cross any areas where dredging is required to maintain waterway depth, and it is not likely that this portion of the Sound would be used more than occasionally for anchoring, if at all.

122. The Connecticut Commissioner and the Attorney General also incorrectly allege that the final EIS is silent as to the environmental consequences of an anchor strike or other breach of the proposed pipeline. We found that based on the chemical properties of natural gas, the gas bubbles would rise immediately to the surface and dissipate, and any impact to marine resources would be negligible. (Appendix N (Response to Comments) Item SE3-47, p. N-177).

123. Further, we note that the Sea of Azov incidences referred to by the parties consisted of ". . . long-term releases of large amounts of natural gas into the water accompanied by self-inflaming of the gas."[99] It is unlikely that a potential rupture of the proposed pipeline in Long Island Sound would cause a similar long-term release of natural gas since it is expected that emergency shutdown equipment required for the Broadwater Project would be activated quickly and therefore prevent a long-term release of natural gas.

b. Pipeline Installation Impact and Recovery

124. The Connecticut Commissioner and the Attorney General state that Broadwater has not supplied adequate data to support the conclusions that the proposed Broadwater Project would impact 262.8 acres or 2,234.7 acres depending on whether mid-line buoys were utilized. For example, they state that the final EIS acknowledges that Broadwater did not provide information regarding coral and sponge communities in the Stratford Shoal area and that the Commission's sole data source was an EPA report. Thus, they

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[99] *Citing* S. Patin, *Natural Gas in the Marine Environment*, based on Environmental Impact of the Offshore Oil and Gas Industry, p. 3, translated by Elena Cascio.

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assert that the Commission's conclusion that installation impacts to existing communities will be minimal is unsupported.

125. The Connecticut Commissioner and the Attorney General also complain that the final EIS does not state the duration of time needed for the pipeline trench to recover but suggests that if backfilling is employed the recovery would be faster than the 1 to 10 years that is normally the case. The Connecticut Commissioner and the Attorney General disagree with these numbers asserting that the March 20 Order contains no substantive basis for concluding that the pipeline corridor could be restored using any proposed methodology.

126. The Connecticut Commissioner and the Attorney General also state that the final EIS produced by the Commission for the Islander East Pipeline Project fully acknowledges that natural gas pipeline installation causes permanent "long-term conversion of shellfish habitat" and asserts that damage caused by installation of the Iroquois pipeline is still persistent and is long-lasting. They also refer to this project's final EIS' discussion of the Eastchester Expansion project where post-construction monitoring has shown that attempts to mechanically backfill the trench were not successful and that natural backfilling of the trench had not substantially occurred along most of the pipeline route.[100] They conclude that the final EIS is devoid of a single scientific study of expert conclusion that a pipeline trench can ever return to its preconstruction state. Rather, they maintain that once the seafloor of the sound is damaged by anchor scars and pipeline trenches, it never returns to its natural state and the marine resources in the trench area suffer for decades.

127. The Connecticut Commissioner claims that the Commission's conclusion that the plow is the best method to install the pipeline and backfill the trench is inadequate. She complains that little detail was provided regarding the projects that were evaluated and formed the basis of the Commission's conclusion. According to the Connecticut Commissioner, post installation surveys from Hubline and Northeast Gateway could provide valuable information but were not reviewed in the final EIS. Similarly, she argues that the discussion of the Iroquois pipeline was unconvincing because, among other things, no documentation of post-installation surveys was provided. She also criticize the final EIS' reliance on the National Oceanographic and Atmospheric Administration's (NOAA) recommendation that the plow is the technology for reducing damage to the seafloor because she claims that the NOAA document did not contain support for NOAA's conclusion.

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[100] *Citing* final EIS, p. 3-71.

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128. The NYSDEC asserts that the final EIS contains conflicting statements regarding pipeline backfill. The agency states that section 5.1.1 recommends that Broadwater develop plans to actively backfill the entire length of the pipeline trench while recommendation 16 in section 5.2 directs Broadwater to develop a plan to identify the conditions under which backfilling would be required. They also complain that the use of mid-line buoys to reduce anchor scars is not required in the March 20 Order.

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129. Section 3.1.2.2 of the final EIS discusses potential impacts to the seafloor during construction activities including installation of the pipeline. Commission staff commissioned an assessment of Broadwater's anchoring impact estimates by external technical experts who worked on the Gulfstream Pipeline Project (CP00-6-000). The expert assessment (Jaap and Watkins 2007)[101] consisted of using the specific pipeline installation plans for the Broadwater Project and the environmental setting of Long Island Sound to develop expected seafloor acreages based on the technical findings from the Gulfstream post-construction monitoring of the seafloor (using divers and a remotely operated vehicle). As summarized in Appendix G to the final EIS, Jaap and Watkins (2007) estimated that, if mid-line buoys were used on all eight anchor cables (rather than the four anchor lines as proposed by Broadwater), expected cable sweep impacts would total approximately 32 acres (a 98-percent reduction in the seafloor impacts relative to Broadwater's estimates). Based on this assessment, the final EIS concluded that the total seafloor impacts for construction of the Broadwater Project, including pipe laying, trenching, utility crossings, ties-ins, YMS installation, anchoring, and cable sweep, would be approximately 263.6 acres using mid-line buoys on all anchor cables compared to the 2,235.5 acres of seafloor disturbance proposed by Broadwater. Based on this study, the March 20 Order (Environmental Condition No. 13) required Broadwater to file revised construction plans that either use the use of mid-line buoys on all anchor cables or alternatively use a dynamically positioned lay barge.[102]

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[101] Jaap, W.C. and E. Watkins, *Broadwater LNG Gas Pipeline Project: Evaluating Pipe Laying Alternatives and Environmental Consequences* (June 4, 2007) (Appendix G to the final EIS).

[102] A dynamically positioned lay barged would eliminate all anchoring impacts associated with a conventional lay barge, including anchor cable sweep and the footprints of the anchors themselves. However, Broadwater had indicated that the use of a dynamically positioned lay barge may not be feasible or effective. Final EIS, p. 3-31.

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130. Commission staff conducted extensive research to locate available reports regarding coral communities within Long Island Sound, and found little available information with the exception of the EPA 2007,[103] Grace 2006, [104] and Auster 2007.[105] As addressed in the final EIS (p. 3-66) the purpose of the EPA 2007 OSV Bold Survey Report was to determine the influence of pipelines and other natural bottom features on significant benthic habitats, using side-scan sonar and video imaging. Although the survey conducted side-scan sonar, video, and sediment and water quality sampling, the report did not provide the data or a quantitative analysis of the side-scan sonar survey, video survey, sediment sampling, or water quality sampling. It did provide anecdotal observations on the benthic habitat and photographs of some of the areas surveyed.

131. The report identified that finger sponge and northern star coral were observed on the crest of Stratford Shoal in the vicinity of the proposed Broadwater pipeline route. Although the distribution and relative abundance of these species were not reported, it is expected that the communities consist of a scattering of individuals based on the existing information on these species. There is no evidence to suggest that these scattered individuals would be considered a "special aquatic site" (*see* section 3.3.1.2 of the final EIS). Grace (2006) indicates that northern star coral are very hardy and are plentiful in Long Island Sound.

132. The communities of northern star coral and dead man's fingers located along the proposed pipeline route across Stratford Shoal would be impacted by construction of the proposed pipeline. However, impacts would be expected to be minimal because benthic disturbance to Stratford Shoal would occur at one of the narrowest points of Stratford Shoal and would extend for less than 1 mile. In addition, because northern star coral is

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[103] U.S. Environmental Protection Agency (EPA) (2007a), OSV Bold Survey Report, *Benthic Habitat Characterization of the Stratford Shoal Region of Long Island Sound*. May 29 to June 2, 2007. Final Report July 17, 2007.

[104] Grace, S. P., *The Skeletons of Long Island Sound* (February 2006), available online at http://www.southernct.edu/faculty/paffairs/news/?file=view.php&id=679.

[105] *See* Appendix N (p. N-106*7*) Summary of Technical Comments on the Draft Environmental Impact Statement for the Broadwater LNG Project Provided in the January 16, 2007 Connecticut meeting. Dr. Ralph Lewis, Dr. Roman Zajak, and Dr. Peter Auster provided comments to the Connecticut LNG Task Force on December 7, 2006, shortly after the draft EIS was publicly released. Commission representatives met with these experts on January 16, 2007, to discuss their specific concerns. Dr. Auster verbally identified the presence of corals and is referenced as Auster 2007.

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plentiful within the Sound, it would be expected that adjacent communities not impacted by construction would aid in reestablishing populations in the disturbed area through natural recruitment (*see* section 3.3.1.2 of the final EIS).

133. Contrary to the parties' assertions, the final EIS provided a comprehensive review of pertinent literature on seafloor recovery including available information for Long Island Sound. Section 3.3.1.2 of the final EIS contains a summary of several different scientific articles regarding benthic recovery rates (Desprez 2000,[106] Kenny and Rees 1994,[107] 1996,[108] Newell, et al. 1998,[109] 2002,[110] 2004,[111] Lewis, et al. 2002[112]). The reports examined by the Commission show that benthic communities in mud habitats like

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[106] Desprez, M., *Physical and Biological Impact of Marine Aggregate Extraction along the French Coast of the Eastern English Channel. Short- and Long-term Post-dredging Restoration,* ICES Journal of Marine Science 57:1428-1438 (2000).

[107] Kenny, A.J. and Rees, H.L., *The Effects of Marine Gravel Extraction on the Macrobenthos: Early Post-dredging Recolonization,* Marine Pollution Bulletin 28(7):442-447 (1994).

[108] Kenny, A.J. and Rees, H.L., *The Effects of Marine Gravel Extraction on the Macrobenthos: Results 2 Years Post- Dredging,* Marine Pollution Bulletin 32(8/9): 615-622 (1996).

[109] Newell, R. C., L. J. Seiderer, and D. R. Hitchcock, *The Impact of Dredging Works in Coastal Waters: a Review of Sensitivity to Disturbance and Subsequent Recovery of Biological Resources on the Seabed,* Oceanography and Marine Biology: an Annual Review 36:127-178 (1998).

[110] Newell, R.C., Seiderer, L.J., Simpson, N.M., and Robinson, J.E., *Impact of Marine Aggregate Dredging and Overboard Screening on Benthic Biological Resources in the Central North Sea: Production License Area 408, Coal Pit,* Marine Ecological Surveys Limited, Technical Report No ER1/4/02 to the British Marine Aggregate Producers Association (2002).

[111] Newell, R.C., Seiderer, L.J., Simpson, N.M., and Robinson, J.E., *Impacts of Marine Aggregate Dredging on Benthic Macrofauna off the South Coast of the United Kingdom,* Journal of Coastal Research 20(1):115-125 (2004).

[112] Lewis, L.J., J. Davenport, T.C. Kelly, *A Study of the Impact of a Pipeline Construction on Estuarine Benthic Invertebrate Communities,* Estuarine, Coastal and Shelf Science 55:213-221 (2002).

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those along most of the proposed pipeline route typically recover within 1 year and communities that inhabit sands and gravel typically recover in 2 to 3 years (Newell, et al. 1998). In addition, the final EIS described previous benthic recovery from several pipeline and transmission cable projects located within Long Island Sound (including Cross Sound Cable, Iroquois Pipeline, and the Eastchester Pipeline).

134. The Connecticut Commissioner's and Attorney General's assertion that there has not been an instance in which benthic habitat has been fully restored after pipeline installation and therefore Broadwater would not be successful is contradicted by the record. As stated in the final EIS (section 3.3.1.2, pp. 3-70-71), post-construction monitoring for the Cross Sound Cable across Long Island Sound conducted within 6 months after construction found that the benthic habitat in the offshore waters along the cable route was not discernibly different from benthic habitats outside of the cable route (OSI 2003).[113] Although the cable installation was conducted using different methods than proposed for the Broadwater Project, the cable generally was installed to a depth of 6 feet beneath the seafloor. As discussed in the final EIS (section 3.3.1.2), post-construction monitoring would be conducted by Broadwater to ensure that agency-approved success criteria are met.

135. We also disagree with the Connecticut Commissioner's claim that the Commission's conclusion that the plow is the best method to install the pipeline and backfill the trench is inadequate. While we considered NOAA's technical recommendation to use the subsea plow in order to reduce damage to the seafloor and recovery time, we independently evaluated various alternative pipeline construction techniques such as the use of a dynamically positioned lay barge, post-lay jetting, and pre-lay trenching (section 4.6 of the final EIS). We determined that none of the alternative construction techniques would be environmentally preferable, and some of them would substantially increase the acreage of seafloor impacts relative to the proposed subsea plow. It is expected that a sled or plow would be used to mechanically backfill the trench from the spoil piles and the success of backfilling activities in covering the pipeline would be subjected to monitoring and remediation, if appropriate.

