Subject: **Submission from the Branford Blue Ribbon Committee**
Resent-From: Islandereast.Comments@noaa.gov
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From: Bill Horne <billhorne48@yahoo.com>
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CC: John Lust <johnblust@sbcglobal.net>, Beth Gilson <egilson@snet.net>, "Terry, work Elton" <telton@branford-ct.gov>

To whom it may concern:

Please find attached comments from the Branford Blue Ribbon Committee in opposition to Islander East's appeal of the finding by the Connecticut Department of Environmental Protection that the Islander East project is not consistent with Connecticut's federally approved Coastal Zone Management Program.

Sincerely,

John B. Lust, Chairman
Branford Blue Ribbon Committee
(by Bill Horne)

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Branford Blue Ribbon Committee

TOWN HALL
BRANFORD CONNECTICUT 06405

To: The Selectmen
Town Hall
Branford, CT 06405

Attention: Mr. John Opie

Re: Islander East Pipeline Company, LLC

The Blue Ribbon Committee was constituted by the First Selectman on September 16, 2001 to consider the impending application by Islander East Pipeline Company, LLC to the Connecticut Siting Council for a certificate of environmental compatibility and public need. The Committee's charge was to gather information about the proposed project and report to the Board of Selectman about the impact of the project on the town. The Committee was composed of an eclectic group of citizens brought together to examine this application from their various viewpoints: Chairman, Danny Shapiro (Inland Wetlands Commission Chairman), Joan Berdick (Branford Housing Council), Bill Horne (Conservation & Environment Commission), John Lust (Planning & Zoning Commission), Al Mignone (Economic Development Commission Chairman), Kyle Nelson (Shellfish Commission Chairman), and Lorraine Young (Board of Finance).

Members of the Blue Ribbon Committee have continued to analyze information submitted by Islander East to various regulatory agencies in its campaign to acquire permits to construct the pipeline. These agencies include the Federal Energy Regulatory Commission (FERC), Army Corps of Engineers (ACOE), Connecticut Department of Environmental Protection (CTDEP), and the US Department of Commerce/National Oceanic and Atmospheric Administration (NOAA). We are indebted to those who have donated their time and effort to understand the Islander East application, study the route of the proposed pipeline, and submit technical documents offering their professional opinions. Without their effort, the Islander East proposal could not have received the careful review that we have been able to conduct.

At the request of the First Selectman, the Committee has completed extensive research into the Islander East proposal, it's stated purpose and project alternatives.

Environmentally it is clear that the proposed Islander East pipeline carries an unacceptable environmental cost, particularly for the unique marine ecosystem of the Thimble Islands. Islander East has failed to conduct the engineering and environmental analyses that would be necessary to support their claims of consistency. They have also failed to provide contingency plans for dealing with the failure of critical aspects of their project, especially the horizontal directional drilling.

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The **purpose** of the project and alternatives to the project are critically important issues because by statute, the Army Corps of Engineers may issue permits only for the least environmentally damaging practicable alternative. Our research shows that Islander East and FERC have construed the purpose of the project in an unjustified and narrow manner in order to tailor it to the Islander East proposal and thereby to eliminate viable alternatives from consideration.

Several potential **alternatives** are available that would provide for an increased supply of natural gas to Long Island with a lower cost, environmental and otherwise. **Thus, there appears to be no unique feature of the Islander East pipeline project that would justify overriding the policy, environmental and design considerations that led the Connecticut Department of Environmental Protection to find that the project is inconsistent with the federally mandated and approved Coastal Zone Management Plan.**

Attached is an analysis of the purpose of the project and project alternatives. It clearly demonstrates this point.

John Benedict Lust, Chairman
Branford Blue Ribbon Committee

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A Response to the Islander East Analysis of System Alternatives
that was filed with the US Army Core of Engineers on May 15, 2003

Project Purpose

As noted in the preamble of this report, the definition of the purpose of the project and the analysis of alternatives are key considerations in the issuing of permits. The project definition used by Islander East (and FERC) is narrow and self-serving.

In filings with FERC, Islander East has used an artificially narrow definition of the market that its project will serve by limiting its market to the companies that signed precedent agreements for receiving gas from the Islander East pipeline on November 1, 2003, excluding other natural gas users on Long Island that signed precedent agreements with Iroquois Gas Transmission System from consideration and acting as though eastern Long Island is a separate market that cannot be served by pipelines to western Long Island. Islander East has also implied that its project is the only one that can supply natural gas from the Sable Island fields in Nova Scotia. FERC has also based its decision to grant certificates to the more environmentally damaging Islander East project on that project's ability to enhance system reliability.

In a letter to Islander East dated May 21, 2003, ACOE notes that the purpose of the project stated in Islander East's application's for permits from ACOE is "to construct and operate a pipeline with the capacity to deliver up to 260,000 Dth/day of natural gas to energy markets in CT, New York City and Long Island, NY." In the same letter, ACOE comments that the project purpose used in the Draft and Final Environmental Impact Statements prepared by FERC (which includes "increase reliability of natural gas delivery services to Long Island by installing a separate natural gas pipeline across Long Island Sound" and "enhancing access to natural gas reserves near Sable Island through proposed interconnection with Maritimes & Northeast Pipeline Company") "appears to be too narrowly defined for a reasonable analysis of alternatives ... which would have less impact on the aquatic ecosystem."

The determination by ACOE that the purpose of the project is simply the delivery of natural gas to markets in New York City and Long Island is appropriate, but including Connecticut in that definition is unjustified, since the areas of Connecticut through which the pipeline passes are already generously served by existing Algonquin and Southern Connecticut Gas Company infrastructure.

Long Island is a geographically limited area of relatively small size. The island is served by only two local distribution companies, both subsidiaries of KeySpan. By any definition of "market", customers in the same geographic area (Long Island) that purchase the same product (natural gas) that is delivered to the same local distribution system constitute a single market. If the systems of the two KeySpan local distribution companies are not sufficiently integrated to be able to effectively transport gas between western and eastern Long Island, additional infrastructure should be created on Long Island before any interstate system additions are considered.

Analysis of Alternatives

Interstate energy transmission projects require a special approach to the analysis of alternatives. Most projects considered by the ACOE and other regulatory agencies are site-specific, in that there is an owner or developer of a particular property who is seeking permission to carry out some activity on that property or at that location. The agency must determine if the project design accomplishes the purpose with the lowest acceptable impact on the environment or in best compliance with the relevant regulations, but the location is not a variable, although the agency may find that the project cannot be conducted on that property in an environmentally acceptable manner.

In the case of interstate transmission projects such as Islander East, the purpose of the project is to deliver energy or fuel from a source or sources in one geographic area (in this case the mainland northeastern US) to a market in another geographic area (in this case Long Island). The applicant does not have an ownership interest in many, or even most of the properties that will be affected by the construction and maintenance of the project. Therefore, it is appropriate and necessary to examine the broadest possible range of realistic alternative routes that could meet the project objectives while having the lowest possible environmental impact. Analysis of alternatives must focus on routes and construction methods, not on the existence of an active proposal by a competitor to build the alternative, as claimed by both Islander East and FERC. Islander East's repeated insistence to the contrary is irrelevant to this analysis.

Possible system alternatives

Several system alternatives to the Islander East pipeline have been identified by FERC and ACOE analysts:

The Tennessee Connecticut-Long Island Lateral System Alternative
The Iroquois Gas Transmission System (IGTS) Eastern Long Island (ELI) System Alternative
The Cross Bay Pipeline System Alternative
The New York Joint Facilities System Alternative

Tennessee Connecticut-Long Island Lateral System Alternative:

Little information about this alternative is available. There were rumors in 2001 about a Tennessee project that would run from the main Tennessee pipelines in central Massachusetts through Connecticut to Long Island Sound, but no application was filed. As summarized in the Final Environmental Impact Statement on Islander East, it would clearly be more environmentally damaging, to say nothing of hugely more expensive. It is thus not a viable alternative and probably not justified by the reportedly weak market on LI.

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The Iroquois ELI System Alternative

This alternative, like all the other alternatives discussed here, is a **route** alternative. It does not depend on an active proposal by another company to construct a pipeline along this route, or on Islander East's desire to avoid constructing its pipeline along this route.

The ELI System Alternative taps into the existing IGTS pipeline 2 miles offshore in Milford and runs for 17.1 miles across Long Island Sound to the same landfall as the Islander East proposal. It's onshore route on Long Island could then follow the route to Brookhaven, and to Calverton if necessary, that is currently planned for the Islander East pipeline.

The environmental impact of the ELI System Alternative would be substantially less than the Islander East project.

- The length of the offshore pipeline would be nearly 25% shorter than the Islander East pipeline.
- The nearshore construction area would be much smaller (dredging 1.4 acres for tie-in to the existing Iroquois pipeline, compared to more than 5.5 acres for the revised clamshell dredging of the HDD transition basin and trench to the point where the mechanical plow can be used.
- There will be no impact to tidal wetland areas or other coastal resources such as tidal flats.
- There would be no onshore impacts in Connecticut.

FERC has stated, without providing supporting data, that 7 miles of 36-inch-diameter pipeline loop would be required in Connecticut to provide the additional capacity in the existing IGTS pipeline. Iroquois stated in its response to the DEIS that the necessary increase in volume delivered can be accomplished by increasing compression. The current level of demand is being met with pressures about 40% below the IGTS pipeline's maximum allowable operating pressure (MAOP) of 1200 psig. IGTS has been granted certification by FERC for additional compression capacity at Brookfield. The existing Iroquois pipe is more robust than the older and smaller AGT pipelines that will be retested and put into service at higher than design pressures and velocities under the Islander proposal. Should looping be required, the 7 miles identified by FERC would cross 30 per cent fewer wetlands and streams than the Islander East pipeline (0.92 miles of wetland crossing vs 3.4 miles for Islander East). It would also completely avoid crossing special land use properties, while the Islander East project will cross six land trust properties (three Branford LT, two North Branford LT and one North Haven LT) and the Trolley Trail recreational trail near Juniper Point.

The Cross Bay Pipeline System Alternative

This alternative, a joint project proposed by Transco (the current owner of the Cross Bay pipeline), Duke and KeySpan (the two parent companies of Islander East), would increase the capacity of the existing Cross Bay pipeline by 125,000 Dth/day by increasing compression. The Cross Bay pipeline runs from New Jersey across outer New York Harbor to Long Beach, Long Island on the southwest shore of Nassau County As noted by FERC in its November 8, 2001 order issuing certificates for the project, the upgrade

would require minimal construction of facilities and would have little environmental impact. On December 7, 2001 the applicants stated that they would not go forward with the project because of a lack of demand. The project could be reactivated. In conjunction with the New York Joint Facilities System Alternative discussed below, the additional 125,000 Dth/day of gas delivery would provide a substantial portion of the natural gas that Islander East proposes to deliver.

New York Joint Facilities System Alternative

Two existing interstate pipelines terminate on Long Island: the Transco Cross Bay (at Long Beach) and the IGTS pipeline (at South Commack). Delivery of gas to eastern Long Island can be accomplished by increasing the capacity of these existing pipelines from the mainland, as discussed above, and enhancing the east-west transportation capacity on Long Island. KeySpan could enhance its ability to receive gas from the IGTS pipeline by establishing a connection at the IGTS station at South Commack, where it now dead ends, in addition to its connection in Northport.

Long Island has several east-west transportation corridors including three expressways and one or two rail corridors. Also, the topography and geology of Long Island is much more conducive to construction projects such as this. There is no bedrock to be blasted, because LI is a glacial terminal moraine. (Note that IE has been willing to drill the river crossings on LI, but not those in CT, suggesting that they anticipate easier drilling there.) The availability of these existing pipelines and corridors supports the conclusions of ACOE and the Connecticut DEP that delivering gas to eastern LI is essentially not water-dependent.

KeySpan is currently enhancing its transmission capacity within Long Island. Industry reports indicate that an interconnection between IGTS and the KeySpan system at South Commack, New York, will be established to provide gas to the Brookhaven Energy LP 580 MW electric generating plant that was approved by the NY State Board on Electric Generation Siting and the Environment (NY Siting Board) on August 14, 2002. Furthermore, testimony submitted by Brookhaven to the New York Siting Board stated that Brookhaven will receive sufficient natural gas for this plant via a previously planned extension of KeySpan's Long Island Expressway 20" lateral to Riverhead at Long Island's eastern end, and that only one additional limited modification to the existing KeySpan local distribution system and no additional pipelines would be required to meet Brookhaven's needs (see page 9-2 of Brookhaven's submission to NYS regulatory agencies, attached below). "The only upgrade that is not already in Keyspan Energy's construction plan is a 2.3-mile-long upgrade along Commercial Street in Garden City, Nassau County, adding a 24" pipeline adjacent to an existing 20" pipeline." Garden City, the location of the upgrade identified in the Brookhaven Energy filing, is well west of the termination of the Iroquois pipeline in Commack, NY, but almost due north of the termination of the Transco Cross Bay pipeline in Long Beach, NY, about equidistant from the north and south shores of Long Island at that point. Thus, this upgrade is likely to be related to the transport of gas from the Transco pipeline and not from the Iroquois pipeline.