136. We also evaluated post-construction monitoring reports from similar recent projects in Long Island Sound and Boston Harbor to assess the potential success of the plowing and backfilling methods. We reviewed the Eastchester Expansion Project, Cross Sound Cable, the HubLine Pipeline Project, Iroquois pipeline, and the Northeast Gateway pipeline. We reviewed all available information on post-installation surveys for the

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[113] Ocean Surveys, Inc. (OSI), *Six-month Post-installation Benthic Monitoring Survey for the Cross Sound Cable Project*, Old Saybrook, CT (2003).

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HubLine and Northeast Gateway projects. (*See* sections 3.1.2.2 and 3.3.1.2 of the final EIS).

137. Post-installation survey results for the Iroquois pipeline are explicitly discussed in sections 3.1.2.2, 3.3.1.1 and 3.3.1.2 of the final EIS based on available literature for surveys conducted between 1993 and 2007 (TFOLIS 2003, EPA 2007a). In general, these surveys found that there were continuing seafloor impacts in nearshore oyster beds where dredging was conducted, but virtually no evidence of lingering impacts in offshore waters where a subsea plow or jetting was used. The EPA 2007 OSV Bold Survey Report states that the authors confirmed the location of the pipeline using a characteristic reflectance pattern in the side-scan sonar record, but were unable to visually differentiate the Iroquois pipeline from undisturbed areas using the video record (s*ee s*ection 3.3.1.1 of the final EIS, p. 3-66).

138. The Islander East Pipeline Project final EIS states:

> [r]ecovery of shellfish resources would depend on the rate of natural sedimentation to fill the scar. Once the [anchor] scar was filled and the sediment provided adequate habitat shellfish could be expected to take 3 to 5 years to reach marketable size. However, if the anchor pits did not refill adequately, they might persist as depressions, accumulate fine grained materials and organics, develop poor water quality and different benthic communities than the original, and would not be suitable shellfish habitat. This would represent a long-term conversion of shellfish habitat.[114]

While the Islander East Pipeline Project final EIS recognized that a long-term conversion was possible under certain circumstances, it did not predict long-term conversion of all shellfish habitat under all circumstances. More importantly, a comparison between the recovery potential for the two pipelines is not appropriate because the Broadwater Project would not cross any areas containing oyster beds. Long Island's commercial fisheries include hard clams, Eastern oysters, American lobster, and finfish. Only the latter two are present at or near the proposed offshore locations of project facilities. (Section 3.6.8.1 of the final EIS, p. 168). Because the proposed pipeline would not traverse oyster habitat and a different construction technique would be used by Broadwater than was proposed for the Islander East Project, we see no technical support for the impact comparison asserted by the Connecticut Commissioner and the Attorney General.

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[114] Islander East final EIS, p. 371 (Docket Nos. CP01-383-000 and CP01-387-000).

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139. Section 5.1.1 of the final EIS states "we are recommending that Broadwater develop plans in coordination with appropriate federal and state resource agencies to actively backfill the entire length of the pipeline trench and to conduct post-construction monitoring." Recommendation 16 requires that Broadwater file plans describing methods to mechanically backfill the trench with the excavated spoil material in a manner that successfully results in the excavated material being returned to the trench following installation. The recommendation further requires that the plan be developed in coordination with COE, EPA, and NMFS to identify the conditions under which backfilling would be required, the appropriate methods for backfilling, and detailed post-construction monitoring criteria. The language does not direct an outcome other than the development of a plan to mechanically backfill the trench. The recommendation does, however, allow the COE, EPA, and NMFS to exercise the agencies' professional judgment in developing specific protocols for the backfilling. We do not agree that a conflict exists in either the wording or intent of the language in the final EIS.

c. State Listed Species Pursuant to the Connecticut Endangered Species Act

140. The Connecticut Commissioner contends that the final EIS' discussion of Connecticut-listed endangered and threatened species remains inadequate and insufficient to justify a conclusion as to the minimal impact of the project on such species. For instance, she notes that section 3.4.1.3 of the final EIS states that Atlantic sturgeon, a threatened species, are "rarely found in the Sound" and "theoretically could be present as transients in the proposed project Area." Although seemingly agreeing that Atlantic sturgeon are relatively rare in the Sound, the Connecticut Commissioner suggests that the Connecticut Department of Environmental Protection's (CTDEP) Long Island Sound Trawl Survey (Trawl Survey), directed sampling, and stomach analysis of specimens suggest that sturgeon are likely to be in the project area for some period of time and using it for some purpose (probably foraging). Based on this sampling, the Connecticut Commissioner states that she "is more confident that the [Trawl] Survey catches in the proposed project location indicates the area is important to sturgeon."[115]

141. In addition, the Connecticut Commissioner claims that the final EIS' discussion of impacts to two major nesting colonies (Falkner Island and Great Gull Island) of roseate terns, a federally and state listed endangered species, is inadequate in terms of strike hazards, increased travel time on feeding flights due to obstructions in their flight path, or alteration of foraging areas as a result of the Broadwater Project.

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[115] Connecticut Commissioner's Rehearing Request at 25.

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142. We affirm the final EIS' conclusion that the Atlantic sturgeon would not likely be affected by construction or operation of the Broadwater Project. As noted in section 3.4.1.3 of the final EIS (p. 3-122), the Atlantic sturgeon is not federally listed but is listed as protected by the State of New York. The Atlantic sturgeon was discussed in the final EIS at the request of NMFS due to the potential consideration for future listing, and the similarity with shortnose sturgeon (a federally listed threatened fish species) in its life history and transient occurrence in the project area. Section 3.4.1.3 of the final EIS further states that shortnose and Atlantic sturgeon are primarily found in the Hudson River (NYSDEC 2005).[116] Stone, et al. (1994)[117] is considered a primary source for information on distribution and relative abundance of Atlantic sturgeon in mid-Atlantic estuaries. Stone, et al. (1994) indicates that Atlantic sturgeon are rarely[118] found in Long Island Sound. Adults and juveniles are rarely present year round. Atlantic sturgeon eggs and larvae are also not present in Long Island Sound during the majority of the year; they are only found in May and June, and are rare during those months. In addition, sturgeon were not collected in the ichthyoplankton surveys analyzed as part of the final EIS including site-specific surveys and Long Island Sound-wide surveys.

143. Construction of the project would be limited to the fall, winter, and early spring (section 2.5 of the final EIS). In all likelihood, no construction would occur during May and June, the only months in which eggs and larvae would be expected to be present. Impacts to mobile lifestages would be negligible because the plow would move at approximately 1 to 3 miles per day and most mobile invertebrates and pelagic and demersal finfish would be expected to avoid contact with pipeline installation equipment. Regardless of the amount of Atlantic sturgeon in the project area, sturgeon are typically associated with the lower water column. Thus, there would be little likelihood of any potential impacts during operation of the project which includes the uptake of water from

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[116] New York State Department of Environmental Conservation (NYSDEC), *List of Endangered, Threatened, and Special Concern Fish and Wildlife Species of New York State* (August 30, 2005), available online at http://www.dec.state.ny.us/website/dfwmr/wildlife/endspec/etsclist.html.

[117] Stone, S. L., et al., *Distribution and Abundance of Fishes and Invertebrates in Mid-Atlantic Estuaries*, ELMR Rep. No. 12. NOAA/NOS Strategic Environmental Assessments Division, Silver Spring, Maryland (1994).

[118] Stone, et al. (1994) defines rare as "definitely present but not frequently encountered."

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the middle and upper stratas of the water column. Therefore, impacts on Atlantic sturgeon from construction or operation of the project would be minimal.

144. Similarly, we affirm our finding that that the proposed offshore barge facility would not likely adversely affect federally listed species including the roseate tern. As discussed in section 3.4 of the final EIS (p. 3-123), the height of the proposed FSRU and LNG carriers would be lower than the altitude of common waterfowl migration with the exception of the emergency flare stack on the FSRU, which would be at the lower range of common waterfowl migration altitudes. Thus, occasional collisions with the proposed FSRU and LNG carriers, if they did occur, would represent a negligible increase in the occurrence of avian mortalities. The U.S. Fish and Wildlife Service (FWS) is responsible for protection of federally listed avian species, including roseate terns. In a June 8, 2007 letter, FWS concurred with the Commission's determination. The final EIS also discussed potential impact to avian species through impacts to their prey species and concluded that impacts to avian species prey due to construction of the proposed project would not be significant (section 3.3.5.2 of the final EIS).

d. Effect of the Project on the Connecticut Department of Environmental Protection Long Island Sound Trawl Survey

145. According to the Connecticut Commissioner any adverse impacts to the CTDEP Long Island Sound Trawl Survey could create "a significant and permanent obstacle to the efforts of both States [Connecticut and New York] to manage living marine resources and protect the environment in the Sound."[119] The Connecticut Commissioner states that the security zone and the pipeline corridor will "significantly" impact the M4 sampling locations[120] for the Trawl Survey. The Connecticut Commissioner states that if the sites near the FSRU and along the pipeline are unavailable to the Trawl Survey, it is estimated that the combined loss to the Trawl Survey would be 46 percent of the M4 samples. According to the Connecticut Commissioner, the FSRU would affect 4 M4 sites and an additional 14 M4 sites along the pipeline corridor could be impacted due to "unsuccessful backfilling and/or the presence of cement mats in towpaths."[121]

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[119] Connecticut Commissioner's Rehearing Request at 26.

[120] The CTDEP statistical sampling within Long Island Sound uses sites that are assigned a stratum designated by depth interval and bottom type. The M4 sites are "deep mud" stratum (i.e. in depths greater than 90 feet with mud bottom).

[121] Connecticut Commissioner's Rehearing Request at 30.

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146. We do not agree that the security zone and the pipeline corridor will affect the ability of the CTDEP to conduct the Long Island Sound Trawl Survey. Review of the CTDEP trawl sampling grid indicates that the proposed YMS tower would be located in the southeastern corner of one of the M4 grids (less than 0.1 mile from the corner). As specifically stated in Appendix N (p. N-70), it is expected that CTDEP would be able to continue to sample within this grid, assuming that CTDEP satisfies the Coast Guard's safety requirements and receives permission from the Captain of the Port. It is doubtful that even removal of one of the 54 M4 grids would jeopardize CTDEP's ability to adequately sample the M4 stratum.

147. To minimize the potential for impacts of an open trench on the benthic habitat and associated biological resources, the March 20 Order includes a condition that requires Broadwater to file plans to mechanically backfill the trench with excavated material. The order also requires that backfilling plans and methodologies be developed in coordination with COE, EPA, and NMFS so as to minimize impacts. Based on this condition and the impact assessment contained in the final EIS, we do not believe that the presence of the pipeline would impact trawls along the pipeline corridor following pipeline installation and backfilling.

e. Impacts to Lobster and Flounder along the Pipeline Corridor

148. The Connecticut Commissioner expresses concerns about impacts to lobsters as a result of pipeline installation related activities. Although acknowledging improvements made in the final EIS to reduce the benthic impacts of cable sweep, she states that it appears that her recommendation in comments to the draft EIS to evaluate alternative routes to avoid the area with potentially high juvenile lobster abundance was not seriously evaluated. She then states that "[i]t is likely that the entire corridor is productive lobster habitat, and it can be expected that a large percentage of lobsters in the corridor will be killed."[122]

149. The Connecticut Commissioner also disagrees with the conclusion in the final EIS that impacts on lobster habitat in the Sound would be negligible on the basis that trenching would directly affect substantially less than 0.1 percent of the seafloor. She states that currently there is no quantification of how much lobster habitat is available in the Sound and the relative value of different types of habitat to lobster. Therefore, she

[122] *Id.* at 31.

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maintains that the Commission's response is illogical, since the area affected must be compared to the total area used by lobster and weighted by the relative value of specific habitat types to the lobster population. Since this information is unavailable, she claims, the magnitude of the effects on local lobster populations or on commercial harvest is unknown.

150. The NYSDEC asserts that, even with backfilling of the pipeline trench, the temperature of the sediments over portions of the pipeline would be two degrees over ambient temperatures. According to the agency, this increased temperature on the floor of the Sound could be detrimental to lobsters during the summer because current summer temperatures in the Sound are already near or above levels that stress lobsters.

151. The NYSDEC also argues that the final EIS fails to discuss the potential for effects of pipeline trench construction, such as burial and suspended sediments, to affect flounder spawning and demersal eggs. The agency maintains that the Commission should prohibit construction of the pipeline trench from December through April to protect winter flounder spawning.