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The Islander East Pipeline

Islander East proposes to construct a compressor in Cheshire, CT, that will feed natural gas through two existing lateral pipelines (one significantly older and not designed for the high pressures and velocities that the Islander East pipeline will require) to the metering station in North Haven, CT. From there it proposes to construct a new 24 inch pipeline through North Haven, East Haven, North Branford, and Branford to Long Island Sound at the Tilcon shipping facility at Juniper Point. At that point, it proposes to enter Long Island Sound by horizontal directional drilling to a point approximately 3,500 feet into Long Island Sound and proceed from that point across Long Island Sound to Wading River, NY. Installation of the pipeline from the HDD exit to MP 12, more than a mile away, will be accomplished by conventional clamshell dredging. From MP 12, installation will be by plowing.

The Thimble Islands are situated within the nearshore waters of the Town of Branford at the point where Islander East proposes to enter Long Island Sound. The Thimble Islands consist of a total of 141 islands and exposed rock outcroppings creating a total of 15 miles of coastline within 6.2 linear miles. The work corridor extends through the center of the Thimble Islands complex.

The hummocky topography of the Thimble Islands complex, formed of bedrock, is found nowhere else in Long Island Sound. The geological uniqueness of this island and rocky outcrop complex is only rivaled by the natural diversity it provides. The Thimble Islands typically emerge from relatively shallow waters, approximately 30 feet deep. In addition to this significant area of shallow water-land interface where biological diversity is the richest and most productive, the Thimble Islands area contains unique subtidal conditions that include submerged rock reefs and a diversity of benthic habitats that range from soft mud to compacted sand and gravel. Each of these supports a complex biological community of organisms, each of which are in their own way critical to the overall health and rich diversity of the surrounding marine ecosystem. This area is generally recognized as important colonial waterbird nesting habitat, a waterfowl wintering area, and one of only four primary seal haul-out areas in the State. This productive region currently supports 3 full-time commercial lobstermen and 14 licensed shellfishermen as well as numerous recreational fishermen. Historically, the area supported as many as 5 commercial lobstermen with 15 other part-time lobstermen also fishing the area at one time or another. A 1991 U.S. Fish and Wildlife Service report, Northeast Coastal Areas Study: Significant Coastal Habitats of Southern New England and Portions of Long Island, New York, identifies the Thimble Islands as a significant coastal habitat that is particularly deserving of protection for fish and wildlife habitat and the preservation of natural diversity.

Islander East's analysis of its preferred route is minimal and inadequate. Sediment samples were taken only every mile, accounting for only a small fraction of the area to be disturbed. Near-shore sediment dispersion modeling used unrealistically moderate weather conditions, failing to account for possible worst-case conditions. (A similar failure in planning resulted in marine construction well outside permit windows in the

Hubline project across Boston Harbor, with as yet unknown consequences for lobsters and other important marine organisms.) The significant possible negative consequences of sediment re-suspension on the biological communities of the Thimble Islands area were discussed in testimony submitted by Dr. Carmela Cuomo at the November 5, 2003, hearing conducted by National Oceanic and Atmospheric Administration staff.

As noted above, Islander East has defined the purpose of its project in a way that is tailored to fit the project that it wants to do, leaving little room for identifying less environmentally damaging alternatives that can meet the narrowly defined purposes. The purposes stated by Islander East are:

1. Delivering 260,000 Dth/day of natural gas to eastern Long Island
2. Increasing the security, reliability and flexibility of the existing regional gas delivery system by providing a second separate pipeline across Long Island Sound
3. Meeting the November 2003 in-service date required by Islander East's customers.

FERC acknowledged that the ELI System Alternative was less environmentally damaging than the Islander East plan, but has supported and adopted Islander East's purposes in its justification for granting certificates for a project that is more environmentally damaging than other available alternatives. However, FERC's assertion of Islander East's superiority in meeting these criteria were based on erroneous information and faulty reasoning.

FERC's Illusory Non-environmental Reasons for Favoring the Islander East Project

FERC acknowledged that the ELI System Alternative was less environmentally damaging than the Islander East plan, but chose to grant Islander East the necessary certificates for what it considered the over-riding needs for:

1. Diversifying supply sources.
2. System reliability.
3. Market competition.

The evidence cited by FERC to support the importance of meeting these criteria were based on an unrealistic and inaccurate evaluation of the facts.

1. Islander East is not uniquely capable of providing diversity of supply to the Long Island market by transporting gas from Sable Island in Nova Scotia.

The natural gas pipeline system is highly interconnected in Connecticut. All three interstate pipeline companies (Iroquois, Duke/Algonquin, El Paso/Tennessee) interconnect with one another within an area of about 15 mile radius (Iroquois/Algonquin in Brookfield, Algonquin/Tennessee in Wallingford and Iroquois/Tennessee in Shelton). Compressor plants and looping allow the transfer of gas between systems, so any of the three pipeline companies can transport gas that originates in Nova Scotia to customers downstream of the interconnection points.

Conversely, the gas delivered by Islander and its sister company Algonquin to locations within Connecticut or, hypothetically, on Long Island is a mixture of gas from different geographically distant sources, not solely gas from Nova Scotia. Algonquin transports gas that originates all over North America, and there is no mechanism that keeps gas from different points of origin separated within the Algonquin system.

In addition, a recently completed study of the ability to meet future gas demands from electricity generation in New York State, prepared for the New York State Energy Research and Development Authority and New York ISO by Charles River Associates, indicated that little Sable Island Gas actually reaches New York. The benefit of Sable Island gas to New York is that it meets the demand in New England and thereby displaces demand that had been previously filled by gas from sources to the south and west of the region. This displaced gas is thus available to meet demand in New York (Long Island), and will reach the New York market through pipelines that follow more direct routes than the Islander East pipeline.

Finally, it is not clear how long, and in what quantities Nova Scotia gas will actually be available for shipment to Long Island through Islander East or any other pipeline, given that estimates of reserves of those supplies have been significantly downgraded in recent months.

2. The Islander East pipeline does not uniquely enhance the reliability of the system transporting natural gas to Long Island.

The system interconnections that make it possible for all three companies to transport Nova Scotia gas also make it unnecessary to construct the Islander East Pipeline in order to protect the ability to transport gas to Long Island. Controls at each of the interconnections and in-line isolation valves (required for safety purposes every six to ten miles according to Islander East) allow the isolation of a nonfunctioning section or component and the rerouting of gas around that part of the system. Damage to any of the three companies' pipelines that occurred between any pair of the interconnection points could be circumvented by routing the gas through the other two companies lines. (Interconnections outside of Connecticut provide options for by-passing damage to the north, east and west of the Connecticut interconnections.)

In addition, there is more redundancy in the IGTS pipeline that would feed the ELI System Alternative than in the proposed Islander East system. According to IGTS engineers, IGTS rarely has all compression stations on line at the same time. The loss of any one or two of their stations would not compromise supply to the downstream system. In contrast, the loss of Islander East's Cheshire compression station could result in the loss of at least 45% of Islander East's capacity.

The Islander East pipeline is also more vulnerable to pipeline failure. The antiquated and undersized nature of the Cheshire/North Haven lateral pipelines reduces the reliability of the Islander East system and its ability to deliver the promised quantities of

gas. Delivery of gas from the Algonquin main line to the beginning of the Islander East pipeline in North Haven relies on the integrity of more than 13 miles of paired 10" and 16" pipelines, one of which was installed prior to 1970 and not originally designed to withstand the increased operating pressures of the proposed Islander East system. Also, this older part of the Islander East system will be required to accommodate gas velocities that are almost twice the velocities in the proposed 24" pipe, due to the nearly 80% increase in pipe cross-section area downstream from the North Haven meter station (25 sq in + 64 sq in = 89 sq in into the meter station; 144 sq in + 16 sq in = 160 sq in out of North Haven, not counting gas delivered to the Southern Connecticut Gas Co local distribution network at North Haven). This component of the system is thus more likely to fail than the Iroquois pipeline, which is newer and engineered to withstand significantly higher pressures (1200 psig MAOP vs 900 psig, as stated on page 17 of Islander East's application to FERC filed June 15; 2001 or 814 psig as stated on page 5 of Islander East's application to the Siting Council in December, 2001). (The projected pressure once the Island East pipeline reaches Long Island is closer to 370 pounds per square inch.)

Even if the Iroquois system were to experience a significant loss of compression capacity or needed to isolate a section of the pipeline, the pressure of the remaining system downstream of the problem would fall to a point where gas could transfer from the lower pressure Algonquin or Tennessee system without transfer compressors. (Note that the installation of transfer compressors at the interconnections, as Iroquois proposed in its ELI application for the Brookfield interconnection, would allow routine two-way transfer of gas between all the individual pipelines, thereby increasing the flexibility of the total system when all components are operating properly. This is the kind of system improvements that should be made, not the creation of new pipelines with the attendant environmental consequences.)

FERC argued in its Order on Rehearing and Issuing Certificates (100 FERC ¶ 61,276, paragraphs 100, 101) that "rerouting capacity from other pipelines" [in the event of failure of the existing Iroquois pipeline] "would be dependent on interconnecting pipelines and the feasibility of being able to get that capacity for use on Iroquois' system" and that "getting the rerouted capacity to Long Island would also depend on Iroquois' shippers to contract for that capacity and to find other sources to replace the gas that was lost." This argument applies equally to any component of the gas transportation system and if it were true, it would mean that the Islander is equally incapable of replacing shipping capacity lost in a hypothetical failure within the Iroquois system. Replacing lost capacity on the hypothetically damaged Iroquois pipeline by delivery via the Islander pipeline will also require rerouting capacity on the same pipeline systems (Algonquin, Tennessee) regardless of the route that a new cross-Long Island Sound pipeline will take. FERC failed to explain why the capacity would be available for delivery to the Algonquin compressor in Cheshire but would not be available for delivery to system interconnections at Shelton, CT or Brookfield, CT. FERC also failed to demonstrate why the pipeline with the lower operating capacity is the superior choice for providing back-up capacity in the event of damage to the system. (Islander's maximum operating pressure of 900 psig is only 75% of Iroquois' maximum operating pressure of 1200 psig.)

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FERC incorrectly asserted that the gas contracted for by the shippers using the Iroquois system would be "lost" in the event of a failure within the Iroquois system. In fact, the gas would still be in the pipeline system and available for delivery to the desired point of receipt by any of several routes in the highly interconnected system. Alternatively, the gas in the Iroquois system could be used to fill non-Long Island demand for in the Algonquin and Tennessee systems, freeing gas in those systems for delivery to Long Island customers.

Thus, there is no intrinsic reliability benefit provided by the Islander pipeline relative to other alternative means of transporting natural gas to Long Island, including one that takes off from the existing Iroquois system, such as the ELI System Alternative.

Finally, redundancy is not a certain means for increasing the reliability or complex interconnected systems. A recent National Research Council study states: "There are indications that redundancy has a dark side (in addition to increased costs). The likelihood of hidden failures in any large-scale system increases as the number of components increases. Modeling techniques are only now emerging for the analysis of such hidden failures." *Making the Nation Safer: The Role of Science and Technology in Countering Terrorism. National Academy Press. p.302.*

3. Islander East overstated the need for gas on Long Island in terms of both quantity and timing.

There is much evidence that the need for gas on Long Island is not as is not nearly as great as Islander/Duke/KeySpan claimed in its application to FERC in June of 2001. In their comments to FERC and ACOE, the Environmental Protection Agency and the Department of the Interior have called for the market demand to be reevaluated. Moreover, the process used by FERC to establish market demand is flawed in ways that allows applicants to manipulate the apparent demand to support the construction of new facilities. FERC bases its decisions about the need for additional pipeline infrastructure on precedent agreements between the applicant and potential customers to deliver specific amounts of gas by a certain date. However, these agreements contain escape clauses for both parties that render them essentially non-binding, so the purchasers have no reason to base their agreements on real projected needs. In addition, FERC has allowed the normal customer solicitation process to be corrupted by including precedent agreements by companies that are subsidiaries of a company that has a substantial owner interest in the pipeline. As discussed below, both these factors appear to have tainted the precedent agreements submitted by Islander East in support of its application.

Four companies signed precedent agreements with Islander East. Of those, the AES Endeavor power plant in Calverton (60,000 Dth/day) will not be built in the near future, if at all. (AES has announced that due to financial constraints, it is starting no new projects, and the NY regulatory agency that licenses new power plants has not even seen a public announcement for the project, let alone an application.)

Two of the precedent agreements, for a total of 110,000 Dth/day, were with the KeySpan local distribution companies, which together provide service to all of Long Island. Since KeySpan is a partner in the Islander East project, the inclusion of its precedent agreements in the determination of market need is not reliable. Evidence for the unreliability of KeySpan's precedent agreements is provided by the fact that, on December 7, 2001, Cross Bay Pipeline Company, L.L.C., a partnership of Duke Energy, KeySpan and Transco, declined its certificate to add an additional 125,000 Dth/day capacity to an existing pipeline (FERC document # 2228517), in part because "the market targeted by the Cross Bay project has not materialized" (quoted from the letter from Cross Bay to FERC stating that the project would not be built).

The fourth party to enter into a precedent agreement with Islander East, Brookhaven Energy LP, testified in its application to New York state regulators that it can procure sufficient natural gas with only a limited modification to the existing KeySpan local distribution system and no additional pipelines, as discussed above in the description of the New York Joint Facilities System Alternative.

Conclusion

The proposed Islander East pipeline carries an unacceptable environmental cost, particularly for the unique marine ecosystem of the Thimble Islands. Islander East has failed to conduct the engineering and environmental analyses that would be necessary to support their claims. They have also failed to provide contingency plans for dealing with the failure of critical aspects of their project, especially the horizontal directional drilling.

Several potential alternatives are available that would provide for an increased supply of natural gas to Long Island with a lower cost, environmental and otherwise. Thus, there appears to be no unique feature of the Islander East pipeline project that would justify overriding the policy, environmental and design considerations that led the Connecticut Department of Environmental Protection to find that the project is inconsistent with the federally mandated and approved Coastal Zone Management Plan.

9. FUEL FACILITIES

9.1 Description of the Proposed Gas Pipeline Interconnection

Interconnection, Route, Pressure

This section addresses Stipulation 4, Clause 1 (a), which requires a detailed description of the proposed gas pipeline interconnection(s), including interconnection facilities, pipeline route, size, operating pressure, and the need for new on-site compression facilities.

The natural gas pipeline to serve the Project will be a dedicated service lateral that will interconnect with the Keyspan Energy pipeline located on the south side of the Long Island Expressway. The interconnection facilities will include the pipeline lateral, valves, regulators, metering equipment, service taps and related pipeline facilities to assure safe and reliable service (e.g., fencing and pipeline markers).

The pipeline lateral is proposed to follow along the east side of Sills Road and into the Project site. From the existing pipeline, the lateral pipeline route follows approximately 1,900 feet on Sills Road adjacent to the Project site boundary. The route of the pipeline lateral is shown in Figure 9-1. A typical Keyspan design detail is shown in Figure 9-2. Based on Project operating requirements, the approximate nominal diameter of the lateral pipeline will be 16 inches, with a maximum allowable operating pressure of 350 psig. Booster compressors will be installed on-site to raise the gas pressure to meet the combustion turbines' requirements. The gas compressors are expected to be installed in a pre-engineered building with insulated walls, to be located west of the combustion turbines. The gas compressors will be electrically driven. They will boost the Project's natural gas supply pressure to approximately 750 psig. Individual compressors are sized to serve one unit and are dedicated to that unit.

Construction, Operation and Ownership

This section addresses Stipulation 4, Clause 1 (b), which requires an identification of who will construct, own and operate the proposed gas pipeline interconnection.

The pipeline lateral will be built, owned and operated by Keyspan Energy, up to and including the metering station on the Project site. The pipeline lateral will be constructed by certified contractors in accordance with all applicable safety requirements. Keyspan Energy will likewise install and own the meter, valves and related facilities. The compressors and all other natural gas-related equipment downstream of the metering station will be built, owned, and operated by Brookhaven Energy.

Volume of Gas Required to Serve the Project

This section addresses Stipulation 4, Clause 1 (c), which requires an analysis of the peak hour, peak day, seasonal and annual natural gas requirements of the Project.

Peak hour, peak day, seasonal and annual natural gas consumption depends on the load at which the Project is operating, the ambient temperature, and whether or not steam injection is being used. The peak hour consumption is 3,744 Dth. The peak day consumption is based on 24-hour operation during winter hours, or 89,992 Dth.

Seasonal consumption rates can be estimated as follows. Without steam injection, considering 24-hour operation at 100% load, between 79,344 Dth (summer condition of 80°F) and 89,992 Dth (winter condition of 15°F) would be consumed on a given day. Assuming a very hot summer day (97.5°F), with 16 hours of steam injection, the consumption rate would be 87,024 Dth. Annual consumption, conservatively estimated on the basis of 100% load at all hours of the year (except seven days when each unit will not operate), and with 360 hours of steam injection, is approximately 28,543,824 Dth/year or 81,321 Dth/operating day.

9.2 LDC and Capacity Issues

9.2.1 Impact to LDC, Upgrades

This section addresses Stipulation 4, Clause 1(d), which requires an analysis of impacts to the local natural gas distribution company (LDC), including a description of upgrade requirements.

Because the Project will receive gas from the adjacent LDC infrastructure, upgrades are necessary in order to avoid adverse impacts on LDC distribution capability and reliability. Brookhaven Energy requested, and Keyspan Energy completed, a flow study that addresses what additional upgrade requirements are necessary to provide service to the Project without affecting delivery to other customers. The study included both 30-day interruptible and firm gas transportation. Physical upgrades required for the two scenarios are the same. All upgrades would be within existing Keyspan Energy customer-serving pipeline corridors, and none would create new rights-of-way.

The only upgrade that is not already in Keyspan Energy's construction plan is a 2.3-mile-long upgrade along Commercial Street in Garden City, Nassau County, adding a 24" pipeline adjacent to an existing 20" pipeline. Since this upgrade is not a Project interconnection (it is not for the Project's exclusive use *and* it creates no new rights-of-way), its environmental impacts are outside of the agreed-upon scope of the Application. However, in order to address impacts as completely as possible, a summary of its expected minimal environmental impacts is presented in Section 9.3 below.

Brookhaven Energy notes that Keyspan Energy is currently implementing and planning an upgrade program that is independent of the proposed Project. As part of its ongoing program, Keyspan will be installing 12.8 miles of 20" diameter pipeline from River Road in East Yaphank to Nugent Drive in Riverhead. This is the existing main pipeline route to eastern Long Island. Presently, there is an 8" diameter pipeline serving this corridor. The upgrade is proposed to provide adequate gas supply to existing residential customers, and will be conducted in three phases. Phase I, scheduled to take place in 2001, is the installation of 3.4 miles of pipeline from River Road to Weeks Ave. Phase II, scheduled to take place in 2003, is the installation of 6.6 miles of pipeline from Weeks Ave. to River

Road in Calverton. Phase III, scheduled for 2005, is the installation of 2.8 miles of pipeline from River Road in Calverton to Nugent Drive in Riverhead. It is possible that the construction and operation of the Project could affect the timing of these upgrades, but it is not expected to affect their scope. While all of these projects are scheduled for construction over the next five years, construction schedules are revised annually by Keyspan Energy to reflect development of actual load patterns on the local distribution system. Note that all of the upgrades described above were planned prior to the announcement of the Brookhaven Energy Project and will occur in previously disturbed rights-of-way. Thus, they are not interconnections, as defined in the Stipulations.

9.2.2 Pipeline Capacity

This section addresses Stipulation 4, Clause 1(e), which requires, in part, a demonstration that there will be sufficient available pipeline capacity to support the requirements of the Project at the time of commercial operation.

The overall local gas system owned by Keyspan consists of the former Long Island Lighting Company and Brooklyn Union Gas systems. Together, these systems are served by four pipelines, and Keyspan holds long-term firm transportation contracts on all of them. The four pipelines are Williams-Transco, Iroquois, Texas Eastern Transmission Corporation (TETCO) and Tennessee Gas Pipeline (Tennessee). Keyspan also contracts for underground storage and owns peaking supplies (LNG facilities) to meet gas demand. Keyspan's delivery capability is outlined in Table 9-1.

Table 9-1: Keyspan Local Distribution Capacity

Company	Pipeline Capacity	Underground Storage	Peaking Supplies	Total Firm Capacity
	(MDth/day)			
Keyspan Gas West (formerly Brooklyn Union)	750	779	504	2,033
Keyspan Gas East (formerly Long Island Lighting Co.)	263	294	188	745
Total Keyspan	1,013	1,073	692	2,778

Note: Securities and Exchange Commission 10-K filing for 12/31/99

With its capacity contracts on interstate pipelines, Keyspan is able to purchase natural gas from both Canadian and domestic sources. Keyspan purchases gas on both a long-term basis and on a daily basis in the spot market. Also, it purchases gas at various pricing points along the systems, anywhere between the supply basins and the LDC "gate."

Keyspan's distribution of pipeline capacity on Long Island is as follows:

1. Transco 58.8%
2. TETCO (via Transco) 25.4%
3. Iroquois 9.7%
4. Tennessee (via Iroquois) 6.1%

Total 100.0%

Peak demand on the Keyspan Long Island system is typically between 300 and 400 MDth/day – approximately half of total firm capacity. Record demand days on the system have been as follows: 641 MDth on January 17, 2000 (86% of firm capacity), and 585 MDth on January 19, 1995 (78% of firm capacity).[1] If the Project were to purchase gas on a 365-day firm basis, it would constitute approximately 12% of the firm demand.

In order to ensure sufficient margins, Keyspan Energy has concluded that the Project should take deliveries equally from the Iroquois and Transco systems, and ensure a delivery pressure of 450 pounds per square inch (psi) at the Transco gate. This arrangement, together with the upgrades referenced above, would be sufficient to provide the necessary pipeline capacity to support the requirements of the Project.

9.2.3 Projected Gas Supply and Demand

This section addresses Stipulation 4, Clause 1(e), which requires, in part, a demonstration that there will be sufficient gas supply to support the requirements of the Project at the time of commercial operation.

Although the local distribution system, with the referenced upgrades, is sufficient to accommodate the Project, the long-term outlook for gas supply to Long Island is that there will be a substantial increase due to the addition of incremental gas deliveries from the Canadian east coast, specifically Sable Island supplies to New England markets. Since January 2000, approximately 400 MDth/day of new supplies from offshore Sable reserves have been delivered via the Maritimes and Northeast Pipeline to New England (at Dracut, Mass.). Planned expansions in offshore production levels (up to 1,000 MDth/day by 2010) have induced companies to search for gas markets beyond New England. This search has resulted in several proposals to construct pipeline expansions over to Long Island and the rest of the New York market.

A number of pipelines have filed or are proposing to file expansion projects with the Federal Energy Regulatory Commission. These expansions should directly increase the operational flexibility and reliability of natural gas as an electric generation fuel on Long Island. More than one of these projects is expected to proceed, which would mean that there would be ample pipeline capacity available to serve incremental loads. Table 9-2 lists the pipeline projects that could increase gas deliveries into Long Island.

With respect to natural gas demand, it is expected to increase as more power plants use natural gas for fuel. The current New York State Energy Plan includes a high demand growth case that assumes all new electric generation capacity needs within the planning horizon to the year 2016 will be met through new natural gas-fired generation units located in New York. The high-demand projection for 2016 is approximately 2,200 MMDTh per year (see Appendix V-2). The Project's annual gas consumption (estimated at 28.5 MMDth/year in Section 9.1.3 above) is approximately

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Keyspan Energy Press Release, January 18, 2000.

2% of projected statewide natural gas demand in year 2006 (1400 to 1600 MMDth) and less than 1-2% of the 2016 demand (1500 to 2200 MMDth).

Table 9-2: Proposed Pipelines to Long Island

Project	Sponsor	Capacity (MDth/day)	Gas Source	Planned In-service
Islander East	Duke/Keyspan	250	Algonquin supplies and Atlantic Canada	Nov 1, 2003
East Long Island	Iroquois	160	Western Canada	Nov 1, 2003
CT Long Island	El Paso	450	Tennessee supplies and Atlantic Canada	Nov 1, 2003
Cross Bay	Williams/Duke /Keyspan	750	Gulf Coast	Dec 1, 2002

In conclusion, while the Project demand and other system growth can be accommodated under existing conditions with the upgrades described in Section 9.2.1, Long Island's gas supply is expected to increase dramatically prior to the period of Project operation.

9.2.4 Project's Gas Arrangements

This section addresses Stipulation 4, Clause 1(f), which requires an identification of the nature and extent of natural gas capacity contracts and transportation service as firm, interruptible or both.

The Project intends to use PSC-approved Keyspan Energy tariffs. The transportation services will include firm transportation, interruptible transportation, displacement, and exchange services to increase overall deliverability to the Project.

As a merchant facility, the Project may not have long-term electric sales agreements, nor is it likely to have fixed-price gas purchase commitments to producers or pipelines. The Project will be part of an integrated portfolio of generating facilities in the Northeast, which are owned or operated by subsidiaries of ANP. Its fuel supply will be provided from marketers selling gas from a diversified combination of geographic basins, such as Western Canada, mid-continent, Gulf Coast and Appalachia, as well as through new pipeline capacity being developed in Nova Scotia and northern New England.

Bundled services, including released pipeline capacity, exchange with other marketers and other portfolio supply positions, will be employed to provide supply and pipeline capacity from a variety of upstream and downstream resources. Brookhaven Energy notes that although it may not contract for year round firm transportation, based on the referenced forecasts and use of bundled services, it expects to obtain adequate supplies of gas to operate throughout the entire year.

In addition, affiliates of Brookhaven Energy currently own or have agreements in place for a portfolio of gas supply and firm transportation. Affiliates of the Project have 30,200 Dth/day of firm transportation on Algonquin Gas Transmission (AGT) that can access Brookhaven Energy via

secondary delivery point rights, pursuant to AGT's FERC tariff, into IGTS for further delivery to the Project via Keyspan Energy. Affiliates of Brookhaven Energy also have entered into firm transportation agreements for 50,000 Dth/day of firm transportation on Tennessee Gas Pipeline (TGP) that can access IGTS and Transco via secondary delivery rights. Finally, affiliates of Brookhaven Energy have entered into gas supply contracts for firm bundled delivery to points in Massachusetts via TGP and AGT for volumes of 43,000 Dth per day and 43,000 Dth per day, respectively. These two gas supply contracts allow affiliates of Brookhaven Energy to deliver that gas at alternate delivery points that could include Keyspan Energy for redelivery to the Project. Thus, affiliates of Brookhaven Energy own a portfolio of gas or gas transportation of up to 166,200 Dth/day that could be delivered to the Project. This is almost double the Project's expected maximum demand (approximately 90,000 Dth/day at 15°F).