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152. Impacts to lobsters along the pipeline route were explicitly discussed in section 3.3.1.2 of the final EIS (p.3-74). The Commission staff researched the extent of lobster habitat in Long Island Sound and could find no quantification of lobster habitat, although lobsters are generally distributed throughout the Sound and would have access to all of the seafloor. If it is assumed that the type of seafloor affected by the project is suitable or even preferred habitat for lobster, then the extent of suitable or preferred habitat in Long Island Sound is widespread. As stated in section 3.1.2.1 of the final EIS (p. 3-21), "[t]he large majority of the substrate [along the pipeline] is fine-grain sediment; approximately 98 percent clay, silt, or sand. The remaining 2 percent of the substrate is gravel." Figure 3.1-1 in the final EIS provides a surficial sediment distribution map of Long Island Sound. Based on this map, approximately 89 percent of the Sound is made up of clay, silt, or sand substrates, and would provide the same suitable or preferred habitat. In short, the pipeline would traverse sediment types that are common throughout the Sound and our analysis reveals no unique characteristics that would distinguish it from the predominant clay, silt, or sand substrate of Long Island Sound. Without more specific quantification, our assumption that lobsters are generally distributed throughout the Sound and would be impacted in proportion to the relative size of the construction footprint is reasonable. Consequently, an alternative route developed to avoid lobster habitat could not be identified and the only criterion that could conceivably achieve this objective is one that would decrease the length of the proposed pipeline. Section 4.5.2 of the final EIS evaluates different pipeline routes, including three that were shorter than the

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proposed route, and concluded that the proposed pipeline route would have fewer environmental impacts than the alternative routes we considered.

153. With regard to concerns expressed about sediment temperatures, the thermal modeling results for the pipeline covered with 3 feet of sediment indicate that thermal impacts to water and surficial sediments surrounding the pipeline were negligible (section 3.2.3.2 of the final EIS). Sediment temperatures 12 inches below the surface of native backfill would be less than 2 degrees Fahrenheit higher than ambient temperature, and water temperature at the surface of the cover would not be different from ambient, thus posing no increased thermal exposure to lobsters migrating along the seafloor. Sediment temperatures within 12 inches of the surface are estimated to be less than 2 degrees Fahrenheit above ambient temperatures. These slight increases in temperature would not be expected to result in any measurable impact to the benthic community (section 3.3.1.2 of the final EIS).

154. As further potential mitigation, Environmental Condition No. 87 of the March 20 Order requires that Broadwater conduct a study evaluating the costs and feasibility of altering operations or modifying equipment to ensure that the temperature of the natural gas discharged from the FSRU approximates the ambient water temperature of Long Island Sound from May through September. We would expect that reductions in the discharge temperature of the gas would also reduce the already minor projected increases in sediment temperature.

155. Most marine mammals, sea turtles, and the early lifestages of most fish species are not present in Long Island Sound during the winter and early spring. As stated in the final EIS (section 3.3.2.1, p. 3-83), ichthyoplankton abundance is highest in spring and summer when most fish species spawn, and then abundance decreases substantially in fall (Able and Fahay 1998).[123] By winter, there is no spawning by most species (Able and Fahay 1998). One notable exception is the seasonal occurrence of winter flounder eggs and larvae in late winter and spring.

156. We understand that other permits for projects that would entail seafloor disturbance in Long Island Sound have had seasonal construction windows imposed to protect winter flounder eggs and larvae from excessive turbidity. However, winter flounder eggs and larvae are generally rare or absent in Long Island Sound prior to

[123] Able, K. W. and F. P. Fahay, *The First Year in the Life of Estuarine Fishes in the Middle Atlantic Bight*, Rutgers University Press, New Brunswick, NJ (1998).

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February (Stone, et al. 1994).[124] In addition, site-specific ichthyoplankton surveys at the proposed project location in the middle of Long Island Sound found no winter flounder eggs during any monthly survey, and no winter flounder larvae were reported before late March (surveys during this period included February, March, April, and May). Based on the absence of winter flounder eggs and larvae before March and the minimal and temporary levels of turbidity expected (*see* section 3.2.3.1 of the final EIS), we do not find a timing window restriction is technically justified.

f. Impairments to Fisheries Uses

157. The Connecticut Commissioner, the NYSDEC, and the New York Towns raise concerns about the temporary displacement of recreational and commercial fishers as a result of the proposed project. The Connecticut Commissioner asserts that the Commission appears to have underestimated the time that recreational fishing in the Race could be disrupted by LNG carrier transits. Specifically, she refers to a response to comments (SA-48) that states that LNG carriers and their moving safety zone would be present in the Race less than 1 percent of the year (approximately 60 hours per year). She then refers to the text of the final EIS that indicates that Broadwater estimates that a total of 236 carriers would be in the Race for up to 35 minutes each, or approximately 1.6 percent of the time. Using this estimate she calculates that the amount of time recreational vessels would be forced to disrupt their fishing activities would be 236 hours per year. To derive this estimate, she assumes 118 carriers on an annual basis (or 236 carrier transits per year) in the Race for up to 35 minutes each or about 137 hours per year and estimates that a recreational boater or fisherman might be displaced for about 40 to 60 minutes while moving to the edge of the Race, and ultimately returning the boat to the original location, and resetting the anchor. Additionally, she maintains that the effects on recreational fishing may also have been underestimated because it is unknown whether the estimates Broadwater provided for the total LNG carrier time spent transiting the Race reflect optimal, average, or adverse sea and weather conditions which affect not only transit time, but also the ability of vessels to move out of the way of incoming traffic.

158. The Connecticut Commissioner also asserts that the Commission has underestimated the amount of commercial trawling that takes place in the proposed

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[124] Stone, et al., *Distribution and Abundance of Fishes and Invertebrates in Mid-Atlantic Estuaries,* ELMR Rep. No. 12., NOAA/NOS Strategic Environmental Assessments Division, Silver Spring, MD (1994).

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FSRU location. She questions the Commission's response to her draft EIS comments (SA6-48), that stated, "[s]ite-specific surveys suggest that aside from commercial lobster fishing, little commercial or recreational boating typically occurs at this offshore location." In support of her position, she notes that the area of Long Island Sound that can be trawled is limited and asserts that given that the location of the FSRU is in the middle of the trawl zone used by commercial trawl fishermen means commercial trawling will be prohibited there.

159. Based on the updated discussion in the final EIS, she states that it would appear that measures would be taken to minimize the disruption of commercial lobster pot fishing in the Race. However, she has concerns with the final EIS' statement that "Broadwater has stated that it would time the arrivals and departures of LNG carriers to avoid, to the extent practicable and as approved by the Coast Guard, transit through the Race during slack tides and from about 1 to 1.5 hrs before and after a slack tide. Therefore, LNG carrier transits would not materially alter the time available to commercial lobster fishermen to tend pots." She contends that the decision about when to transit the Race should not be left solely to Broadwater.

160. The New York Towns assert that the Commission's suggestion that there is no ongoing issue with respect to transit of large vessels and loss of or damage to fishing gear[125] ignores record evidence. Specifically, they state that the record shows that there are fishing and trawling lanes throughout the Sound and that the area between Montauk Point and Block Island are crucial fishing grounds. Moreover, they state that the order ignores the fact that the baymen displaced by Broadwater would be left to compete with those working the waters in Brookhaven.

161. The New York Towns also argue that the order minimizes the impact to the important lobstering industry. They explain that LNG carriers would disrupt the two two-hour periods per day of slack water in which commercial lobstermen work. Furthermore, the harm to these interests, they contend, cannot be resolved by financial compensation to fishermen and lobstermen. They also complain that the compensation agreements will be negotiated after construction of the FSRU. By that point, they argue, these interests would already be damaged.

Commission Response

162. As stated in section 3.5.5.1 (p. 3-140), the number of recreational vessels affected by the proposed moving safety and security zone as the LNG carrier transits the Race

[125] *Citing* March 20 Order at P 61.

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would depend on the season, day, and time of LNG carrier transits. Based on Broadwater's estimate that an average of 118 carriers would be needed to provide the volume of LNG at full capacity, we agree with the Connecticut Commissioner that LNG carriers and their moving safety zone would be present in the race approximately 1.6 percent of the time. That was the estimate we included in the main text of the final EIS and relied upon in assessing the impact on fisheries uses. The statement that LNG carriers and their moving safety zone would be present in the Race less than 1 percent of the year (approximately 60 hours per year) was a response to comment SA6-48 in Appendix M and is incorrect.

163. However, the amount of time recreational vessels would be forced to disrupt their fishing activities would be mitigated for several reasons. Depending on their individual drafts, commercial and recreational vessels may be able to pass LNG carriers and their associated moving safety and security zones while remaining within the channel. Since the entire width of the Race would not be affected by a transit, only those anchored vessels within the affected portion would need to relocate. For these vessels, the Coast Guard would routinely provide Notice to Mariners prior to the arrival and departure of LNG carriers. The notification system may include broadcasts on radio frequencies used by mariners. This notice would allow other users to plan for the expected arrival and departures of LNG carriers and would eliminate or minimize any unexpected impacts. Therefore, the vessels that would incur the potential 40- to 60-minute delay described by the Commissioner would be limited to those that anchor within the affected portion of the Race, during the specific 1.6 percent of the time coinciding with a transit, without receiving or responding to the Notice to Mariners. As a result, we believe that the number of recreation fishing vessels potentially affected to the level described by the Commissioner would be minimal.

164. Section 3.10.4.4 (p. 3-287) addresses the issue regarding the prevalent conditions used to estimate the time required for a carrier and its associated safety and security zone to transit the Race, from entry to exit of the safety and security zone. Under ideal conditions, LNG carriers would transit the Race in approximately 25 to 35 minutes, at speeds between 12 and 15 knots. However, weather, sea state, and vessel traffic may require reduced vessel speed and result in increased transit times through this segment. Weather and sea state conditions that would slow the transit of an LNG carrier would also logically affect the number of recreational vessels using the Race. Thus, while the potential duration of the transit would increase, the potential for encountering recreational users would decrease.

165. The proposed FSRU location is on the southern edge of a commercial trawling lane. Commercial fishermen who use fixed gear have informally set aside this lane and a second lane in Connecticut (*see* figure 3.5-2 of the final EIS) as areas within Long Island Sound where they do not use fixed gear (particularly lobster pots) to avoid conflicts with

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fishermen who trawl. However, only 2 to 12 fishermen use the trawl lane (Crismale 2006).[126] East of the Race, trawling occurs in informally established trawling lanes and those lanes are surrounded by lobster pots set at varying densities (*see* section 3.6.8.1 of the final EIS).

166. Broadwater has committed to avoiding LNG carrier transits during that (slack tide) period, to the extent practicable, which would reduce potential impacts to recreational fishing vessels in the Race. However, the decision on when the LNG carriers would transit the Race would ultimately be the Coast Guard's. All foreign-flagged vessels desiring to enter Long Island Sound can do so only with the permission of the Coast Guard. As stated in section 4.6.1 of the WSR (p. 39), "[t]he decision process for authorizing the vessel's entry into the port is conducted and a formal entry or denial decision is made. Action can be taken to mitigate any potential risk that the vessel may pose to the port." Therefore, the Coast Guard would review the schedules for the carriers and either agree with or deny Broadwater's specific request for entry into the Race.

167. Commercial fishing in the Race is also primarily timed to coincide with slack tides. Broadwater would, with Coast Guard approval, time its arrivals and departures to avoid slack tides and the periods about 1 to 1.5 hours before and after slack tides. In addition, the Coast Guard would alert marine vessels of the planned schedule of arrival of the LNG carriers, using navigational safety messages broadcast via VHF radio. This information would allow vessel captains to adjust their activity within the Race and further reduce the potential for displacement by an LNG carrier and its safety and security zone.

168. As stated in the March 20 Order,[127] fishermen that would be prohibited from using the area within the safety and security zone for the life of the project would be compensated by Broadwater. Broadwater has committed to work with affected fishermen along the Block Island and Point Judith LNG carrier routes beyond the Race, such as Montauk, and other areas on the eastern end of Long Island, provided that losses due to LNG carrier operations can be clearly demonstrated. Moreover, there would be no impacts to fishermen during construction of the FSRU and YMS, and any impacts during installation would be minor and temporary. As discussed in the final EIS (section 2.3.1.2, p. 2-25), design and fabrication of the YMS and FSRU would require

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[126] Crismale, N., Personal communication between Nick Crismale President of the Connecticut Commercial Lobster Association and Jeff Wakefield regarding commercial fishing (Nov. 6, 2006).

[127] March 20 Order at 22-23.