As a merchant power plant operator, Brookhaven Energy may sell all or a portion of the electric output of the Project via gas "tolling" contracts. Tolling allows third parties to supply their gas to the Project and receive electricity in return for paying the Project a "tolling fee." Thus, Brookhaven Energy will not contract for all of its gas on a firm basis because it then may have to forego a potential tolling opportunity. The daily gas market provides gas for those willing to pay the most competitive price. If Brookhaven Energy does not "toll," the plant gas supply may be purchased in the daily gas market.

As described in Section 9.2.3 above, there are several proposals being made by different interstate pipeline companies to increase gas tranportation capacity to Long Island. Because the Project will be a large consumer of natural gas, several of these entities have approached Brookhaven Energy. If one or more of these proposals moves forward, it will be subject to stringent and comprehensive review by the Federal Energy Regulatory Commission pursuant to Section 7(c) of the Natural Gas Act. In the event one of these projects becomes an alternate source of fuel supply to Brookhaven Energy, it will further enhance the reliability of the Project's fuel supply. Brookhaven Energy's use of any additional available pipeline capacity will be based on maintaining a low-cost, reliable fuel supply.

9.2.5 Compliance with PSC Interruptible Gas Service Order

On August 24, 2000, the Public Service Commission issued an order regarding the preparation for fuel switching by interruptible customers (Case 00-G-0996). The Commission was concerned that "warm weather associated with previous winter seasons had produced some interruptible customers who were unprepared for periods of cold weather and the possibility of interruptions. During the interruptions, many interruptible customers either remained on the system or attempted to purchase alternate fuel on the spot market." As a result, the Commission required gas utilities to ensure that their interruptible customers "have provable storage capacity" for their alternate fuels. Financial disincentives are included in the order for customers who do not cease to take gas deliveries when informed that they are being interrupted.

Because the Project has no alternate fuel, it will either purchase 365-day firm capacity or will be an interruptible customer. If gas supply to the Project is interrupted, Brookhaven Energy will cease to take deliveries. By so doing, the Project will comply with the PSC Interruptible Gas Service Order.

9.3 Gas Upgrade Environmental Assessment

This section addresses Stipulation 4, Clause 3, which requires an assessment of environmental impacts of any upgrades as specified in other stipulations and preamble.

As stated above, the only gas reinforcement that is not already in Keyspan Energy's construction plan is a 2.3-mile-long, 24"-diameter gas pipeline upgrade main under Commercial Avenue near Garden City, Nassau County, within the Town of Hempstead (Figure 9-3). There is presently a 20"-diameter pipeline in this corridor. Since this upgrade is not a Project interconnection as defined in the stipulations (it is not for the Project's exclusive use *and* it creates no new rights-of-way), it is outside of the agreed-upon scope of the Application. However, in order to address impacts as completely as possible, its environmental impact is presented here.

Refer to the attached aerial photograph (Figure 9-4), which illustrates the types of land use that exist near the pipeline upgrade route. The upgrade begins just west of the intersection of Oak Street and Commercial Avenue and follows Commercial Avenue east to Quentin Roosevelt Boulevard. Land use in this section is industrial/commercial with commercial businesses on the south side of Commercial Avenue and railroad tracks and industrial uses on the north side of Commercial Avenue. After crossing Quentin Roosevelt Boulevard, the pipeline would continue eastward along the edge of a railroad right-of-way and passing adjacent to the Mitchel Complex (military housing) and commercial office buildings to the north. After passing by the Mitchel Complex, the pipeline would cross Endo Boulevard, traverse parking lots associated with commercial buildings and then cross under the Meadowbrook Parkway. The pipeline would terminate at Merrick Ave, east of the Meadowbrook Parkway. On the basis of standard practices in the pipeline industry Brookhaven Energy is able to qualitatively describe the following environmental impacts from the proposed 2.3-mile gas upgrade:

Air

The pipeline upgrade will not require additional compression and thus air impacts are not expected. Airborne dust from construction work will be minimal as construction is expected to be a brief process and will be restricted to excavation and backfilling of a narrow trench.

Cultural/Historical

The pipeline will be placed under streets and in a previously disturbed railroad right-of-way. As such, the pipeline will not affect cultural or historical resources.

Land Use

The upgrade will constitute no new land use and will require no additional land area. The duration of construction is expected to last only a few weeks, thereby minimizing inconvenience to abutters. Once installed, the upgraded pipeline will not affect existing residential, commercial and industrial uses in the area.

Land uses within a mile of the upgrade include several institutions and large commercial complexes, and public areas. These include the Roosevelt Mall, the old Roosevelt Raceway, the American Ref-Fuel waste-to-energy plant, the Nassau Coliseum, Hofstra University, and Nassau Community College. Eisenhower Park and residential areas of Garden City are also within a mile of the upgrade (on the east and west ends, respectively). None of these more distant land uses would be pressed to make changes in land use patterns because of this upgrade, and thus would not be affected in an adverse way.

Noise

Noise associated with construction vehicles and tools will be of a short duration. Construction work will only occur during hours that are in accordance with Keyspan Energy's standard practices for pipeline maintenance and construction. Once installed, there will be no noise impact. Note that much of the area already has relatively high ambient noise levels associated with high volumes of traffic on the Meadowbrook Parkway as well as traffic on other streets in the area including Commercial Avenue and Stuart Avenue. Relatively high ambient noise levels are also a result of industrial uses along Commercial Avenue.

Safety

Appropriate safety measures will be taken during pipeline construction, consistent with Keyspan Energy standard practices for pipeline maintenance and construction.

Solid Waste

Any bituminous roadway material and other excavated materials that need to be removed as part of the work will be disposed of at an approved disposal site.

Terrestrial Ecology

The upgrade consists of installing a new pipeline that would follow under a paved street. No tree clearing or other removal of vegetation is anticipated. Thus, no impact to plant or wildlife habitat areas is anticipated.

Traffic and Transportation

The upgrade will require closure of a lane or lanes within the roadway. This work will be managed in accordance with Keyspan Energy's standard procedures for lane closure during pipeline maintenance and construction. Once installed, there will be no traffic impact.

Visual

The pipeline will be located entirely underground in streets and along an existing railroad ROW and thus will not result in visual impacts. The construction area will be resurfaced as appropriate.

Groundwater, Water Supply and Wastewater

If hydrostatic testing of the pipe is performed, it is expected that approximately 290,000 gallons would be necessary during the single testing event. It is anticipated that the water would be procured from a nearby water district and discharged under standard hydrostatic test discharge authorizations that are typical of such maintenance and construction.

Surface Waters and Wetlands

The section of Commercial Street and other areas where the upgrade would occur is not located in or near wetlands, and thus the upgrade does not appear to affect any surface waters or wetlands.

Conclusion

In conclusion, the proposed 2.3-mile upgrade to Keyspan Energy's local natural gas distribution system in Garden City, Nassau County, constitutes a minimal environmental impact of temporary duration, while providing lasting benefits by way of ensuring adequate gas supply to the Project and thus helping to lower Long Island's air emissions.

Note that the above assessment does not address the natural gas interconnection for the Project – the approximately 1,700-foot lateral between the Long Island Expressway South Service Road and the Project. That interconnection is assessed in greater detail together with the Project, its laydown area, and other interconnections, as applicable, within Sections 6 through 17.

9.4 Storage of Fuel Oil for Emergencies

This section addresses Stipulation 4, Clause 2. Clause 2 was developed in response to the Project's proposal – since eliminated – to store, transport, and use backup fuel oil. In the Preliminary Scoping Statement, one million gallons of oil storage were proposed. Prior to finalizing the stipulations and filing its air permit applications, Brookhaven Energy informed the agencies involved as signatories to the stipulations process, as well as local officials and interested parties, that backup fuel oil has been eliminated as a feature of the Project. Thus, this section addresses Stipulation 4, Clause 2 only to the extent it relates to the storage of minimal amounts of fuel oil for emergency generators and backup fire pump.

Use and Replenishment

Clause 2(a), (c), (d) and (e) required, respectively, the following.

(a) *An estimate of the rate of fuel oil consumption at full power output.* This is no longer applicable.

(c) *An estimate of the maximum period that the plant could burn oil without refueling.* This is no longer applicable.

(d) *A description of the proposed method of oil delivery and on site oil delivery infrastructure or offsite interconnects and an estimate of the maximum rate of delivery, given the transportation methods and facilities proposed.* This is no longer applicable. Delivery of diesel for emergency equipment will occur approximately twice a year. Deliveries will be made by a private local oil vendor.

(e) *An estimate of the expected frequency and duration of oil firing of the facility and a discussion of the assumptions and analysis used to arrive at this estimate.* This is no longer applicable.

Storage and Handling

Clause 2(b) addresses the storage capacity of any tanks, a description of secondary containment structures, and measures proposed to prevent, contain or clean up oil spills. Furthermore, Clause 2(f) requires Brookhaven Energy to submit a Spill Prevention, Countermeasures and Control (SPCC) Plan, per 40 CFR 112. Finally, Clause 2(g) requires applications for the appropriate state permits related to bulk fuel oil storage.

The only fuel oil storage at the Project will be small aboveground tanks associated with emergency diesel equipment: a backup diesel fire pump (to be operated in case power from the grid to the firewater pumping system is not available during a firefighting event) and two emergency diesel generators (which are designed to operate only in order to ensure safe shutdown of the plant in case power from the grid is not available; and during testing). Total on-site storage will be approximately 1,700 gallons. This fuel storage will include secondary containment in the form of 110% rupture basins for both the emergency diesel generators and the fire pump storage tanks.

Fuel delivery for the emergency diesel engines is expected to occur very infrequently because these units are only operated during emergencies and for testing. The emergency generator fuel tanks rest on concrete foundations, with the fuel filling connections being housed within the engine enclosure. The emergency fire pump fuel tank will be housed within a building with a concrete floor.

In order to comply with the requirements of Stipulation 4, Clause 2(f), Brookhaven Energy has included a draft SPCC plan in Appendix Z.

Stipulation 4, Clause 2(g) is applicable only if the Project includes storage of 400,000 gallons of fuel oil or more. In that case, the Project would be subject to Article 12 of the Navigation Law, Section 174 (licenses), 17 NYCRR 30 (Oil Spill Prevention and Control -- Licensing of Major

Facilities), 6 NYCRR 610 (Certification of Onshore Major Facilities), and 6 NYCRR 612 through 614 (Petroleum Bulk Storage Regulations).

By eliminating backup oil storage, the Project is no longer subject to some of these permitting programs. Specifically, it is not a major onshore facility and is not governed by the Navigation Law, NYSDOT's regulatory authority under 17 NYCRR 30 or NYSDEC's program under 6 NYCRR 610. However, because the total storage of fuel oil in day tanks associated with auxiliary equipment is 1,700 gallons (falling within a regulatory range between a minimum of 1,100 gallons and a maximum of 400,000 gallons), the Project's oil storage will be subject to NYSDEC's bulk fuel oil registration requirements, pursuant to ECL §17-1009, and the implementing regulations in 6 NYCRR 612 through 614. Key provisions of these statutes and regulations are as follows:

- Tanks must be made of steel and, if sited on-ground, underlain by impermeable barriers, with a leak monitoring system and cathodic protection for the bottom of the tank or equivalent;

- Exterior surfaces of all new aboveground storage tanks must be protected by a primer coat, a bond coat and two or more final coats of paint, or equivalent;

- All new underground piping systems must be made of steel or iron that is cathodically protected, fiberglass reinforced plastic or equivalent. However, all fuel oil storage day tanks will be directly connected to the emergency generating equipment, and no underground piping is expected.

It also should be noted that Articles 7 and 12 of the Suffolk County Sanitary Code include detailed permitting programs related to various types of hazardous materials, including all petroleum distillate oils. They are addressed in Section 10.4 (Compliance with Local Laws). According to the Suffolk County Department of Health Services, the County has, through appropriate NYSDEC filings pursuant to ECL §17-1017, obtained approval to enforce the Sanitary Code as a local law that provides "environmental protection equal to or greater than" the protection accorded through the above-described regulations. For that reason, this local law is not pre-empted by the state law.

Subject: **Third submission by Branford Land Trust for inclusion in record of Islander East appeal**
Resent-From: Islandereast.Comments@noaa.gov
Date: Wed, 19 Nov 2003 14:43:26 -0800 (PST)
From: Bill Horne <billhorne48@yahoo.com>
To: IslanderEast.comments@noaa.gov

Attached please find one pdf file to be included in the record of Islander East's appeal of the decision by the Connecticut Department of Environmental Protection denying consistency with the Coastal Zone Management Plan. This is a third submission submitted electronically today by the Branford Land Trust. (Note that the earlier submissions spoke of only two submissions. This is an additional submission.)

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11-19-03 submission 3.pdf	**Name:** 11-19-03 submission 3.pdf **Type:** Acrobat (application/pdf) **Encoding:** base64 **Description:** 11-19-03 submission 3.pdf **Download Status:** Not downloaded with message

BRANFORD
LAND
TRUST since 1967
P.O. Box 254
Branford, CT 06405

"The mission of the Branford Land Trust is to preserve open space in Branford and to promote our community's appreciation of Branford's diverse natural features."

November 19, 2003

Mr. Branden Blum
Senior Counselor
c/o Office of Assistant General Counsel for Ocean Services
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
1305 East-West Highway
Room 6111, SSMC-4
Silver Spring, MD 20910

Dear Mr. Blum:

In this transmission, the Branford Land Trust is submitting one document for inclusion in the record for Islander East's appeal to the Secretary of Commerce of the finding of inconsistency with the Connecticut Coastal Zone Management Plan, as we were invited to do by Mr. James Walpole at the November 5, 2003 hearing held in New Haven, CT. This document has been submitted by the Land Trust to one or more of the regulatory agencies who have considered the Islander East project. It contains a map that shows how Islander East is planning to install its pipeline along side or into a small stream that is listed in Islander East's application as potentially supporting anadromous fish. The stream lies within a mile of the shore of Long Island Sound, and thus any environmental degradation that occurs in this area is clearly relevant to your consideration of the impact of the Islander East project on the coastal zone.

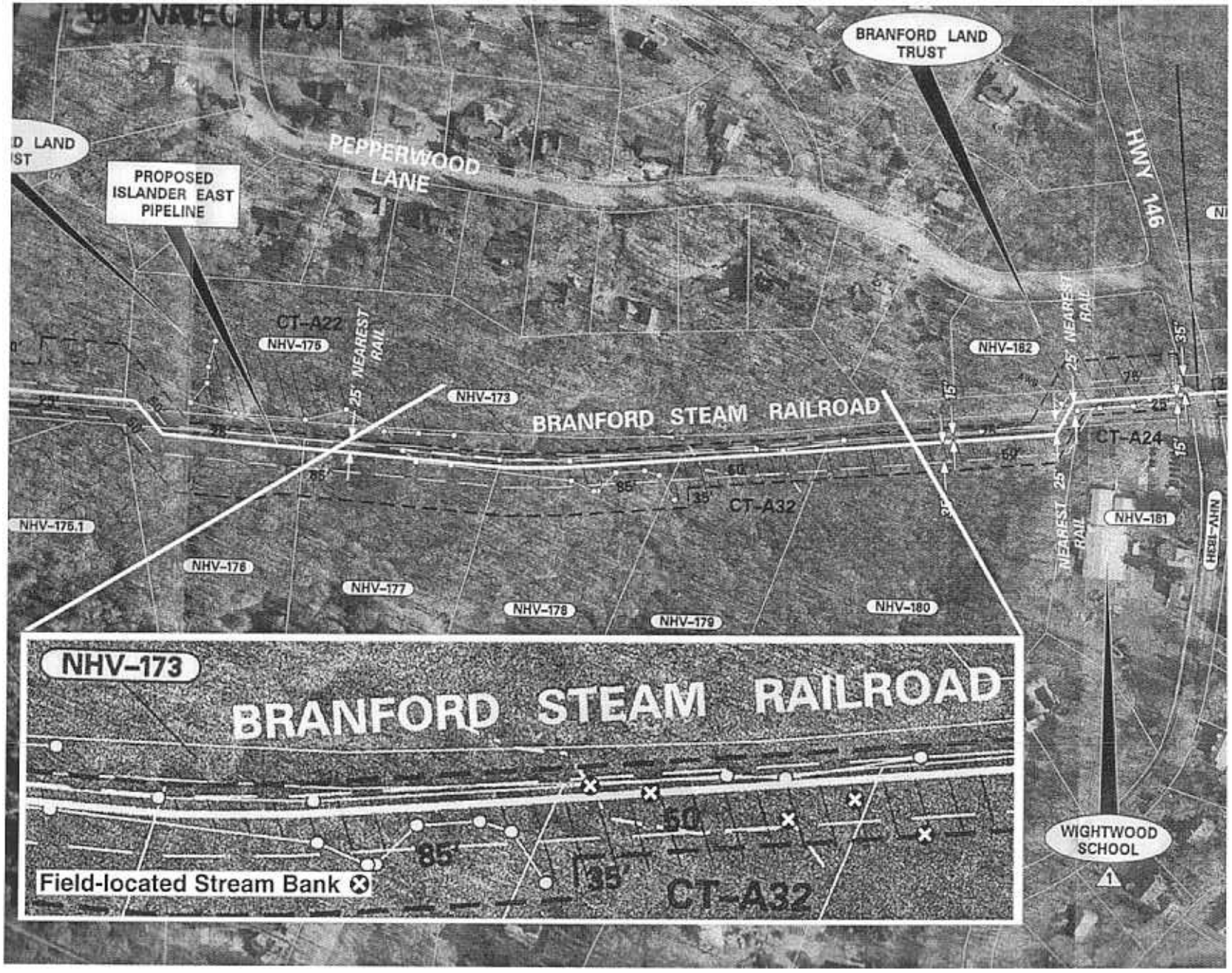
Thank you for your consideration.

Sincerely,

Joan Merrick
President
Branford Land Trust

Bill Horne
Chair, Natural Resources Committee
Branford Land Trust

A tachmen 0


BRANFORD LAND TRUST
PROPOSED ISLANDER EAST PIPELINE
PEPPERWOOD LANE
HWY 146
CT-A22
NHV-175
NEAREST RAIL
NHV-173
BRANFORD STEAM RAILROAD
NHV-182
CT-A24
CT-A32
NHV-175.1
NHV-176
NHV-177
NHV-178
NHV-179
NHV-180
NHV-181
WIGHTWOOD SCHOOL
NHV-173
BRANFORD STEAM RAILROAD
Field-located Stream Bank
CT-A32

Distances of brook from nearest track, determined 1/13/02 by Bill Horne and Carol Lemmon.. At points less than 900' from 146, stream is on the west side of the tracks. More than 900' from 146, the stream is on the east side.

Point along track	Distance from track to edge of brook
Wetland flag CT-A32-002-X	More than 75'? (not possible to measure whole distance through greenbriar thicket)
Wetland flag CT-A32-003-X	75'
740' N of 146	39' (Brook turns away from track here)
Wetland flag CT-A32-004-X (800' N of Rt. 146)	45' (stream about 3-4' wide at this point)
872' N of 146	23'
900' N of 146 (about 95' S of 1000')	17' (on west, just below outfall; stream about 6'-8' wide at this point)
953' N of 146	12'
1005'	58' (area between track flooded, frozen)
1080'	31'; 4'-5' wide
1200'	
Wetlands flag CT-A22-004-X	
1400'	
Wetlands flag "CT-A22-005-X connect to 1" (200' N of 1400')	97', continues N more or less parallel to track

Subject: **Second 11-19-03 submission for the record of Islander East's appeal**
Resent-From: Islandereast.Comments@noaa.gov
Date: Wed, 19 Nov 2003 14:26:35 -0800 (PST)
From: Bill Horne <billhorne48@yahoo.com>
To: IslanderEast.comments@noaa.gov

Attached please find one pdf file to be included in the record of Islander East's appeal of the decision by the Connecticut Department of Environmental Protection denying consistency with the Coastal Zone Management Plan. This is the second of two files being submitted electronically today by the Branford Land Trust.

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11-19-03 submission 2.pdf	**Name:** 11-19-03 submission 2.pdf **Type:** Acrobat (application/pdf) **Encoding:** base64 **Description:** 11-19-03 submission 2.pdf **Download Status:** Not downloaded with message

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"The mission of the Branford Land Trust is to preserve open space in Branford and to promote our community's appreciation of Branford's diverse natural features."

November 19, 2003

Mr. Branden Blum
Senior Counselor
c/o Office of Assistant General Counsel for Ocean Services
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1305 East-West Highway
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Silver Spring, MD 20910

Dear Mr. Blum:

In this transmission, the Branford Land Trust is submitting one document for inclusion in the record for Islander East's appeal to the Secretary of Commerce of the finding of inconsistency with the Connecticut Coastal Zone Management Plan, as we were invited to do by Mr. James Walpole at the November 5, 2003 hearing held in New Haven, CT. These documents have been submitted by the Land Trust to one or more of the regulatory agencies who have considered the Islander East project. It contains inventories of plants and animals that are found in the three Branford Land Trust properties, and a list provided by Dr. Noble Proctor, a world-renowned ornithologist who has lived and worked in Branford for decades.

This document provides evidence of the environmental damage that the pipeline can be expected to produce along its route through Branford. The area discussed in this document lies within a mile of the shore of Long Island Sound, and thus any environmental degradation that occurs in this area is clearly relevant to your consideration of the impact of the Islander East project on the coastal zone.

Speaking for our more than 700 members, we call on you to uphold the decision of the Connecticut Department of Environmental Protection. The Islander East project is a particularly disturbing example of the disregard of the environment and the concerns and needs of the public by large corporations in their pursuit of excessive profits.. Looking back on the last two centuries, it is all to easy to find evidence of environmental

destruction that has been the careless by-product of business activities, from strip mines to chemical waste dumps to drained and filled wetlands. Every time, the companies that benefited from these destructive activities have pocketed their profits and left the scene, leaving society to restore at great cost what can be restored, and doing without the rest. The project that you are now considering is a case where reasonable alternatives exist that will still allow Islander East to accomplish its goal of delivering gas to Long Island at the least cost to an important environmental resource while making a reasonable profit.

Thank you for your consideration.

Sincerely,

Joan Merrick
President
Branford Land Trust

Bill Horne
Chair, Natural Resources Committee
Branford Land Trust

Branford Land Trust
Submission to the Federal Energy Regulatory Commission

Re: Islander East Natural Gas Pipeline
Docket Numbers: CP01-384-000, CP01-385-000, CP01-386-000

Document I
Environmental Impact

The Islander East Natural Gas Pipeline, if constructed as proposed, will cross three Land Trust preserves (NHV-169, NHV-175/NHV-182, NHV-194), and indirectly impact other nearby undeveloped wetlands and uplands, including a town-owned nature and recreation trail that is heavily used by residents of Branford and other towns in the region. **Its environmental impact on the properties in question is a major concern and will be addressed in this report.**

A second accompanying document addresses the unequivocal importance of protected open space to the Branford community and the potential significant threat to the Land Trust's economic viability.

Dedicated nature preserves such as the Land Trust properties along the route of the Branford Steam Railroad provide a variety of benefits to the community, the state and the Long Island Sound region, and these benefits will be enjoyed in perpetuity. The wetlands and woodlands purify the air and the water enhancing the community and protecting Long Island Sound. They provide buffers between residential neighborhoods and business or industrial areas, and recreational opportunities for residents. Wildlife finds food and shelter. Undeveloped corridors such as the one that runs along the Branford Steam Railroad track provide animals with a way to move between larger preserves.

Our coastal region supports the largest human population in Connecticut and what preserved open space we have is fragmented and tucked between developed areas, making each preserve much more important than it would in a less developed area. This is particularly true of Branford, with a population density of over 1000 per square mile. **When its nature preserves, already sensitive because of their relative scarcity and small size, are invaded and further fragmented by development of any kind, wildlife and people lose.**

Two of the Land Trust properties that the pipeline is projected to cross are heavily wooded uplands and/or wetlands that will have 75 foot corridors clear-cut for the construction process. A 50 foot-wide permanent right-of-way will then be maintained in a clear-cut state for the indefinite future. (In wetlands, 10 feet will remain completely cleared and an additional 10 feet on each side will have trees over 15 feet in height removed periodically.) **This represents a**

major change in the character of the each property and a significant degradation of its environmental value. In the case of the third property, a buffer strip of trees surrounding a pond will be reduced or removed to provide the proposed width of cleared right-of-way. (Detailed biological inventories for each property are available in Appendix II.)

Gould Lane (NHV-169): largely a forested swamp with a shallow pond. The pond and wetland provide storage and purification of storm water runoff, and habitat for ducks, birds and wetland edge animals. While the end of the property nearest the Tilcon/Branford Steam Railroad track is mowed, the proposed pipeline construction path encroaches on the western edge of the pond, running right at the edge of the wooded thicket and promising to require the removal of the entire woody edge. Trees along this wooden edge are dotted with nests of the resident green heron and Baltimore oriole and others. In addition without careful attention to soil and erosion measures, work in this area could result in sedimentation of the pond.

Anderson Wilcox (NHV-175, NHV-182): construction is largely limited to the southern end of the property where the Tilcon line crosses Route 146 (a state-designated Scenic Road). At this point there is a significant red maple-tussock sedge swamp with a mixed shrub swamp border of red maple, alder, sweet pepper bush, winterberry, willows and standing water. A perennial watercourse, the upper reaches of Pine Creek (identified as Stony Creek in the Islander East application), runs through this wetland. The Connecticut Department of Environmental Protection lists Pine/Stony Creek as a cold water fishery capable of supporting anadromous fish (IE application, Appendix 2, page 2-7, Table 2.2.2-1). (Note that "restoring anadromous fish habitat is an important part of resource management at the [Connecticut] DEP". *SoundOutlook, a Newsletter of the Connecticut Department of Environmental Protection, October 2001, p.2)*

Red maple swamps are significant wildlife habitats, especially for nesting birds. More than 40 species of birds breed in red maple swamps including black ducks, wood ducks, catbirds, ovenbirds, and a variety of warblers. These swamps often contain vernal pools that are breeding sites for spotted salamanders and wood frogs, and foraging sites for larger mammals. The vegetation of this red maple swamp indicates that in addition to seasonal flooding there is standing water present causing organic matter to accumulate. This organic matter supports the mixed shrubs that form a layer surrounding and beneath the tree canopy of the red maples. These wetlands are highly dynamic ecosystems where a change in the hydrology can significantly alter plant and animal populations, to the point of causing the wetland forest to die.

This red maple swamp has been designated as the staging area for the crossing of Route 146. This will involve the stockpiling of rock and soil and possibly the digging of a pit to accommodate boring under Rt. 146. The presence of Stony Creek makes this a particularly unsuitable location for spoil storage and a drill pit.