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approximately 3 years, and construction of both the FSRU and YMS would occur at an overseas shipyard. Installation of the FSRU and YMS in Long Island Sound would require approximately one month, and as proposed would be installed approximately 1 to 2 months prior to the initiation of project operations.

g. Invasive Species and Storm Water Runoff

169. While acknowledging that the introduction of invasive species on the new substrate provided by the FSRU was addressed in the final EIS by a discussion of the preventive actions that Broadwater will take to minimize the introduction of invasive species by transiting LNG tankers, the Connecticut Commissioner asserts that the final EIS neglected to discuss the impact of providing extensive hard substrate in the middle of the Sound, where such habitat currently does not exist, on the propagation of invasive species. According to the Connecticut Commissioner, invasive species already exist in Long Island Sound that will be attracted to the new surfaces, possibly before native species can colonize these surfaces.

170. The Connecticut Commissioner also claims that the final EIS failed to discuss the potential pollution impacts of storm water runoff from the FSRU, which its states is essentially an industrial facility with many potential contaminants.

Commission Response

171. The issue of sediment conversion was specifically addressed in section 3.1.2.2 of the final EIS (pp. 3-35-36) in response to concerns expressed by commentors. During construction, a total of approximately 7.5 acres of seafloor would be converted from softbottom sediment to hard substrate as proposed by Broadwater. However, the March 20 Order requires that Broadwater overlay the backfilled 2-mile pipeline section closest to the FSRU with native sediment which would minimize sediment conversion from a total of 7.5 acres (as proposed by Broadwater) to about 1.4 acres. Any colonization from existing invasive species within Long Island Sound on approximately 1.4 acres is expected to be minor.

172. Broadwater has proposed additional protection from nuisance growth on the pipeline riser and adjacent YMS tower mooring leg, by installing a system referred to as a Marine Shield. This shield provides a protective layer for the exposed surfaces and would reduce the level of biofouling on the pipeline riser and mooring tower leg. In addition, as addressed in section 3.3.1.2 of the final EIS (p. 3-68), and as required by the March 20 Order, the FSRU would be coated with a non-toxic silicon-based anti-fouling paint which would minimize biological growth (including invasive species) on the surface of the FSRU.

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173. As specifically addressed in section 2.1.1.6 of the final EIS, the collection, treatment, and discharge of stormwater would vary with location on the FSRU. Uncontaminated stormwater runoff, as well as firewater system test water, would be directed overboard via scupper drains. Stormwater that collects in the vicinity of equipment that could release oil or oil-like substances and other chemicals would be collected with curbs and gutters and routed to a holding tank, brought to shore, and disposed of at an approved facility in accordance with New York State Pollutant Discharge Elimination System (SPDES) Permit conditions. The likelihood that stormwater would be contaminated by hazardous materials onboard the FSRU would be minimized through the use of best management practices (BMPs). BMPs would include proper containment, storage, and handling of hazardous materials; regular inspections; and spill prevention practices (*see* section 2.1.1.6 of the final EIS).

174. In addition, section 3.2.3.2 of the final EIS states that all operational discharges from the proposed FSRU would be conducted in compliance with SPDES permit requirements with oversight from the NYSDEC. Most of these discharges would be conducted as part of routine operations and would continue for the life of the proposed project, although some either would occur infrequently (for periodic maintenance) or are never intended to occur unless there is a system shutdown (e.g., the central cooling water system).

h. Impact to Ichthyoplankton

175. The NYSDEC states that the record in this proceeding notes the loss of 274 million eggs, larvae, and juveniles from impingement entrainment into the intake systems for the FSRU and the LNG carriers. The agency asserts that the final EIS incorrectly concludes that these impacts are of minimal importance and fails to address ways to mitigate this impact or to require adequate monitoring studies for safeguarding fish species.

Commission Response

176. As explained in detail in section 3.3.2.2 and Appendix J of the final EIS, the daily water intake for the FSRU and the LNG carriers would total approximately 0.0003 percent of the volume of the water in the central basin of Long Island Sound. The cumulative water intake for a full year would be approximately 0.1 percent of this volume. Assuming a uniform distribution of eggs and larvae throughout the water column, the annual entrainment of eggs and larvae would be generally estimated to be approximately 0.1 percent of the standing crop for the central basin. With mid-depth intakes on the FSRU, the actual losses would be expected to be substantially less, since mid-depth egg and larvae densities are generally lower. This would also apply to plankton (phytoplankton and zooplankton) populations within Long Island Sound. As a

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result, there would be a negligible long-term impact to ichthyoplankton and, therefore, on the general fisheries resources of the Sound.

177. Because the estimated values represent such a small percentage of the standing crop of central Long Island Sound, these losses are not expected to affect the overall finfish, lobster, or plankton population within Long Island Sound (final EIS, p. 3-91). It is important to realize that, due to the high natural mortality rates for fish eggs in the first year (greater than 99 percent), an incremental loss of 0.1 percent would not significantly impact the health of the adult fish population. By comparison, the AES facility (on the Thames River) and the Millstone Nuclear Power Plant withdraw 30 to 400 times the amount of water that the proposed FSRU and LNG carriers would intake. In addition, these facilities are located in nearshore estuarine areas where ichthyoplankton are likely to be present at much greater densities than in the middle of Long Island Sound.

i. Air Quality Issues

178. The NYSDEC comments on various aspects of the air quality analysis provided in the final EIS. We discuss these comments below, but note that we consider most of the issues to be permitting issues rather than impact issues. That is, in the final EIS we did not attempt to predict the end result of the permitting process between Broadwater and NYSDEC. Instead, we described the impacts related to construction and operation with the understanding that the permitting process could involve mitigation that would lessen the impacts we described.

Commission Response

179. In its comments, NYSDEC correctly points out that the emissions from LNG carrier emissions while unloading at berth are part of the Prevention of Significant Deterioration (PSD) Permit. For LNG carrier emissions, the NYSDEC has authority to impose measures necessary to assure non-PSD applicability and assure compliance with applicable regulations. Therefore, we continue to believe that the resolution of outstanding air permitting issues would occur as the process progresses.

180. In addition, the NYSDEC contends that the modeling analysis of $PM_{2.5}$ and SO_2 has not been adequately addressed. The NYSDEC has stated that the emissions of $PM_{2.5}$ exceed the National Ambient Air Quality Standards (NAAQS) when background concentrations are included.[128] We do not dispute this, however, the maximum $PM_{2.5}$

[128] The Connecticut Commissioner also notes that the proposed facility will not comply with the Federal NAAQS for daily average PM2.5 and asserts that the final EIS doesn't offer any potential solutions.

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occurs at the boundary of the safety and security zone over open water. Because this is part of the NYSDEC Air Quality Permit, we conclude that the NYSDEC has statutory authority to propose and enforce mitigation measures under the NYSDEC Policy CP-33. The NYSDEC also suggests that the Commission erred in relying on a lower fuel sulfur content than the current 4.5 percent maximum permitted under the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL). However, the NYSDEC overlooks the fact that Broadwater has stated that it would accept the use of a rolling average of 2.7 percent as well as a maximum of 3.2 percent sulfur content for LNG vessel fuel. In addition, we expect that by the time the larger 250,000 m^3 vessels begin operating the Draft MARPOL Annex VI fuel sulfur limits would be significantly reduced.

181. The NYSDEC also contends that a cumulative impact model is required to determine the SO_2 impacts. As stated in the final EIS, due to the offshore location of operations, the FSRU and LNG carriers would have no major sources in their immediate vicinity. We have concluded that SO_2 and PM impacts have the potential to be significant depending upon the sulfur content of the LNG carrier fuel and thus the March 20 Order includes a requirement that Broadwater submit a plan detailing the specific procedures that the company would implement to reduce SO_2 emissions from the carriers (Environmental Condition No. 34).

j. Port Jefferson Onshore Support Facility

182. The New York Towns claim that the final EIS fails to address the potential impacts of the proposed offshore support facility in the Village of Port Jefferson. They criticize the final EIS for deferring selection and environmental review for the future and for not conditioning approval on obtaining a lease or mitigating impacts. They also assert that because the map depicting the potential site for the onshore support facility was considered Non-Internet Public (NIP) information under Order No. 630[129] the site is considered a potential terrorist target. They also state that there are single family residences that are located in the area that would be adversely impacted by the project in the event of a terrorist attack. Moreover, they argue that the project would hinder Port Jefferson's plan to improve public access along the waterfront because of the presence of heavy security related to the project.

[129] Order No. 630, FERC Stats. & Regs. ¶ 31,140 (2003).

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Commission Response

183. As stated in section 2.4.4 of the final EIS (p. 2-40), permanent onshore support facilities would be established within an existing waterfront industrial site in either Greenport or Port Jefferson, New York. These facilities would include office space for 6 to 10 staff; a warehouse for storage and handling of spare parts, tools, and equipment; dock space for berthing four tugs; a workshop for tug maintenance; and a waterfront staging area capable of supporting container transfer cranes, large trucks, and a personnel transfer and boarding area. Apart from the installation of a perimeter security fence and guard post, Broadwater does not anticipate modifying the existing facilities in any way. Broadwater has indicated that either site would be suitable for onshore support activities. Because the onshore facilities would essentially be nothing more than existing offices, warehouse space, and dock for tugs and support vessels, there should be no resulting environmental impact or increased terrorist threat.[130]

k. Offshore Environmental Impacts in Huntington

184. The New York Towns argue that the project will impact the Town of Huntington and the New York state designated Significant Coast Fish and Wildlife Habitats near Soundview Beach, the area where the Eastchester pipeline and an expanded Iroquois pipeline would make landfall transporting gas from Broadwater. They claim that community resources such as the Veterans Community Center, a boat ramp, and soccer fields would be impacted.

Commission Response

185. As discussed in section 4.3.1 and in Appendix N (p. N-363) of the final EIS, neither Broadwater nor Iroquois has indicated that improvements to the Iroquois or Eastchester pipelines are contemplated. Broadwater specifically designed its project so that onshore infrastructure modifications would not be necessary. Any future improvements proposed on either of these systems would be evaluated through a separate NEPA document. As a result, there would be no project impact to the community

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[130] In Order No. 630, the Commission declined to limit the designation of NIP information to high risk projects or facilities, opting instead to include virtually all facilities and components including computer systems that control or form part of the energy infrastructure. *Critical Energy Infrastructure Information*, Order No. 630, FERC Stats. & Regs. ¶ 31,140 (2003). In Order No. 702, the Commission eliminated the NIP category of documents. *Critical Energy Infrastructure Information*, Order No. 702, FERC Stats. & Regs. ¶ 31,258, at P 25 (2007).

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resources noted by the New York Towns, and no project activities would occur within 5 miles of the Town of Huntington.

3. Alternatives Analysis

186. NEPA requires that the federal government include in "every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official" of not only the environmental impact of a proposed action, but also alternatives to the proposed action.[131] The agency must "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources."[132]

187. Section 4 of the final EIS sets forth the criteria that were employed for evaluating potentially reasonable and environmentally preferable alternatives to the project proposed by Broadwater. These criteria were whether they were technically feasible and practical; offer significant environmental advantage over the proposed project or its components; and meet project objectives. The project's purpose was identified as: (1) establishing an LNG marine terminal capable of receiving and storing imported LNG and regasifying the LNG at an average send-out rate of 1Bcf/d; and (2) providing a new source of reliable, long-term, and competitively priced natural gas to the Long Island, New York City, and Connecticut markets by connecting to the existing natural gas pipeline system.

188. The final EIS noted that not all conceivable alternatives are technically and economically feasible or practical, because, for example, they are unavailable and/or incapable of being implemented. The final EIS explained that each alternative was considered to a point at which it was clear that the alternative was not reasonable or would result in significantly greater environmental impacts or could not be readily mitigated, and that those alternatives that appeared to be the most reasonable with less than or similar levels of environmental impact were reviewed in the greatest detail.[133]

189. Using these criteria, our assessment of alternatives considered existing, proposed, or planned projects, including six existing pipeline systems; seven proposed pipeline projects; and 20 proposed, planned, or existing LNG terminals between Quebec, Canada and the Delaware River in New Jersey. Although it would be technically feasible to

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[131] 42 U.S.C. § 4332(2)(C) (2000).

[132] 42 U.S.C. §4332(2)(E) (2000).

[133] Final EIS, p. 4-1.

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transport natural gas through these systems, we found that none of these alternatives could directly deliver comparable volumes of natural gas to the target markets without substantial system upgrades or extensive offshore construction that would result in greater environmental impacts than those of the proposed project.