Goss (NLV-194): this 15 acre property in Pine Orchard just off Scenic Route 146 is a classic oak-hickory forest community that provides important habitat for wildlife. There is a biologically diverse freshwater pond on the eastern edge. Several species that are state-listed as

Threatened or Of Special Concern have been sighted here including the great egret, snowy egret and Cooper's hawk (see Appendix II).

Great blue herons, green herons, black ducks, mallards, great egrets and snowy egrets use the pond. There is an abundance of aquatic plants, dragonfly and damselfly larvae, aquatic insects such as back-skimmers and water striders and green frogs. It most likely serves as a vernal pool in the spring.

The woodland provides food and shelter for fox, chipmunks, squirrels and other rodents, and for birds, such as wood ducks, wild turkeys, woodpeckers, blue jays and thrashers. Decaying heavy leaf litter provides food and shelter to small rodents, amphibians, insects and arthropods which in turn provide food for larger mammals, hawks and owls.

The proposed pipeline route loops inland approximately 200 feet, cutting into the very heart of the mature woodland to bypass the Goss pond. Clear-cutting a 75 foot wide corridor along this steep slope, and the likely necessity of blasting through the ledge that is present, creates a challenge to avoid erosion and sedimentation of the very pond the looped detour was designed to protect. There is just no good way for locating a 75 foot-wide construction path here.

The processes proposed for the restoration of the "temporary" construction areas are grossly inadequate, especially with regard to the Goss property. The clearing would remove more than 60 trees 12" in diameter or greater (see Tree Census, Appendix III). The restoration process proposed (allowing trees to regrow from roots left in place during construction) would require decades to reestablish some semblance of the existing condition. In addition, this type of disturbance also encourages the establishment of rapidly growing non-native invasive plants. The Land Trust, with help from local Boy Scouts and other volunteers, has been actively engaged in removing invasive plants from its properties in order to maintain native habitat on its properties, and creating a 75 foot wide swath of disturbed ground vulnerable to invasives through the center of its properties would be a major setback to its efforts. The existing Algonquin Gas Transmission Co. right of way on the North Branford Land Trust property (NHV-090) is severely impacted by invasive plants. The periodic mowing of the area used to keep the right of way cleared actually encourages their growth.

Thus, routing the pipeline through the Goss woodland fragments and changes the ecology and character of this nature preserve. It also crosses and recrosses the Around Branford Trail. This segment of the 28 mile trail will no longer pass through a secluded woodland, but will become a mowed utility right of way.

Despite Islander East's claim that they will provide a means of crossing the trail during construction, it is unlikely that traversing the construction site while work is in progress (which is the time of day that hikers use the trails) will be easy, pleasant, or even safe. Thus the trail is likely to be effectively severed while clearing, grading, blasting, trenching, and laying the pipe are in progress.

In the longer term, the **cumulative environmental impact** of constructing a utility right of way on dedicated conservation land is a critical concern.

This application makes two points clear: The first is that undeveloped areas are being targeted for utility right of ways regardless of their status as dedicated open space preserves. Islander East has proposed two alternative routes for this pipeline – the Short Beach Alternative running through public water supply watershed, the Land Trust's Short Beach Preserve and adjacent open space preserves in the most densely populated part of Branford, and the Sachem's Head Alternative, which crosses Branford Land Trust and Town of Branford preserves to reach neighboring Guilford, where it runs through Guilford Land Conservation Trust properties and the Cockaponsett State Forest on its way to Long Island Sound.

The conscious choice of undeveloped land, and in many cases dedicated conservation land, **because it represents the most economical route for getting gas to market** (as Joe Reinemann, Islander East Environmental Project Manager, testified to a Branford town committee considering the pipeline) contributes to the increasing fragmentation and destruction of natural wildlife habitat. Perhaps on a regional scale this may not seem particularly damaging, but **on a local scale this represents the destruction of critical, irreplaceable habitat.**

The second point made by this application is that the presence of a utility right-of-way across dedicated open space or nature preserves creates a high probability of additional facilities in the future. This point is illustrated by the impact of the proposed Islander East pipeline on holdings of the North Branford Land Trust (NHV-087, NHV-090) and North Haven Land Trust (NHV-015). These properties are already crossed by an Algonquin Gas Transmission Co. pipeline. The Islander East project proposes taking additional area aside the existing right-of-way for the new pipeline. In addition, the temporary construction area is sited on the undisturbed land trust holdings, not on the already disturbed existing right-of-way, further increasing the impact on dedicated open space.

If the proposed gas pipeline were to be installed across Land Trust property, it is not far fetched to imagine that we could soon be hearing from Islander East or some other energy transmission company that the energy demands of Long Island require additional facilities that should then be sited along this increasingly industrialized corridor. Indeed, Islander East has already responded to a question about whether the proposed pipeline will have sufficient capacity to meet the predicted demand by stating that it will increase capacity by "looping", that is by installing a second pipe parallel to and connected to the first pipe. Thus, Islander East is already planning to encroach even further into the Land Trust's property.

The impact of even the single pipeline proposed in the application is a quantum leap from that of the existing railroad, nearly as great as if the proposed pipeline route were through a completely undeveloped area. The railroad corridor is narrow, more like a

country road than an industrial site, and has a minimal impact on the surrounding undeveloped properties, including the Branford Land Trust preserves. Large trees growing beside the tracks form a nearly complete canopy over the track and shade the wetlands that are found in the adjacent areas. Removing these trees to a distance of 50 to 75 feet from the track will completely change the nature of the area to the detriment of the wetlands along this corridor.

The Branford Land Trust takes seriously its commitment to protect the preserves left in its trust. Branford is a highly developed community, and many of its open space preserves such as Goss, Anderson-Wilcox and Gould are not large, but they are the links of the chain of valuable green space throughout the town. The Land Trust has worked hard to establish this system, targeting properties adjacent to existing preserves for acquisition. Maintaining the high environmental quality and integrity of this system is of the highest priority. These preserves are especially sensitive to further fragmentation because of their limited size. The construction of a natural gas pipeline as presented in the Islander East proposal will devastate them.

Dedicated citizens have worked for decades to preserve some bits of open space as a legacy to pass along to future generations of Branford residents. It is unconscionable for the federal government to hand huge corporations such as Duke Energy and KeySpan the power to step into a small community and confiscate the dedicated conservation land that this community has worked so hard to protect.

Appendix I
Recommendations

Alternatives

The regulatory agencies that will rule on this application must consider alternatives beyond the narrow and unpalatable options offered by Islander East. The main Algonquin pipeline runs the length of the state from Danbury to Killingly. Numerous transportation corridors (highways, railroads and other gas transmission pipelines) offer alternative routes from the main Algonquin pipeline to Long Island Sound. One alternative route from the Algonquin facilities in Cheshire to Long Island Sound would be to follow the Amtrak corridor parallel to Interstate-91 from North Haven through Hamden to New Haven. This route passes through a truly industrial corridor with many more options for avoiding environmental resources along the way than are present in the route through North Branford and Branford. Islander East should be directed to evaluate this and other possible routes. Another would be to place the Islander East pipeline within or along side the existing Iroquois pipeline right of way.

In addition, other gas transmission companies are reported to be preparing applications to the Commission for permits to construct pipelines from Connecticut to Shoreham, NY [see attached copies of articles from New England Gas Association News (March-April, 2001, issue) and The Hartford Courant (July 22, 2001 issue)]. At least one of these proposals, by Iroquois Gas Transmission System, L.P., will have significantly reduced environmental impact, since it involves running a lateral pipeline from the existing Iroquois underwater pipeline off shore of Milford, CT (Hartford Courant, July 22, 2001, and map provided by Iroquois). The Islander East proposal must be considered in conjunction with the other proposals if Long Island's needs for natural gas are to be supplied with the least environmental impact.

Construction and Post-construction Management

1. A permanently cleared 50 ft. wide right-of-way is excessive where the pipeline crosses dedicated conservation areas where construction activities that might endanger the pipeline would not be permitted. Narrow permanent rights of way (much less than 50'in width) should be required for sensitive areas including nature preserves.

2. Construction techniques developed for the installation of pipelines across hundreds of miles of unbroken forest is inappropriate for working in the midst of densely developed residential communities. Islander East has stated that construction techniques exist that allow work to proceed in narrow corridors where buildings have been erected right to the edge of an existing pipeline right of way. These techniques should be required if the pipeline must pass through permanently protected conservation land.

3. Large or unique trees, as identified by landowners, should be flagged and protected along the pipeline route, especially on conservation land.

4. Staging areas and storage areas for soil and rock should be at least 100 feet from all watercourses and wetland areas and positioned to minimize erosion and other impacts on wetlands.

5. The route of the pipeline should avoid recreation and hiking trails.

6. Both the temporary and permanent right of ways should be replanted with the largest mature trees and shrubs that are compatible with the requirements for maintaining the pipeline. It is insufficient to scatter some seeds of herbaceous plants and otherwise let nature take its course in reestablishing the vegetation. Very different plant communities develop in sunny and shaded natural areas. Therefore, a permit should carry the condition that temporary construction areas in wooded uplands and wetlands are replanted with trees that are as large as possible and in numbers and species that are sufficient to return the site to its pre-existing conditions within as short a time as possible.

7. A cleared right of way will become over-run with non-native invasive plants unless frequent and active management is implemented to remove the invasive plants. The management plan proposed by Islander East, mowing once every 3-4 years, will only encourage such infestation. The Land Trust should be provided with a guaranteed income source to pay for the cost of performing the necessary removal on a yearly basis.

Appendix II

Biological Inventory of Branford Land Trust Holdings Adjacent to Tilcon Railroad, in Branford, CT

Carol Lemmon

Based on personal observations during several visits between July and Early November, 2001

4 November, 2001

Goss (NLV-194): The property is a classic example of the oak-hickory forest community that appears on the coastal plains in Connecticut and is an important habitat for our wildlife. This climax hardwood community has an overstory of co-dominant oaks and hickories. There are numerous large scarlet, chestnut, black, red and white oaks. Large hickories include pignut and mockernut. Other trees which are present include a nice beech clone, black birch, sassafras, tulip-tree, and ash. Additionally, there is an important diverse understory of herbaceous plants and woody shrubs such as mapleleaf viburnum and blueberries, both highbush and low, that provide food and shelter to wildlife. The oaks and hickories provide acorns and nuts, the major part of the hard mast crop of this community which serves as the principal food source for a variety of mammals such as fox, chipmunks, squirrels and other rodents, and for birds, such as wood ducks, wild turkeys, woodpeckers, pheasants, ruffed grouse, blue jays and thrashers. An important aspect of these communities is the slow decay of the leaf fall due to the tannic acids, creating a heavy leaf litter that provides food and shelter to small rodents, amphibians, insects and arthropods. These in turn provide food for larger mammals, hawks and owls. (2,3,4,10).

The route of the pipeline on the Goss property runs up and across an eastward facing slope, studded with many enormous boulders, that appears to be underlain by a continuous rocky ledge to the crest of the slope. At the base of the slope is a biologically diverse fresh water pond, approximately 210 feet in length and approximately 35 feet wide. Great blue and green herons, black ducks, mallards and egrets (both great and snowy) were observed using the pond. There is an abundance of aquatic plants, dragonfly and damselfly larvae, aquatic insects such back-skimmers and water striders, and green frogs. It most likely serves as a vernal pool in the spring.

This woodland preserve and the pond lie across the Tilcon railroad track from a large salt marsh. A fringe of forested habitat much improves the wildlife support function of salt marsh for wildlife such as fox, raccoon, and wetland birds such as the great blue herons that roost in upland trees. It also enhances the functions of the pond. A wooded buffer protects disturbance-sensitive wildlife from loud traffic noise and lights, as well as providing dens, cover, and food to those species that feed and breed in these green

corridors and salt marshes tucked in between developed sterile suburban areas. Its presence is particularly important here because the property on the other side of the Goss property from the marsh is a golf course, a relatively sterile open area, where pesticides and fertilizers are applied.

The following species of mature trees provide the overstory of this area of the Goss preserve:

Red Oak, *Quercus rubra*,
American Beech, *Fagus grandifolia*
White Ash, *Fraxinus americana*
Black Birch, *Betula lenta*
Eastern Hemlock, *Tsuga canadensis*
Chestnut Oak, *Quercus prinus*
Scarlet Oak, *Quercus coccinea*
Sassafras, *Sassafras albidum*
Tulip-tree, *Liriodendron tulipifera*
Mockernut Hickory, *Carya tomentosa*
Pignut Hickory, *Carya glabra*

The understory is composed largely of the following species:

Maple-leaf Viburnum, *Viburnum acerifolium*
American Chestnut, *Castanea dentata*
Low Blueberry, *Vaccinium spp.*
Highbush Blueberry, *Vaccinium corybosum*
Mountain Laurel, *Kalmia latifolia*
Christmas Fern, *Polystichum acrostichoides*
Spotted Wintergreen, *Chimaphila maculata*
False Solomon's Seal, *Smilacina racemosa*
Jack-in-the-Pulpit, *Arisaema atrorubens*
Horsebalm, *Collinsonia canadensis*
White Baneberry, *Actaea pachypoda*
Canada Mayflower *Maianthemum canadense*
Indian Pipe, *Monotropa uniflora*

Birds seen at pond,

Green Heron
Tree Swallow,
Mallard,
Great Egret **(Threatened)**
Snowy Egret **(Threatened)**
Great Blue Heron
Black Duck
Sharp-tailed Sparrow (across from pond) **(Species of Special Concern)**
Broadwinged Hawk
Carolina Wren

Kingfisher
Red-winged Blackbird
Common Tern
Herring Gull
Eastern Kingbird

Birds seen or heard on location

Crows
Mockingbird
Catbird,
Pair of Red Shouldered Hawks (**Species of Special Concern**)
Turkey Vulture
Song Sparrow
Red Bellied Woodpecker
Blue Jay
Red-Tailed Hawk
Broad Tailed Hawk
Phoebe
Chickadees
Great Horned Owl
Cooper's Hawk (**Threatened**)

Birds seen in salt marsh across from Goss pond

Great Egret (**Threatened**)
Snowy Egret (**Threatened**)
Glossy Ibis (**Species of Special Concern**)
Sharp-tailed Sparrow (**Species of Special Concern**)
Least Bittern (seen frequently during migration) (8) (**Threatened**)
King Rail (mated with clapper rail; nested 2001) (8) (**Endangered**)
Marsh Wren, (8)
Great Crested Flycatcher

Migratory dragonflies in the vicinity of the Goss pond

Common Green Darner *Anax junius*
Canada Darner *Aeshna canadensis*
Lance-Tipped Darner *Aeshna constricta*
Ruby Meadow Hawk *Sympetrum* spp.