190. Several parties claim that the March 20 Order is based on an inadequate alternatives analysis. While they acknowledge that final EIS lists several potential alternative projects, they assert that the Commission made no effort to evaluate the actual regional need and determine the best fit of terminals and pipelines to meet that need. They also maintain that there was no serious attempt to analyze environmental impacts of alternatives. The issues raised concerning whether the alternative analysis included in the final EIS satisfies NEPA's requirements are addressed below.

a. <u>Project Purpose</u>

191. The Connecticut Commissioner and Attorney General claim that the final EIS' statement of project need as providing a "marine terminal" to "provide a new source of reliable, long term, . . .natural gas" confuses public need with Broadwater's private purpose. They maintain that there is no reason that only a marine regasification terminal will do and that such a terminal must achieve a certain sendout rate. In this regard, they assert that a land based regasification terminal or two smaller terminals could easily meet the predetermined need for 1.0 Bcf/d, as well as a nearby, but out-of-region, terminal could supply the necessary natural gas.

192. We disagree with the parties' assertion that we inappropriately adopted the project sponsors' objectives and goals for NEPA purposes. First of all, the courts have upheld federal agencies' use of applicants' identified objectives as the basis for evaluating alternatives.[134] This general principle, however, is subject to the admonition that the goals of a project may not be so narrowly defined as to preclude consideration of what may actually be reasonable choices.[135] Thus, objectives must be reasonably identified and defined.

193. In its broadest sense, the goal of the Broadwater Project is to provide an additional supply of natural gas to New York and Connecticut to help meet the area's increasing need for natural gas. Thus, the analysis of alternatives in the final EIS considered

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[134] *City of Grapevine, Texas v. DOT*, 17 F.3d 1502, 1506 (D.C. Cir. 1994).

[135] *Simmons v. U.S. Army Corps. of Engineers*, 120 F.3d 664 (7th Cir. 1997); *Citizens against Burlington, Inc. v. Busey*, 938 F.2d 190 (D.C. Cir. 1991).

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alternatives for delivering up to 1 Bcf/d of natural gas to Long Island, New York City, and Connecticut including the use of 6 existing pipelines, 7 "new" pipelines (proposed, recently approved, under construction or announced), 20 other LNG terminals (proposed, recently approved, under construction or announced), 4 alternative LNG terminal designs, 3 alternative FSRU locations, and 5 other pipeline routes. In addition, section 4.2.4 of the final EIS addressed alternatives that would provide natural gas at a rate less than 1 Bcf/d combined with energy from alternative sources sufficient to meet the energy equivalent of 1 Bcf/d. Thus, the final EIS gave reasoned consideration to many projects including land-based LNG terminals and projects delivering less than 1Bcf/d to the region.

194. In considering alternatives, the final EIS did accord substantial weight to the ability of a project to provide diversification of supply and integrated storage service. Approximately 85 percent of the gas currently consumed in the New York City, Long Island, and Connecticut regions is supplied by pipelines originating in the U.S. Gulf of Mexico and Canada. According to the Annual Energy Outlook (EIA 2008), domestic production of natural gas will remain relatively flat through 2025 and projected production will not match projected demand. The supply of Canadian natural gas to the U.S. is also expected to decrease substantially in coming years. LNG imports will play an important role in making up for the decrease in natural gas supply occasioned by declining domestic production and decreased imports of Canadian gas. The Commission has also recognized that storage is critical in meeting the overall demands and specific requirements of natural gas consumers and that storage can have a moderating influence on gas prices.[136] Thus, we affirm our conclusion in the final EIS and March 20 Order that in considering alternatives for this project diversification of supply and the ability to provide integrated storage service are legitimate and reasonable objectives.

b. <u>Project Need</u>

195. Save the Sound argues that the record does not support the fact that: (1) one Bcf/d is needed to meet the energy demands of New York and Connecticut; (2) Broadwater can and will bring the full proposal of 1 Bcf/day of natural gas to this market.[137]

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[136] *See, e.g., Rate Regulation of Certain Natural Gas Storage Facilities,* Order No. 678, FERC Stats. & Regs. ¶ 31,220, at 30,408-409 (2006).

[137] Save the Sound argues that the limited global supply of natural gas may prevent Broadwater from meeting the 1 Bcf/d goal. Additionally, it argues that Broadwater failed to provide evidence of contracts showing its capability of acquiring 1 Bcf/d supply of gas.

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196. We disagree. Section 1.1.2.2 of the final EIS addresses the issue of regional need, and observes that natural gas consumption in New York City, Long Island, and southern Connecticut has been growing at an annual rate of about 2.7 percent. The need assessment also noted that this trend is expected to continue with 1 to 1.6 percent annual increases in New York City (Rappazzo 2007),[138] approximately 2.0 percent annual increase on Long Island (Rapazzo 2007), and 1.5 to 1.7 percent increases in Connecticut (TFOLIS 2003). There is some evidence suggesting peak demand levels are increasing more rapidly and are less responsive to price pressure (CEAB 2007).[139] It is for these reasons that the Interim Report of the Long Island Sound LNG Task Force (2006) stated ". . . it is clear that there is a real need for additional gas supplies on a year-round basis in the Northeast and specifically in Connecticut."[140] This statement of need is consistent with NCI Energy Practice (2007)[141] which found that price spikes in New York City gas prices are the result of a capacity constrained transmission system. The statement is also consistent with NYSERDA (2002),[142] which identified the need for between 0.4 and 1.6 Bcf/d of increased transmission capacity by the year 2010.

197. In the past 10 years, electric power generating facilities in the region have increased output by about 5.6 percent per year, and annual consumption of natural gas by

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[138] Reppazo, Sheila, Email from S. Rappazzo (Chief, Policy Section Office of Electric, Gas, and Water NYS Department of Public Service) to Jennifer Ward (ENTRIK, Inc.) regarding peak-day demand and growth projections for winter 2007-2008 (December 4, 2007).

[139] Connecticut Energy Advisory Board (CEAB), *2007 Energy Plan for Connecticut* (2007), available online at: http://www.ctenergy.org/images/2007_Energy_Plan.doc.

[140] Long Island Sound LNG Task Force, *Interim Report on the Broadwater Energy Proposal* (2006), available online at http://www.ctlng.state.ct.us/.

[141] NCI Energy Practice Navigant Consultants, NG Market Notes February 2007, available online at http://www.navigantconsulting.com/A559B1/navigantnew.nsf/vGNCNTByDocKey/PPF9D11C5B4916/$file/NG%20Marketnotes%200207.pdf.

[142] New York State Energy Resource Development Authority (NYSERDA), *2002 State Energy Plan and Final Environmental Impact Statement: Issue Report 2.1: Promoting energy Industry Competition* (June 2002), available online at http://www.nyserda.org/sep/sepsection2-1.pdf.

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those facilities increased by about 100 Bcf. Increased supplies of natural gas provided by the project would help meet the growing energy demands of the region while also helping to meet regional air quality objectives.

198. As such, and in the absence of infrastructure upgrades, the area is expected to experience upward pressure on natural gas prices, increased price instability, and a reduction in the integrity and reliability of home heating and energy distribution networks. Further supporting the need for new natural gas supplies is an independent analysis conducted for Long Island Power Authority (LIPA). Levitan and Associates (2007)[143] estimates that a project capable of storing natural gas and delivering up to 1 Bcf/d to the target markets would reduce transmission constraints generating 4.6 billion dollars in direct benefits to gas utility customers.

199. Finally, whether Broadwater will ultimately be able to contract for sufficient LNG supplies on the global market to supply 1 Bcf/d of regasified LNG to the New York and Connecticut region will be determined by the market. Such an inquiry is not required under NEPA or the NGA. Importantly, the project applicants are at risk for the recovery of the costs of the project. As we have previously found, relying on the market to decide which projects ultimately are best suited to meet the infrastructure needs of an area best serves the public interest because it allows for the most efficient, cost effective, and timely development of energy infrastructure.

c. <u>Regional Siting Plan</u>

200. The Connecticut Commissioner and Attorney General also fault the final EIS for recognizing the fact that public officials have advocated a regional siting plan for LNG plants, but concluding that "we do not believe that a regional siting study needs to be concluded prior to conducting the site-specific review of the project. The Commission is responsible for reviewing applications . . . as they are filed."[144] They assert that this statement shows the Commission's intention to completely abdicate any role in actually understanding and planning for the region's energy needs and future. Because there are a number of proposed, very expensive, and duplicative energy-related infrastructure projects, they maintain that an objective, regional, multi-state planning and analysis

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[143] Levitan & Associates, Inc., *Broadwater LNG, a Technical Assessment: Market, Technology, Environment and Safety Related Impacts in New York State* (July 2007) (Prepared for the Long Island Power Authority).

[144] *Citing* final EIS, p. 4-2.

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approach is warranted and required to comply with alternatives analysis mandated by NEPA.

Commission Response

201. The "siting" component of the Commission's review is addressed through a multidisciplinary and cross-agency review of: (1) the suitability of the location proposed by the applicant; and (2) the environmental impact of the proposed locations versus other locations that could achieve the same objectives. When the Commission reviews a proposed project, it evaluates a range of alternative sites. We believe that a regional alternatives analysis, which is a part of each EIS prepared by the Commission, allows an environmental review of viable sites within the region and the specific market that is targeted by the applicant. Therefore, while a regional siting study, if provided, could assist our review, it does not need to be concluded prior to initiating the site specific review of proposed projects.

202. As explained in section 4.0 of the final EIS (p. 4-2), the Commission is responsible for reviewing applications for specific proposed energy projects under the NGA and NEPA as they are filed to ensure timely and efficient development of much needed natural gas infrastructure. We are considering such a specific proposal here. The Commission's role is to determine whether a proposed site is environmentally acceptable and safe, and to approve projects that meet the requirements of the NGA. Nevertheless, regional issues and needs already play an important role in the Commission's decision-making process. As explained above, the Commission's environmental review process in this application proceeding included analysis of reasonable alternative sites, offered significant opportunity for public participation and comment, and involved substantial coordination in many areas with federal and state agencies and elected officials. Thus, we find that the record is complete and it is appropriate for us to act now on Broadwater's applications.

d. Conservation and Renewable Energy Projects

203. The Connecticut Commissioner and Attorney General claim that the final EIS summarily dispenses with a number of conservation and renewable energy projects planned for the region, such as the Roosevelt Island Tidal Energy Project, the Orient Point Tidal Energy Project and several other tidal projects, as well as a number of major wind projects, with the statement that they "would account for only a portion of the energy demand of the region."[145] They state that while these projects do not claim to

[145] *Citing* final EIS, p. 4-6.

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meet all of the region's energy needs, they could collectively contribute significant new power supply, without use of fossil fuels, and obviate some of the need for this project. Accordingly, they claim that the conclusion that use of renewable energy sources would not offset the need for the proposed project is without meaningful analysis, and therefore in violation of NEPA's requirements for meaningful consideration of alternatives.

Commission Response

204. As discussed at length in section 4.2 of the final EIS, proposed renewable energy projects in New York State, along with existing efforts such as Connecticut's landfill gas generation and fuel cell programs (CSC 2004),[146] would account for only a portion of the energy demand of the region that would be met if the proposed project is implemented. In addition, although federal, state, and local initiatives promoting renewable energy likely will contribute to an increase in the availability and cost effectiveness of these technologies in the coming years, studies such as the NYSERDA (1999),[147] the Connecticut Clean Energy Fund (CSC 2004), and Levitan & Associates, Inc. (2007), predict that renewable energy sources would offset only a small part of the projected energy demand for the region in the foreseeable future.

205. Similarly, although energy conservation measures will be important elements in addressing future energy demands for the region, energy conservation will reduce the energy demands of the region by only a small fraction of the projected energy demand for the region within the foreseeable future. Thus, energy conservation would not replace the need for the project (*see* section 4.2.3 of the final EIS).

206. However, as addressed in section 1.1.5.4. of the final EIS, under the theoretical conditions put forth by Synapse Energy Economics, Inc. (Hausman et al. 2006),[148] energy

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[146] Connecticut Siting Council (CSC), *Review of the Connecticut Electric Utilities' Ten-year Forecasts of Loads and Resources* (2004), available online at http://www.ct.gov/csc/lib/csc/2004_forecast-final.pdf.

[147] New York State Energy Research and Development Authority (NYSERDA), *Energy Efficiency and Renewable Energy Resource Development Potential in New York State* (1999), available online at http://www.nyserda.org/publications/EE&ERpotentialVolume1.pdf.

[148] Hausman, Ezra, K. Takahashi, D. Schlissel, and B. Biewald, *The Proposed Broadwater LNG Import Terminal; an Analysis and Assessment of Alternatives*. Synapse Energy Economics, Inc., Final Report (March 2, 2006).