Mammals

Eastern Chipmunk
Gray Squirrel
Red Fox
Opossum
Coyote

Rabbit

Reptiles

Eastern Box Turtle *Terrapene c. carolina* **(Species of Special Concern)**

Anderson Wilcox (NHV-175, NHV-182): At the southern end of this preserve (NHV-182) is a significant red maple-tussock sedge swamp with a mixed shrub swamp border of alder, sweet pepper bush, winterberry, willows and standing water. Red maple swamps are significant habitats to wildlife, especially for nesting birds. More than 40 species of birds breed in red maple swamps including black ducks, wood ducks, catbirds, ovenbirds, and a variety of warblers. These swamps often contain vernal pools that are breeding sites for spotted salamanders and wood frogs, and foraging sites for larger mammals. A watercourse flows through a 24 inch culvert from red maple swamp on the west side of the railroad tracks and flows into and throughout this property, often flooding low lying areas. The vegetation of this red maple swamp indicates that in addition to seasonal flooding there is frequent standing water present causing organic matter to accumulate (Application to Siting Council, Appendix 6, 4.2.7.9 Wetland CT-A32 reports the organic material is 36" deep at this site.) This organic matter supports the mixed shrubs that form a layer surrounding and beneath the tree canopy of the red maples. These wetlands are highly dynamic ecosystems and a change in the hydrology can significantly alter changes in plant and animal populations, to the point of causing the wetland forest to die. (6,7).

Species present in the red maple swamp include:

Red Maple, *Acer rubrum*
Speckled Alder, *Alnus rugosa*
Winterberry, *Ilex verticillata*
Spicebush, *Linera benzoin*
Northern Arrowwood, *Viburnum recognitum.*
Willow, *Salix spp.*
Sweet Pepperbush, *Clethra alnifolia*
Poison Sumac, *Rhus vernix*
Spotted Jewelweed, *Impatiens capensis*
Skunk Cabbage, *Symplocarpus foetidus*
Tussock Sedge, *Carex stricta*
Cinnamon Fern, *Osmunda cinnamomea*
Interrupted Fern, *Osmunda claytoniana*
Common Reed, *Phragmites australis*

Birds seen within and north of the red maple swamp on Land Trust property

Song Sparrow
Yellow-rumped Warbler

Song Sparrow
Ruby-crowned Kinglet
Field Sparrow
Flicker
Phoebe
Brown-headed Cowbird
Northern Parula
Common Yellow-throat
Starling
Blue Jay
Catbird
Bluebird
Junco
White-throated Sparrow
Tufted Titmouse
Brown Creeper
Carolina Wren
Mourning Dove

The wetland continues along the railroad track to about 350 feet north of Route 146, **(NHV 175)** here it narrows to about 25 feet from the track and the land rises into an oak hickory forest community. At approximated 500 feet from Rt. 146, rock out cropping and ledges become obvious. Mountain laurel, witch hazel and viburnums become prominent in the understory. At approximately 700 feet north of route 146, the land rises abruptly into large boulders and nearly solid ledges for approximately 100 feet or more, then along the railroad track at 900 feet, it becomes a large wetland basin with a watercourse that is draining from the north and crosses at about at this point to the west side of the track were it wends its way through a large red maple swamp, south, to cross back, under the tracks to the east at NHV 182, as described earlier in this report. The wetland basin is low and saturated, seasonally flooded, with skunk cabbage, royal fern, alder and winterberry. The wetland is about 50 feet wide and rises to an oak-hickory forest dominated with beech. At approximately 1200 feet the watercourse frequently overflows in a low basin creating saturated soil, and supports obligate wetland plant species such as skunk cabbage, and royal fern. This low-lying wetland swamp basin is typical habitat throughout the next 600 feet to the end of property NHV 175. The basin is about 40 to fifty feet wide and the property rises to an oak hickory community.

Gould Lane (NHV-169) (visited on November 2 and 3, 2001): The property consists mostly of a forested swamp between I-95 and three houses on Gould Lane. A kidney-shaped pond approximately 400 feet long by 250 feet wide at its widest point lies between the houses and the Tilcon track. The pond is buffered from Interstate-95 by approximately 200 feet of oak-hickory forest on the north side. On the west and south, a dense thicket of trees and shrubs, 10 to 25 feet wide and interspersed by occasional short stretches of herbaceous border, edges the pond. The area between the track and the trees

and shrubs at the edge of the pond contains a sanitary sewer line and is regularly mowed. The proposed pipeline construction path encroaches on the western edge of the pond, removing the entire woody edge.

The pond and wetland provide habitat for ducks, birds and wetland edge animals, and storage and purification of storm water runoff. The pond has lily pads and emergent aquatic plants in the shallow areas. On two visits to the pond on November 2 and 3, 2001, 10 mallards and 13 Canada geese were in the pond. The mallards were actively feeding on the aquatic vegetation. Flocks of birds (Carolina wren, robins, song sparrows, white-throated sparrows, juncos, yellow-rumped warblers) were moving through the thickets, feeding on the abundant seeds and fruits provided by the trees and shrubs. Raccoon prints and coyote droppings were seen near the pond edge.

Within the 450 foot-long thicket on the west side of the pond there were 11 bird nests that were easily seen because of the leaf drop at this time of the year. One was the woven hanging nest of a Baltimore Oriole. Two nests were the distinctive flat, frail 12-inch open nests of interwoven twigs built by green herons. Eight other nests on the west side of the pond, built by unidentified species, were at various heights in the trees and shrubs. In a tree next to the north side of the pond was a large nest approximately 1.5 feet across constructed of heavy twigs. The wooded area around the pond, which provides an abundant food source, is clearly an important nesting area for a variety of birds. This area should be reexamined in the spring for nesting birds and other wildlife species. Disturbance of the narrow thicket on the west side of the pond, and the displacement of the birds that use it, should be avoided.

Species found along the edge of the pond:

Red Maple, *Acer rubrum*
Red Oak, *Quercus rubra*
Scarlet Oak, *Quercus coccinea*
Black Cherry, *Prunus serotina*
Crab Apple, *Pyrus spp.*
Red Cedar, *Juniperus virginiana*
Flowering Dogwood, *Cornus florida*
Winterberry, *Ilex verticillata*
Staghorn Sumac, *Rhus typhina*
Autumn Olive, *Eleagnus umbellata*
Willow, *Salix spp.*
Silky Dogwood, *Cornus amomum*
Red-osier Dogwood, *Cornus stolonifera*
Northern Arrowwood, *Viburnum recognitum*
Highbush Blueberry, *Vaccinium corybosum*
Burning bush, *Euonymus alatus*
Multiflora Rose, *Rosa multiflora*
Grape, *Vitis spp.*
Common Greenbriar, *Smilax rotundifolia*

Japanese Honeysuckle, *Lonicera japonica*
Asiatic Bittersweet, *Celastrus orbicularis*
Common Reed, *Phragmites australis*
Mugwort, *Artemisia spp.*
Goldenrods, *Solidago spp.*
Common mullein, *Verbascum thapsus*
Soft Rush, *Juncus effusus*
Tussock Sedge, *Carex stricta*
Sensitive Fern, *Onoclea sensibilis*
Marsh Fern, *Thelypteris palustris*

Impact of gas pipeline on biological value of Land Trust preserves

The Goss property (NHV-194) is an important oak-hickory community, while the south end of the Anderson-Wilcox property (NHV-182) is a significant red maple swamp, and the pond on Gould Lane, with its wooded edge, is heavily used by a variety of birds and other wildlife. The three habitats differ from and complement each other and support many species of birds and other wildlife. **To permanently create a cleared 50 foot right of way through the center of Goss and Anderson Wilcox and to clear the trees from the edge of the Gould Land pond would destroy this currently sustainable, species-rich ecosystem.** These properties are components of a green buffer corridor, spanning the Tilcon quarry railroad, that consists of complex ecosystems that sustain large numbers of plant species and fauna that that utilize these refuges for food and shelter, for breeding, as over-wintering grounds and as refueling migratory stop-over areas. These forest buffers are often not more than 250 to 500 feet wide. A 50-foot right of way across the slope of the Goss property, by reducing and fragmenting the buffer, would reduce its value to the wildlife using it for nesting and for shelter. Studies indicate that the amount of wildlife in clear-cut stands have a direct relationship with the age of the clear-cut. Those of less than 10 years old have a lower abundance of wildlife species than older stands (11, 12). One of the major reasons that clear-cut stands are unsuitable for some wildlife is the absence of overstory trees and snags. These clear-cuts are not used by birds that need to mark territory by singing, cavity nesters, and there is a major loss of food and shelter. Small mammals that utilize forested canopies for food and nests are in lower numbers in clear cuts (5,9,10,13). These smaller rodents and birds are low on the food chain that supports larger species that feed on them.

A maintained clear-cut right-of-way throughout the Goss property will both lower its diversity and affect the aesthetic value to those people who walk the trails on this property to enjoy the troves of infinite beauty and variety that occurs there.

In conclusion, the preservation of coastal open space is especially important for the migrating species, which use it for refueling before long migrations south, and as a stopover and food source for exhausted birds on the way north (1), making each preserve even more important than it would be inland. Oak-hickory forests are important woodlands and support many species of wildlife, providing high quality nutrition for a

relatively small outlay of foraging energy. These green corridors provide a way for wildlife to move from one area of open space to another and these woodlands offer food and shelter. Our coastal region supports the largest human population in Connecticut and the limited amount of preserved open space is fragmented and tucked between developments. Each preserve is more important, therefore, than a similarly sized area in a less highly developed area. These protected refuge corridors are lynchpins linking together communities of ecosystems that sustain our wildlife.

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Appendix III
Tree Census

Survey of Goss, Anderson-Wilcox, Gould Lane
July 21, 1:00 - 4:00 PM
Bill Horne, Harry and Joan Merrick

The purpose of the survey was to census the trees in the area of the Branford Land Trust Goss property within the construction and right of way area of the proposed Islander East pipeline .

We measured the circumference of several large trees, then counted trees with a diameter of about 12" or more in an area defined as follows: on the east, the edge of the railroad cut; on the west, the flagged line corresponding to the western boundary of the proposed construction area (flagged by Islander East surveyors on July 16); on the north, the point where the flagged line crosses the hiking trail; on the south, a line running west from the north end of the pond (approximately the location of the BLT sign post). Each person counted independently. Harry counted 67-68, Joan counted 74, Bill counted 62.

Trees measured:

Interior area:

Species	Circumference
White oak	7'3" (87")
White oak	9'3" (111")
White oak	6'7" (79")
Scarlet (?) oak	7'4" (88")
Beech	5'8" (68")
Black birch	3'10" (46")
Black birch	4'4" (52")

Along the edge of the property near the tracks:

White pine	5'8" (68")
Pitch pine	3'7" (43")
White oak	5'0" (60")
Black/red oak	4'6" (54")

During our visit, great egrets and snowy egrets, a little green heron and a duck (black or female mallard) flushed from the pond between the railroad tracks and Goss. The egrets moved to the salt marsh on the east side of the tracks near a panne that was visible from the tracks. At that panne, five great egrets and a snowy egret (including those that

moved from the pond) and a flock of over 20 glossy ibis were seen. (Harry counted 26 ibis.

About 100 yards south of **Gould Lane** on the east side of the tracks, we visited a **red oak of notable size** (noted by the survey teams on 7/16). **The circumference measured 11'6", the diameter of 44".** The height was crudely determined to be >> 60 ft. The character of the RR in this area is similar to that observed along the Anderson-Wilcox property (shaded by high canopy).

Branford Land Trust
Submission to the Federal Energy Regulatory Commission
(November 19, 2001)

Re: Islander East Natural Gas Pipeline
Docket Numbers: CP01-384-000, CP01-385-000, CP01-386-000

Document II
The Economic and Social Issues:
The Branford Community and the Branford Land Trust

The Islander East Natural Gas Pipeline, if constructed as proposed, will cross three Land Trust preserves (NHV-169, NHV-175/NHV-182, NHV-194), and indirectly impact other nearby undeveloped wetlands and uplands, including a town-owned nature and recreation trail that is heavily used by residents of Branford and other towns in the region. The environmental impact to these properties is addressed in the accompanying document. **Evaluation of the Islander East proposal is incomplete without consideration of the importance of protected open space to the Branford community and the potential significant implications for the economic viability and future of the Branford Land Trust.**

Even though it has a population density of more than 1000 people per square mile, Branford has managed to maintain some of its earlier rural character because of the action taken by dedicated individuals over several decades to protect open space throughout the town. The Branford Land Trust, founded in 1967, has been instrumental in this effort. The Land Trust, the Town of Branford and the State of Connecticut, working with the support of individuals in the community and local foundations and businesses, have developed a system of open space preserves throughout Branford.