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conservation, renewable energy, and other measures could, in concert, offset projected increases in natural gas demand in the target markets. We have concluded that conservation combined with renewable energy would reduce the need for natural gas, but it is clear that this would not meet the projected increase in energy demand for the region. The gains achieved collectively through better management, increased efficiency, and renewable energy use could only moderate, not reverse, the projected increases in gas consumption for the region (*see* section 4.2.4 of the final EIS).

e. Algonquin Pipeline System

207. The Connecticut Commissioner and the Attorney General disagree with the finding in the final EIS that in order for the existing Algonquin Pipeline System (Algonquin) to transport natural gas from new LNG terminals planned or already built in New England to New York, this pipeline would need more compression and pipeline upgrades that would result in environmental impacts that would be greater than those anticipated from Broadwater. They complain that nowhere in the final EIS is there an indication of how many new compressor stations or what new piping would be needed or where. They also assert that the final EIS does not appropriately consider that: (1) much of the Algonquin pipeline infrastructure is already built in heavily impacted industrial areas and additional work there might have minimal environmental impact; (2) the comparison of marine impacts to land impacts is not one-for-one and the technology to mitigate or avoid land impacts is vastly more advanced than for marine impacts; and (3) it is often possible to site land impacts in commercial or industrial areas of limited environmental importance.

Commission Response

208. As described in the final EIS, in order to supply an additional 1.0 Bcf/d of natural gas to the market that Broadwater proposes to serve, the Algonquin system would require significant modification and expansion. Algonquin's existing 24-inch pipeline would need to be replaced with larger diameter pipe along much of the route or supplemented with additional pipeline installed adjacent to the existing pipeline. This would require installation of either new (replacement) pipe or looping, backfilling and revegetation along much of the existing route, and maintenance of the right-of way for the life of the project. The distance of the existing route along which the construction would occur would be substantially greater than the 22-mile-long proposed subsea pipeline; assuming that a 100-foot-wide construction corridor would be required, each mile of new or looped pipeline construction would disturb at least 12.1 acres of existing land uses that could include forested and non-forested wetlands, wildlife habitat, waterbodies, residences, and recreational land. Additional compression also would be required, either in the form of new compressor stations or increased compression at existing stations.

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209. Some of these system upgrades have been proposed as part of Algonquin's proposed East to West HubLine Expansion Project (*see* section 4.3.1.2 of the final EIS). If approved and constructed, the Algonquin East to West HubLine Expansion Project would supply approximately 1.1 Bcf/d of natural gas to shippers on the Algonquin system from East Coast and Canadian sources. The project would include construction of 13 miles of new 36-inch-diameter pipeline in Massachusetts, replacement of 33.1 miles of existing pipeline in Massachusetts and Connecticut, construction of two new compressor stations in Massachusetts, and upgrades to five existing compressor stations and 29 metering and pressure regulation stations in Massachusetts, Connecticut, Rhode Island, New Jersey, and New York. The East to West HubLine Expansion Project would not address existing bottlenecks in transporting natural gas from the northeastern U.S. and Canada to the New York City and Long Island markets. Providing additional natural gas from Connecticut, New Jersey, or mainland portions of New York State to Long Island and New York City markets would require construction of a new pipeline across the East River; or construction of a new pipeline or expansion of an existing or proposed pipeline across Long Island Sound. Therefore, the transport of gas provided by the East to West HubLine Expansion Project to the New York City and Long Island markets would require construction in both the nearshore and offshore environments. In addition, this project would not meet the Broadwater Project objective of providing additional integrated natural gas storage facilities.

210. Although an acre-to-acre comparison for impacts is useful, professional judgment is also necessary since all projects and resources are unique. Our environmental review carefully considers site-specific resources and information on the sensitivity of the resources based on regulatory protection, scientific literature, and agency and public input. Using this approach, sensitive nearshore wetlands and oyster beds are considered more sensitive than offshore mud habitats, and residential areas are more sensitive than agricultural or industrial areas. Specific to the Broadwater Project, the part of Long Island Sound that would be affected is not unique and does not support unique assemblages of biota. Stratford Shoal does support a more diverse benthic community, but the project traverses the shoal at a narrow point.

211. Based on this analysis, we concluded that expansion of the Algonquin system would not meet the objective of providing additional integrated storage facilities without major modifications and the associated environmental impacts would be greater than those of the limited impacts of the proposed project (*see* section 4.3.1.1 of the final EIS).

f. <u>Northeast 07 and 8/09 Projects</u>

212. The Connecticut Commissioner and the Attorney General contend that the final EIS unreasonably discounts the Northeast-07 Project and the Iroquois 08/09 Project, that unlike Broadwater, would not impact pristine and untouched seafloor and may have

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lower new impacts to the environment. They disagree with the final EIS' finding these projects are not an alternative to Broadwater because they do not meet the objectives of providing a source of imported gas and additional natural gas storage facilities. According to the Connecticut Commissioner and Attorney General, this assertion ignores the fact that these pipeline upgrades would permit major new sources of Canadian gas to reach New York and that additional storage facilities could be built essentially anywhere on land. Therefore, contrary to the Commission's summary dismissal of the Northeast 07 and 08/09 projects, they allege that these proposals are a direct alternative to the Broadwater Project and may well have substantially reduced environmental impacts while not relying on untested technology.

Commission Response

213. As previously explained, the Broadwater Project would deliver 1 Bcf/d and would impact about 264 acres of seafloor, most of which is comprised of mud bottom. Mud bottom habitat is not unique in Long Island Sound and does not support unique biotic assemblages. Scientific reports examined by the Commission showed that benthic communities in mud habitats, like those along most of the proposed pipeline, typically recover within 1 year and communities that inhabit sands and gravel typically recover in 2 to 3 years (Newell, et al. 1998). Consequently, we believe that onshore construction affecting similar acreages would, at a minimum, result in a similar level of impact to the environment (both human and natural). In the final EIS, we demonstrated that delivering 1 Bcf/d to the target markets would require upgrades and new construction that would affect much greater acreages than would the proposed project.

214. As described in the final EIS (pp. 4-12-15), modification of the Northeast-07 Project to supply a greater volume of gas to the Long Island and Connecticut markets than proposed would require looping along hundreds of miles of the Millennium or Algonquin pipeline routes, resulting in impacts to thousands of acres of existing land uses. Further, providing additional natural gas to the New York City and Long Island markets would require: (1) construction of a new pipeline crossing the Hudson River; or (2) expansion of existing or proposed pipeline crossings of Long Island Sound, or a new pipeline crossing of the Sound. The latter would require construction in both the nearshore and offshore environments. In addition, this project would not meet the Broadwater Project objectives of providing a new source of enhanced reliability through diversification of fuel sources and additional integrated natural gas storage facilities.

215. As described in the final EIS (p. 4-17), the Iroquois 08/09 Project proposes to expand Iroquois' current system to receive an additional 0.2 Bcf/d of natural gas at the interconnection of the Iroquois and Algonquin pipelines in Brookfield, Connecticut. The additional volume of gas would be delivered to the KeySpan system in South Commack, Long Island. Iroquois has proposed a three-phase project. Phase I would involve the

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addition of 36-inch-diameter pipeline looping in Booneville and Wright, New York, and in Newtown, Connecticut. Phase II would consist of construction of two new compressor units at the meter station in Milford, Connecticut; and Phase III would entail construction of two new compressor units at the Brookfield Compressor Station in Brookfield, Connecticut.

216. This project could relieve a portion of the natural gas demand in Connecticut that would be met by the Broadwater Project. However, the project could not supply additional natural gas to the New York City and Long Island markets without substantially improving both capacity and compression for the portion of the Iroquois pipeline that crosses Long Island Sound. Those improvements would result in impacts to nearshore and offshore marine environments. As described above, construction of those infrastructure improvements and the use of additional or expanded compressor stations would result in impacts that would be greater than those of the proposed Broadwater Project**.**

g. Tennessee Pipeline Project, Sentinel Expansion Project, and Dominion Hub Project

217. The Connecticut Commissioner and the Attorney General claim that the final EIS is inadequate in its treatment of numerous other planned pipeline projects including the Tennessee, Sentinel, and Dominion Hub Projects. Specifically, they assert that in every case, the final EIS concludes that these projects will carry insufficient gas and result in greater impacts than Broadwater, but nowhere is there a showing why these projects will supposedly cause greater impacts. Furthermore, they maintain the final EIS contains no analysis of how the regional need for gas would be affected by any one or all of these projects.

Commission Response

218. As described below, the Tennessee, Sentinel, and Dominion Hub Projects were explicitly discussed in the final EIS including identification of the types of environmental impacts that would be greater than those of the proposed project in delivering natural gas to Long Island, New York City, and Connecticut (*see* final EIS, p 4-16).

219. Tennessee's Atlantic Supply Expansion Project, announced in May 2005, would include system upgrades to transport up to 0.3 Bcf/d of gas from an existing interconnection with Maritimes & Northeast Pipeline, LLC (Maritimes &Northeast) in

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Dracut, Massachusetts (FERC 2007a).[149] No further information was available regarding this project at the time that the final EIS was issued. Construction of larger diameter replacement pipe or looping and additional compression would be required to meet the purpose of the Broadwater Project. A substantial amount of additional mainline pipe also would need to be installed to provide access to New York City and Long Island markets, including either a new or looped pipeline across Long Island Sound. Consequently, construction of upgrades to the Tennessee system would result in impacts that would be greater than those of the proposed project. In addition, this project would not meet the Broadwater Project objectives of providing enhanced reliability through diversification of fuel sources and additional integrated natural gas storage facilities.

220. Transcontinental Gas Pipe Line Corporation (Transco) filed an application for the Sentinel Expansion Project in December 2007. The project would add approximately 0.14 Bcf/d of natural gas capacity to the existing Transco pipeline between western Pennsylvania and Maryland (Northeast Gas Association 2005).[150] The proposed project would add approximately 11 miles of new and 7 miles of replacement 42-inch-diameter pipeline in Union and Somerset Counties, New Jersey and Luzerne, Northampton, and Monroe Counties, Pennsylvania. The project also would include modification of an existing compressor station in Chester County, Pennsylvania. In order to deliver substantially greater volumes of natural gas to Broadwater's target markets, it is likely that the Sentinel Expansion Project would need to construct a new pipeline crossing the Hudson River and/or expand the existing Transco pipeline that terminates near the southeastern corner of Long Island. These improvements would require construction in both the nearshore and offshore environments. In addition, this project would not meet the Broadwater Project objectives of providing enhanced reliability through diversification of fuel sources and additional integrated natural gas storage facilities.

221. The Dominion Hub Project would add 0.3 Bcf/d of natural gas capacity to the existing Dominion Pipeline System, which includes a connection with the Iroquois pipeline (Dominion 2006). The transport of additional gas provided by the Dominion Hub Project to Broadwater's target markets would likely require construction of a new pipeline crossing the Hudson River and/or expansion of existing pipelines, along with the

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[149] Federal Energy Regulatory Commission (FERC) (2007a), *Major Pipeline Projects on the Horizon as of June 2007*, available online at http://www.ferc.gov/industries/gas/gen-info/horizon-pipe.pdf.

[150] Northeast Gas Association, *Planned Enhancements, Northeast Pipeline and Storage Systems (as of 12/1/05)*, available online at http://www.northeastgas.org/pdf/system_enhance1205.pdf.

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associated impacts. In addition, this project would not meet the Broadwater Project objective of providing enhanced reliability through diversification of fuel sources.

h. LNG Terminals

222. According to the Connecticut Commissioner and the Attorney General, the greatest failing of the final EIS' alternatives discussion relates to its consideration of the numerous planned LNG terminals such as Crown Landing, Safe Harbor, BlueOcean, the Neptune Terminal, and the Northeast Gateway Project. They state that the Neptune Terminal and Northeast Gateway Projects are just two of several projects planned for New England that would move significant amounts of new LNG into the region. Because Safe Harbor proposes to import up to 2 Bcf/d, and BlueOcean another 1.2 Bcf/d, they assert that these projects could obviate the need for Broadwater and any number of the smaller 0.1 to 0.3 Bcf/d pipeline projects. With regard to Safe Harbor, they complain that the final EIS merely states that Safe Harbor is not an effective alternative because the "footprint" of the artificial terminal island would have more of an impact than Broadwater and that the project would have overall greater risks without any specification of risk. They also claim that the Commission seems to be counting overall acreage impacted without acknowledging that an acre of rocky seafloor in Atlantic waters may have vastly fewer marine resources than a narrow, confined estuary such as Long Island Sound. With regard to BlueOcean, they state the final EIS says nothing at all.

223. Save the Sound similarly asserts that the Commission erred in its failure to include the proposed Blue Ocean Project as a viable alternative and its failure to consider alternative sites, like the Atlantic Ocean, for the Broadwater Project. It asserts that the Blue Ocean Project would provide more natural gas (1.2 Bcf/d) than Broadwater to the regional market and could accomplish the same purpose. It also claims that the fact that the Blue Ocean Project is proposed to be sited in the Atlantic Ocean demonstrates that the Atlantic Ocean is a feasible and reliable alternative to Long Island Sound.

224. The Connecticut Commissioner and the Attorney General also maintain that the March 20 Order ignores the fact that Broadwater will cause "a permanent impact to a large area of the seafloor" in the much more sensitive and confined Long Island Sound and that Broadwater is also located in the immediate vicinity of major commercial shipping lanes. In addition, they assert that the fact that the Safe Harbor project would entail some undefined amount of new pipeline construction in no way disqualifies it from serving as an alternative to Broadwater. They state Broadwater Project itself includes 21.7 miles of underwater pipeline installation in a critical marine environment and the final EIS nowhere indicates where the new Safe Harbor pipeline would be installed or details any environmental impacts of that pipeline. They conclude that the final EIS, therefore, fails to balance the impacts from Safe Harbor and/or BlueOcean, primarily landside pipeline construction in heavily populated and industrialized areas, against many

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more miles of landside pipelines in rural and residential areas in New York and elsewhere and vastly increased marine impacts in Long Island Sound.

225. The Connecticut Commissioner and the Attorney General also claim that the proposed Neptune, Deepwater Port, and Northeast Gateway Projects in Massachusetts, the Quoddy Bay LNG, and Downeast LNG Projects in Maine, the Canaport LNG and Bear Head LNG terminals in Canada, and several other LNG terminal projects were referred to in the draft EIS but never fully analyzed or considered. They assert the record provides no support for the assertion in the final EIS that land-based pipeline impacts are somehow greater, or even equal, to marine pipeline impacts on an acre-for-acre basis. Since the Commission's approval of the land-based pipelines appears to be certain, they argue it is legal error to ignore their contribution to the regional energy market.

Commission Response

226. The Crown Landing, Neptune Deepwater Port, Northeast Gateway, and Safe Harbor Projects were all discussed in the final EIS as described below. The BlueOcean Energy Project was not included in the final EIS because the BlueOcean Energy Project was not announced until December 12, 2007. At the time the final EIS was issued in January 2008, there was no specific information on this potential project associated with the specific location, anchoring methods, vaporization technology, offshore or onshore pipeline routes, pipeline installation methods, or the subsequent environmental impacts associated with these fundamental aspects of the project integral to assessing impacts. In addition, ExxonMobil has not submitted a proposal for the project to any agencies to date.

227. The final EIS did examine a comparable FSRU configuration sited in the Atlantic Ocean (*see* section 4.4.2.1 of the final EIS). We determined that the total length of pipeline required to connect to the Iroquois pipeline would be substantially longer (approximately 50 to 75 miles) than the proposed subsea pipeline and would result in greater impacts than those of the proposed pipeline. The sendout pipeline from an FSRU sited south of Long Island would need to be constructed either: (1) through nearshore recreational areas and sensitive shallow-water and coastal ecosystems; or (2) in the seabed of the Atlantic Ocean to connect to the existing offshore Transco pipeline. Much of the southern shoreline of Long Island is protected either as federal recreational land or listed as significant coastal fish and wildlife habitat. These resources could include Jones Beach State Park, Hempstead Bay, Cupsogue Beach County Park, Shinnecocke County Park, Fire Island National Seashore, Amagansett National Wildlife Refuge, South Oyster Bay, Mastic Beach, and Narrow Bay.

228. A tie-in from an FSRU located offshore of southern Long Island to the existing Transco pipeline south of Long Island would avoid the need to construct a pipeline in

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onshore and nearshore environments. We performed a hydraulic analysis to determine whether gas sent out from this location through the Transco pipeline could reach the Connecticut, Long Island, and New York City markets. Results of the analysis showed that, while gas from an FSRU with an offshore connection to the existing offshore Transco pipeline could reach Long Island, it could not reach New York City markets without construction of new onshore or offshore pipeline loops and addition of new onshore compressor stations. However, some additional natural gas would be made available to New York City as a result of upstream gas displacement in the Transco pipeline system. This displacement would not represent new gas supply, but rather redistribution of existing gas. Impacts associated with pipeline construction would be greater than those of the proposed project, and the additional compression would increase onshore emissions of pollutants that would not occur with the proposed project.

229. We do acknowledge the feasibility of constructing and operating an FSRU in the Atlantic Ocean, as proposed by BlueOcean. However, sea conditions in the Atlantic Ocean are more severe and the number of days in which an LNG carrier could successfully offload LNG to the FSRU would be reduced. This would result in less reliability. Broadwater indicated a limitation at wave heights of 2 meters or more. This wave condition is not predominant in the Atlantic Ocean, but does occur intermittently during a typical winter. Conversely, wave heights exceeding 2 meters rarely occur in Long Island Sound. The frequency with which weather disruptions may occur without compromising contractual agreements for natural gas delivery is specific to the project and we have not addressed this issue as a potential threshold of impact. We can state, however, that weather-related disruptions in the Atlantic Ocean would almost certainly occur more frequently than would be expected in Long Island Sound.

230. With the exception of the proposed Safe Harbor Project, all of the LNG terminals identified (including Crown Landing, Neptune, and Northeast Gateway) as potential LNG terminal system alternatives are located far from the markets proposed to be served by the Broadwater Project (from 113 to 648 miles). Regasified LNG from distant terminals would require a new or upgraded pipeline to transport gas to the target market. In each case, the new or upgraded pipeline would be longer than the proposed 21.7-mile-long Broadwater subsea pipeline. Each mile of new pipeline would affect about 12.1 acres of existing land uses. In addition, transporting gas from all but one of the LNG terminals considered (Safe Harbor) would require looping the Iroquois pipeline across Long Island Sound or installing a new pipeline across the Sound, thus affecting the same offshore resources plus the more sensitive nearshore resources located along the Connecticut and Long Island shorelines. Transport of natural gas to the target market from the Safe Harbor Project would involve installing a pipeline in Atlantic Ocean waters.

231. Use of any of the existing or proposed LNG terminals as a system alternative would include impacts associated with expanding the LNG terminals themselves

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(potentially adding new berths, tanks, and vaporization equipment); installing replacement pipe, looping, or a new pipeline at the facility; and adding new compressor stations or upgrading existing compressor stations. The environmental impacts associated with those infrastructure improvements would also be greater than the impacts associated with construction and operation of the proposed project, as described further below, with implementation of our recommended mitigation measures and the risk mitigation measures identified by the Coast Guard.

232. The Safe Harbor Project would result in substantially greater impact to the seafloor as well as a greater extent and duration of impact to the biota within the footprint of the island. The artificial island would have an above-water area of 60.5 acres and would cover approximately 116 acres of seafloor. Impacts to benthic biota would continue throughout the life of the project. The proposed Broadwater Project would impact approximately 264 acres of which only about 1.4 acres would be permanent impacts. In addition to the permanent footprint of the island, adjacent areas could be impacted by turbidity and sedimentation during island creation and removal. Specific environmental impacts have not yet been determined by the Coast Guard, but impacts of construction and operation would be expected to affect water quality, fisheries resources, essential fish habitat, and threatened and endangered marine species.

233. Additional impacts would result from construction of the project's proposed pipelines. As proposed, the project would include two parallel, 36-inch-diameter, 12.8-mile-long subsea pipelines with an offshore connection to the existing Transco pipeline that transports gas to markets on Long Island and in New York City and Connecticut. The sendout pipelines would cross seven existing subsea cables.

234. Table 4.3-4 of the final EIS provides a side-by-side comparison of the Safe Harbor Project and the Broadwater Project. The Safe Harbor Project would consist of an artificial island that would permanently cover approximately 116 acres of seafloor, and 25.6 miles of 36-inch pipeline. As a result, total seafloor acreage impacts for the Safe Harbor Project would be approximately 1.7 times greater than the Broadwater Project, and permanent conversion of the seafloor would be almost an order of magnitude higher for the Safe Harbor Project than the Broadwater Project. Although the Safe Harbor Energy Project would allow some natural gas to reach the New York City market through the Transco system, this system would need to be substantially upgraded to provide comparable volumes of gas to the New York City and Connecticut markets.

235. The Neptune Deepwater Port, Northeast Gateway, Quoddy Bay LNG, Downeast LNG, Canaport LNG, and Bear Head LNG terminals were all discussed in section 4.3.2. of the final EIS. The Maritimes & Northeast Pipeline System would need to be significantly expanded to transport all available gas from Canadian, Massachusetts, or Maine-based LNG sources; and additional infrastructure improvements would be

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required to transport the gas to Long Island and New York City, as described in Section 4.3.3.3. Expansion of the Maritimes & Northeast pipeline to accommodate natural gas from the Canaport LNG facilities would include construction of approximately 146 miles of new looped pipeline and would affect nearly 2,000 acres of land in Maine, including 322 acres of wetlands and 148 perennial waterbody crossings. Maritimes & Northeast conducted an open season from June to August 2007 for a Phase V expansion to accommodate additional gas demand in the New England area. In a related filing to the Commission, Maritimes & Northeast stated that transport of gas from either the Quoddy or Downeast LNG Projects would likely require construction of 297 miles of new 36-inch-diameter pipeline looping and six new compressor stations. Construction of such a pipeline alone would affect more than 3,500 acres of existing land uses, including wetlands, wildlife habitat, residences, and recreational areas. Impacts associated with an Algonquin (East to West HubLine Expansion Project) or Tennessee (Atlantic Supply Expansion Project) pipeline system expansion would incur additional impacts, and would transport the gas only to Connecticut.

236. If a substantial volume of new natural gas is made available through these projects, and if the demand for natural gas in the New England Market does not increase in response, the supply of natural gas in the Connecticut market could be increased through displacement. Regardless of the volume of gas displaced, however, transport of that volume of gas from Connecticut to the New York City and Long Island markets would require modifications to the Iroquois pipeline system (construction of a pipeline loop across the Sound and/or additional onshore or offshore compression) to accommodate the increased volume.

237. The Commission does not use a quantitative acre-to-acre comparison for “land” versus “marine” impacts. If the length of the necessary pipeline is even remotely comparable, there are certainly scenarios in which our analysis would find similar or greater impacts associated with offshore versus onhore construction. Conversely, a shorter onshore pipeline routed through sensitive coastal habitats could have substantially greater impacts than a longer offshore pipeline. Where the pipeline lengths are substantially greater, the longer pipeline will typically have greater impacts. In this case, we are comparing the impacts of a 21.7-mile pipeline that primarily impacts offshore mud habitat to an onshore pipeline that may extend for hundreds of miles through a mixture of land uses including forests, wetlands, residences, businesses, industrial areas, and open space. Due to the substantial differences in scope and impact, we do not believe that this comparison requires any additional information.

i. Reliance on Market Forces

238. The Connecticut Commissioner and the Attorney General submit that the Commission has improperly asserted that its principal regulatory duty is to regulate LNG

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terminal safety and has ignored its legal obligation to evaluate the full range of proposed and reasonably foreseeable alternatives to a given project in order to select the safest and least environmentally damaging alternative. Instead, they argue the Commission has improperly abandoned this obligation and chosen to allow only market forces to determine project alternatives.

Commission Response

239. As the above discussion regarding the final EIS' alternative analysis makes clear, we did not defer environmental matters to market forces but evaluated them under the requirements of NEPA. NEPA is essentially procedural and it does not require the Commission to elevate environmental concerns over other appropriate considerations.[151] NEPA requires that the Commission consider and disclose all significant aspects of the environmental impact of a proposal.[152] Although these procedures are almost certain to affect the agency's substantive decision, it is well-settled that NEPA itself does not mandate particular results.[153]

240. As we explained in the March 20 Order, the Commission has conducted a comprehensive review of Broadwater's proposed LNG import facility under section 3 of the NGA. Section 3 provides that the Commission shall approve such a project unless it finds that the proposal will "not be consistent with the public interest." The March 20 Order found specifically under section 3 that the LNG terminal proposed by Broadwater would be in the public interest because it would enable the introduction of needed new gas supply into the New York and Connecticut region, and would result in only limited adverse environmental impacts with the adoption of a number of mitigation measures. Only after we make such a finding do we leave it to the market to decide whether the project will actually go forward. Relying on the market to decide which projects ultimately are best suited to meet the infrastructure needs of an area best serves the public interest because it allows for the most efficient, cost effective, and timely development of energy infrastructure.

4. Cumulative Impacts

241. The Connecticut Commissioner and the Attorney General state that NEPA requires a reviewing agency to consider the impact on the environment resulting from the

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[151] *Baltimore Gas & Electric Co. v. NRDC*, 462 U.S. 87, 97-98 (1971).

[152] *Strycker's Bay Neighborhood Council v. Karlen*, 444 U.S. 223, 227-28 (1980).

[153] *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989).

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total cumulative effects of the contemplated action and other past, present, and "reasonably foreseeable" future actions.[154] In this case, they assert that the Commission has failed to include a study of the cumulative impacts of all known or planned projects, as well as a full analysis of what alternatives would satisfy project need and purpose and thus has failed to comply with NEPA. They fault the Commission for choosing to evaluate 12 projects and concluding that the impacts "would not substantially overlap temporally with the Broadwater Project . . . ."[155]

242. The remaining portion of their rehearing requests on this subject is directed at the Commission's analysis of Islander East. Specifically, the Connecticut Commissioner and the Attorney General assert that pipeline impacts are permanent and, therefore, even if Islander East is completed before Broadwater, its impacts will be contemporaneous with the impacts from the Broadwater Project. They contend that construction of Islander East will displace hundreds of thousands of cubic yards of sediment and the project will result not just in some temporary construction impacts but in permanent impacts to significant areas of the seafloor.[156]

243. The Connecticut Commissioner and the Attorney General disagree with the Commission's conclusion that even if the projects (Broadwater and Islander East) were constructed simultaneously, "[t]hese impacts would be largely limited to the immediate vicinity of the two projects . . ." and "we do not believe that a significant cumulative impact to benthic habitat in Long Island Sound would result. . . ." According to the Connecticut Commissioner and the Attorney General, this statement is contradicted by the record. They assert that every independent expert agrees that "benthic communities disturbed by trenching and anchor placement" never recover to pre-construction conditions and that pipeline construction damage lasts for decades. They conclude that it is improper and a violation of NEPA for the Commission to claim that it has prepared a cumulative impacts analysis of the Broadwater Project, combined with the known and foreseeable impacts of the Islander East pipeline and other projects, on water quality, benthic environment, fin fish and shellfish resources and the overall ecosystem of Long Island Sound when it has ignored basic, accepted scientific data.

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[154] C*iting* 40 C.F.R. 1508.7 (1990); C*hurchill County v. Norton*, 276 F.3d 1060, 1075 (9th Cir. 2001); *Custer County Action Ass'n v. Garvey*, 256 F.3d 1024, 1035 (10th Cir. 2001); *Mississippi River Basin Alliance v. Westphal*, 230 F.3d 170, 175 (5th Cir. 2000); *Colorado Envtl. Coalition v. Dombeck*, 185 F.3d 1162, 1176 (10th Cir. 1999).

[155] *Citing* final EIS, p. 3-312.

[156] *Citing* final EIS of Islander East, p. 3-71.

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244. They also assert that the Commission's comparative impact statement here is similar to the COE' document which was rejected for an inadequate cumulative impacts analysis in the *Town of Huntington v. Marsh*.[157] They also cite the case of *Oregon Natural Resources Council v. U.S. Bureau of Land Mgt.* (*ONRC*), which they state remanded an environmental assessment performed by the U.S. Bureau of Land Management (BLM) because it lacked the requisite site-specific information and an adequate evaluation of the cumulative environmental impacts.[158] They argue that the Broadwater final EIS suffers from the same deficiencies because important quantitative assessments of the impact of this project are lacking because the underlying information does not exist. They assert that, as in *ONRC*, the Commission has provided only a "conclusory presentation" of a handful of potential impacts without sufficient data and analysis that is insufficient under NEPA.

Commission Response

245. Section 3.11 of the final EIS sets forth the cumulative analysis based on a technically and legally sound definition of the "reasonably foreseeable" projects as required under NEPA. As part of our assessment, we considered all major projects that have been publicly identified that could affect the offshore environments of Long Island Sound and that have been sufficiently developed to allow at least a rough quantification of the potential impacts. In the final EIS, we analyzed cumulative impacts for 8 resource areas and considered 12 regional projects including pipelines, cables, platforms, and dredge disposal sites.

246. In building the list of applicable projects for a review of cumulative impacts, we solicited the input of our cooperating agencies, which include agencies based in New York (EPA, COE, and NYSDOS) and in Connecticut (Coast Guard and NMFS). We believe that our own research combined with input from our cooperating agencies generated a complete list of applicable projects to consider. Based on the analysis in the final EIS, we determined that the project would not constitute a significant impact in combination with other past, present, or reasonably foreseeable projects. Neither the Connecticut Commissioner nor the Attorney General provides any specifics to support its assertion that the list of projects we considered was not appropriate.

247. We found that the Islander East Pipeline Project, if constructed on an overlapping timeline with the project, has the potential to contribute cumulative impacts to the project

[157] 859 F.2d 1134 (2d Cir. 1988).

[158] 470 F.3d 818, 823 (9th Cir 2006).

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area. Both the proposed Broadwater Project and the Islander East Pipeline Project would be within the same general offshore area. While the actual schedule for construction of the Islander East Project is not known, the earliest possible construction start is in 2008. Therefore, construction of the two projects would not overlap unless Islander East was delayed further. Additionally, the type of project, construction methods, and impacts would be similar for the two projects. Each of these projects would result in temporary and minor effects during construction, but each project would be designed to avoid or minimize impacts to water quality, marine resources, and marine transportation. Additionally, significant impacts to sensitive resources resulting from these projects would be mitigated, and mitigation generally leads to the avoidance or minimization of cumulative impacts.

248. In addition, as stated earlier, section 3.3.1.2 of the final EIS contained a summary of several different scientific articles regarding benthic recovery rates that were evaluated. The final EIS also evaluated previous benthic recovery from several pipeline and transmission cable projects located within Long Island Sound (e.g. Cross Sound Cable, Iroquois Pipeline, and the Eastchester Pipeline). The reports examined by the Commission showed that benthic communities in mud habitats, like those along most of the proposed pipeline, typically recover within 1 year and communities that inhabit sands and gravel typically recover in 2 to 3 years (Newell et al. 1998).[159] These general and Long Island Sound-specific technical reports do not support the assertion that benthic communities disturbed by trenching and anchor placement never recover to pre-construction conditions and that pipeline construction damage lasts for decades. We note that the Connecticut Commissioner and the Attorney General provide no scientific studies to support their assertions.

249. Contrary to the Connecticut Commissioner's and the Attorney General's assertion, the Islander East final EIS does not conclude that pipeline installation would result in significant or permanent impacts to the seafloor. Both the Islander East and Broadwater EISs conclude that seafloor impacts would be minor and largely short term. Section 3.11.1.1 of the Broadwater final EIS explicitly considers the seafloor impacts associated with installing both the Islander East and Broadwater pipelines (that is a total of 44 miles of pipeline in Long Island Sound). Our assessment concluded that there is no technical basis to consider the cumulative seafloor impacts of both projects to be significant because seafloor impacts would be limited almost entirely to construction and

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[159] Newell, R. C., L. J. Seiderer, and D. R. Hitchcock, *The Impact of Dredging Works in Coastal Waters: a Review of Sensitivity to Disturbance and Subsequent Recovery of Biological Resources on the Seabed*, Oceanography and Marine Biology: an Annual Review 36:127-178 (1998).

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construction of the two projects would not overlap in time or space. Longer term impacts to the seafloor associated with construction would be highly localized, and any cumulative impacts would be negligible.

250. We also find that the cases cited by the Connecticut Commissioner and the Attorney General to support their assertion that our cumulative impact analysis is inadequate are distinguishable. In *Town of Huntington*, the COE took a narrow view of the proposed project and failed to look at substantially related future actions. Specifically, the COE undertook a NEPA analysis only of its designation of a new dredge waste dumping site, but failed to include a discussion of the types and quantities of sediments proposed to be dumped there. This contrast with the expansive cumulative impacts analysis performed for Broadwater that evaluated 12 projects in Long Island Sound. Significantly, the parties do not specify any other project that should have been evaluated as part of our cumulative impact analysis. In *ONRC*, the court remanded an environmental assessment performed by BLM finding that BLM failed to disclose and consider quantified and detailed information regarding the cumulative impact of the proposed logging project combined with past, present, and reasonably foreseeable logging projects. Notably, in responding to BLM's argument that the EA contained enough information to allow it to determine that the project would have no significant environmental impacts, the court states: "[t]his argument in effect says that the EA is sufficient 'because we say it is.'"[160] In contrast, the final EIS here contains a detailed quantified assessment of the combined environmental impact of the proposed actions.

5. Long Island Sound Stewardship Act of 2006

251. The New York Towns argue that the Broadwater Project violates the recently enacted Long Island Sound Stewardship Act of 2006 (Stewardship Act),[161] which declares Long Island Sound a great national treasure of great cultural, environmental, and ecological importance. They state the Act establishes the Long Island Sound Stewardship Initiative, which requires the identification and preservation of desirable parcels of property adjacent to Long Island Sound for ecological, education, open space, public space, or recreational use. The New York Towns contend the project would conflict with these purposes by allowing Broadwater to permanently moor an FSRU containing ninety million gallons of toxic and flammable liquid natural gas in the center of the Sound, which would draw an average of 28.2 million gallons of seawater, treat it

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[160] *ONRC* at 822.

[161] Long Island Sound Stewardship Act of 2006, Pub. L. No. 109-359, 120 Stat. 2049 (2006).

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with chlorine resulting in the mortality of 131.5 million organism and 274 million eggs, larvae and juveniles.

Commission Response

252. The Stewardship Act authorized funds for acquisition, improvement, and maintenance of natural lands bordering Long Island Sound. The Act's stated purposes are: (1) to identify, protect, and improve upland areas within Long Island Sound with significant value for the ecosystem; and (2) to provide educational opportunities, public access, or open space.[162] As stated in section 3.5.7.2 of the final EIS, we are unaware of an existing or proposed conservation easement associated with the proposed onshore locations of proposed project components (that is, the existing storage yards, warehouses, or office facilities). Further, based on the findings of the final EIS, the proposed project would not pose a threat, as defined by the Act, to upland sites adjacent to Long Island Sound. Because the New York Towns have not identified any onshore locations that would be impacted by the Broadwater Project, we affirm the findings in the final EIS on this issue and deny rehearing.

6. Public Trust Doctrine

253. Suffolk and the New York Towns argue that the enormity of the Broadwater Project, if constructed, and its exclusion zones would violate the state's public trust doctrine, which guarantees the public's access to navigable waters of New York for purposes of commerce, fishing, bathing, and recreation. They maintain that title to public land may only be transferred if it serves the public benefit. Because the project's exclusion zone may span 1.5 miles and the roving safety and security zones may cover an additional mile, they claim the public would be excluded from large portions of public waters at the sole benefit of a for-profit company. Therefore, Suffolk concludes that the Commission's assessment that the project will have minimal impacts on recreational and commercial use of the Long Island Sound is incorrect and the order should be vacated.

Commission Response

254. The Public Trust Doctrine is derived from common law and provides that public trust lands, waters, and living resources in a state are held by the state in trust for the benefit of all of the people. Broadwater's proposed NGA section 3 and section 7 facilities are located in New York state waters in the Long Island Sound and Broadwater

[162] Long Island Sound Stewardship Act of 2006, Pub. L. No. 109-359, section 2(b), 120 Stat. 2049 (2006).

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has filed to obtain easements for these facilities with the appropriate New York state agencies.[163] We note that many other commercial and industrial uses of the Sound have been approved by the responsible state agencies, including eight power cables, three fiber optic cables, two natural gas pipelines, three active dredge disposal sites, two oil transfer platforms, many ferry services, extensive commercial shipping, and commercial vessel lightering[164] (section 3.5.7.4 of the final EIS).

255. In this proceeding, we evaluated the Broadwater Project under the requirements of the NGA and found that implementation of the proposed project with our required measures would meet the energy needs of the region with minimal impacts and would therefore be in the public interest. Issues related to the Public Trust Doctrine are not a part of our review under the NGA and therefore were not addressed in the final EIS or the March 20 Order.

The Commission orders:

(A) The requests for rehearing are denied as explained in the text of the order.

(B) The untimely motions to intervene filed by the NYSDOS and the NYSDEC are denied and their rehearing requests are treated as motions for reconsideration.

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[163] Section 7(h) of the NGA grants federal eminent domain powers to NGA section 7 certificate holders. In contrast, construction authorized under section 3 of the NGA does not convey federal eminent domain powers.

[164] Lightering is generally the process of transferring cargo from larger draft vessels to smaller draft vessels (or vice versa) and may be undertaken to allow the movement of cargo between vessels and port facilities that are too shallow to accept larger draft vessels.

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(C) Broadwater's motion to dismiss the rehearing requests of the Attorney General, the Connecticut Commissioner, the New York Towns, and Save the Sound is denied.

By the Commission.

(S E A L)

Nathaniel J. Davis, Sr.,
Deputy Secretary.

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