These dedicated open space preserves provide the community, the state and the entire region with several benefits. The wetlands and woodlands protect the air and water quality of our community and of Long Island Sound. They provide habitat for wildlife and recreation for our residents, and they are buffers between business areas, industrial corridors and residential neighborhoods. Many of these preserves are small and tucked between developed areas, making each preserve much more important than it might be in a less developed area. These preserves, already sensitive because of their relative scarcity and small size, are critical natural elements of the community and are extremely vulnerable to further fragmentation.

Branford has consistently recognized the value of open space. The Town's Zoning, Subdivision and Inland Wetlands regulations acknowledge the value of buffers and require open space set-asides in subdivisions. The Town's Plan of Conservation and Development earmarks areas that

are to be kept undeveloped. **The commitment of the Branford community to reserve, preserve, and protect its natural assets for the benefit of future generations is absolutely clear.**

Public perception, economics and the Branford Land Trust

The Land Trust is a totally volunteer non-profit organization that depends for its support and existence on Branford residents, local foundations and businesses. More than 1200 families and business belong to the Branford Land Trust. In this last year the Branford community overwhelmingly supported the Land Trust's protection of two new preserves by contributing more than $250,000 for their purchase.

Land is entrusted to the Land Trust with the expectation that it will be protected as open space for the benefit of future generations. The Goss property was given to the Land Trust for the express purpose of permanent protection with a deeded restriction that limits the use of the property to conservation, education, and scientific purposes. If donors cannot be sure that Land Trust ownership of open space will permanently protect the land and the natural resources that it holds in trust for future generations, then donations will decline. Furthermore, if Land Trust property becomes a regular or preferred target of federal, state or municipal takeover for whatever purpose, the Land Trust is at risk for losing its credibility as trustee (see attached letter from Henry M. Lewis) . **Its community support, the life-blood of volunteer conservation organizations, is threatened.**

The Branford community has worked hard with the Land Trust to protect our town's open space. The confiscation of that protected open space for a gas pipeline strikes a blow to our entire community.

Birds of the Branford Steam Railway Corridor

Noble Proctor

The area covered runs from Interstate 95 (at Gould Lane Pond)south via the base of Pleasant Point Rd, (near switching yards) and includes the salt marshes of the Juniper Point area directly adjacent to the Tilcon/Tomasso railway. Due to the private property status of some of these sites some areas have not been visited. However, over the past 30 years I have studied the sites during all seasons and the attached listing will show the quality of the area not only for nesting species but also for the food and cover it provides for migrant species. Species seen only flying overhead (example- Common Nighthawk)-have not been listed. The list has been limited to species seen within 200 feet on either side of the track and therefore these species could react to disturbance in that area. Additional information regarding status of species can be had by contacting Noble Proctor.

Species Recorded:

Double-crested Cormorant
American Bittern
Least Bittern
Great Blue Heron
Great Egret
Snowy Egret
Little Blue Heron
Tricolored Heron (rare)
Cattle Egret very rare
Green Heron (nests)
Black-crowned Night Heron(nests)
Yellow-crowned Night Heron- very rare
Glossy Ibis
Mute Swan (nests)
Snow Goose (in migration stopping in lower marsh area)
Canada Goose
American Black Duck (nests)
Mallard (nests)
Wood Duck (nests)
Green-winged Teal
Blue-winged Teal -rare
Gadwall
Turkey Vulture
Osprey- nest on platforms provided
Northern Harrier- use marshes for food
Sharp-shinned Hawk
Cooper's Hawk-has nested in woods
Red-shouldered Hawk- nests in woods in wet area near vernal pool/ pond
Red-tailed Hawk-nests
American Kestrel
Peregrine Falcon (hunting lower marsh in migration)

Ring-necked Pheasant
Ruffed Grouse (has nested in past)
Wild Turkey (nests nearby)
Clapper Rail- **nests**
King Rail- uncommon/ hybridize with Clapper
Virginia Rail migrant -possible nester
Sora-migrant

Shorebirds

Utilize open mud-pans/pools of marsh for feeding and resting

Black-bellied Plover
American Golden Plover-rare
Semipalmated Plover
Killdeer
American Avocet- 2 records
Greater Yellowlegs
Lesser Yellowlegs
Solitary Sandpiper
Spotted Sandpiper **nests**
Willet- **nests**
Whimbrel
Semipalmated Sandpiper
Western Sandpiper
Least Sandpiper
White-rumped Sandpiper
Baird's Sandpiper- rare fall visitor to feed in "pans" of marsh
Pectoral Sandpiper
Stilt Sandpiper- 2 records
Short-billed Dowitcher
Common Snipe
Woodcock (**nests** in woods)
Wilson's Phalarope- rare visitor to the mud "pans" to feed (mainly fall)
Laughing Gull
Herring Gull
Ring-billed Gull
Great Black-backed Gull
Least Tern-enters channels for fishing at high tides
Common Tern- enter channel for fishing at high tides
Rock Dove
Mourning Dove-**nests**
Black-billed Cuckoo-**nests**
Yellow-billed Cuckoo- **nests**
Great Horned Owl- has **nested** within 200 feet of tracks
Screech Owl- **nests**
Short-eared Owl- uses marsh for hunting in migration

Ruby-throated Hummingbird- feeds on plants along rail line
Belted Kingfisher- uses ponds and channels for fishing-nests
Red-headed Woodpecker- rare
Red-bellied Woodpecker- nests
Downy Woodpecker- nests
Hairy Woodpecker- nests
Northern Flicker- nests
Pileated Woodpecker-has nested very close
Est. Wood Pewee- nests
Est. Phoebe- nests
Willow Flycatcher
Least Flycatcher
Great Crested Flycatcher- nests
Eastern Kingbird- nests
Tree Swallows- use nest boxes placed in marsh for nesting
Blue Jay- nests
American Crow-nests
Fish Crow--forages in marsh
Black-capped Chickadee- nests
Tufted Titmouse-nests
White-breasted Nuthatch- nests
Brown Creeper
Carolina Wren- nests
House Wren-nests
Winter Wren
Marsh Wren-nests
Golden-crowned Kinglet
Ruby-crowned Kinglet
Blue-gray Gnatcatcher- nests
Eastern Bluebird- nests in boxes put out for them
Swainson's Thrush
Wood Thrush- nests
American Robin- nests
Gray Catbird- nests
Northern Mockingbird- nests
Cedar Waxwing
European Starling
White-eyed Vireo- nests
Solitary Vireo
Yellow-throated Vireo (suspected nesting)
Warbling Vireo nests
Red-eyed Vireo- nests

Warblers

Many of the warblers use the edge habitat created by the rail line as a feeding area during migration. Those that nest are so marked.

Blue-winged Warbler-**nests**
Golden-winged Warbler- very rare migrant
Tennessee Warbler
Nashville Warbler
Northern Parula
Yellow Warbler -**nests**
Chestnut-sided Warbler- **nests**
Magnolia Warbler
Cape May Warbler- rare
Black-throated Blue Warbler
Yellow-rumped Warbler
Black-throated Green Warbler
Blackburnian Warbler
Pine Warbler
Prairie Warbler **nests**
Palm Warbler
Bay-breasted Warbler
Blackpoll Warbler
Black-and-White Warbler- nests
American Redstart
Prothonotary Warbler- very rare
Worm-eating Warbler- nests nearby
Blackpoll Warbler
Black and White Warbler- **nests**
American Redstart- **nests**
Ovenbird -**nests**
Northern Waterthrush
Louisiana Waterthrush
Common Yellowthroat- **nests**
Hooded Warbler- has nested nearby
Wilson's Warbler
Canada Warbler
Yellow-breasted Chat- very rare

Scarlet Tanager-**nests**
Northern Cardinal- **nests**
Rose-breasted grosbeak- **nests**
Indigo Bunting- **nests**
Rufous-sided Towhee -**nests**

American Tree Sparrow
Chipping Sparrow- nests
Field Sparrow- nests
Savannah Sparrow
Saltmarsh Sharp-tailed Sparrow- nests
Fox Sparrow
Song Sparrow- nests
Swamp Sparrow- nests
White-throated Sparrow
Dark-eyed Junco
Red-winged Blackbird- nests
Common Grackle-nests
Orchard Oriole
Baltimore Oriole- nests
Purple Finch
House Finch -nests
Red Crossbill
American Goldfinch -rare nesting
House Sparrow- nests

Subject: **Submission for the record of Islander East's appeal**
Resent-From: Islandereast.Comments@noaa.gov
Date: Wed, 19 Nov 2003 13:56:14 -0800 (PST)
From: Bill Horne <billhorne48@yahoo.com>
To: IslanderEast.comments@noaa.gov

Attached please find one pdf file to be included in the record of Islander East's appeal of the decision by the Connecticut Department of Environmental Protection denying consistency with the Coastal Zone Management Plan. This is the first of two files being submitted electronically today by the Branford Land Trust.

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11-19-03 submission 1.pdf	**Name:** 11-19-03 submission 1.pdf **Type:** Acrobat (application/pdf) **Encoding:** base64 **Description:** 11-19-03 submission 1.pdf **Download Status:** Not downloaded with message

BRANFORD
LAND
TRUST since 1967
P.O. Box 254
Branford, CT 06405

"The mission of the Branford Land Trust is to preserve open space in Branford and to promote our community's appreciation of Branford's diverse natural features."

November 19, 2003

Mr. Branden Blum
Senior Counselor
c/o Office of Assistant General Counsel for Ocean Services
National Oceanic and Atmospheric Administration
U.S. Department of Commerce
1305 East-West Highway
Room 6111, SSMC-4
Silver Spring, MD 20910

Dear Mr. Blum:

In this transmission, the Branford Land Trust is submitting three documents for inclusion in the record for Islander East's appeal to the Secretary of Commerce of the finding of inconsistency with the Connecticut Coastal Zone Management Plan, as we were invited to do by Mr. James Walpole at the November 5, 2003 hearing held in New Haven, CT. These documents have been submitted by the Land Trust to one or more of the regulatory agencies who have considered the Islander East project. They are:

- a critique of the Draft Environmental Impact Statement
- comments on FERC's final order on Rehearing and Granting of Certificates
- a critique of Islander East's analysis of the impacts of resuspended and dispersed sediments on the marine environment in the Stony Creek and Thimble Islands area.

Some of these documents provide evidence of the inaccurate, incomplete and misleading environmental analysis conducted by Islander East in support of its application, which was accepted by FERC in complete disregard of its responsibility to conduct a careful environmental review of projects such as this. Contrary to it's responsibility in this area, FERC dismissed out of hand, with no supporting evidence, the serious deficiencies in the Draft Environmental Impact Statement and subsequent submissions by Islander East that were called to its attention in submissions by the Branford Land Trust and other commentators when it prepared a Final Environmental Impact Statement with few substantive changes. The documents also discuss FERC's fallacious analysis of the non-environmental considerations on which it based it's decision to grant certificates to a plan that is not the least environmentally damaging alternative, as required by federal statute.

A second transmission to follow will contain a document that describes some of the environmental resources along the proposed pipeline route through Branford that will be damaged if the pipeline should be constructed.

Thank you for your consideration.

Sincerely,

Joan Merrick
President
Branford Land Trust

Bill Horne
Chair, Natural Resources Committee
Branford Land Trust

The Branford Land Trust's
comment and critique of the
Draft Environmental Impact Statement
prepared by the Federal Energy Regulatory Commission
for the Islander East Pipeline Project
(FERC Docket # CP01-384-000 et al)

May 19 , 2002

(Compiled by William C. Horne, Branford Land Trust President)

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I. Introduction

The Draft Environmental Impact Statement (DEIS) prepared by the Federal Energy Regulatory Commission (FERC) for the Islander East Pipeline Project (FERC Docket # CP01-384-000) is of generally poor quality and characterized by numerous errors and omissions, some of which are listed at the end of this submission. Perhaps the most critical shortcoming is the lack of sediment modeling, including an explanation of the assumptions that go into the model. This information must be made available for public examination and comment before the Final Environmental Impact Statement (FEIS) is written.

Much of the DEIS appears to be taken verbatim from materials provided by the applicant, for example cutting and pasting a reference to the Branford Land Trust web site as authority for the vegetation types that would be affected by the pipeline. (As the author of that material, I can certify that it is a general, superficial description based on casual observation of natural areas throughout Branford, and not an analysis of the specific areas impacted by the pipeline. It was meant as an introduction to interested lay persons, and is not a scientific analysis that could provide a basis for an Environmental Impact Statement.) This heavy reliance on information submitted by the applicant gives the impression that the FERC staff and consultants neither considered detailed inventories and reports compiled by local experts and submitted by the Town of Branford, the Branford Land Trust and other interested parties nor carefully inspected the route of the pipeline and directly evaluated the likely environmental impacts of the project themselves.

Even when the DEIS acknowledges the damage that will be caused by the pipeline (lower diversity in frequently mowed areas, susceptibility of disturbed areas to invasive plant species, inability of temporary work areas to return to preconstruction conditions in less than 25 – 150 years; Sects. 3.4.2.2, page 3-61 and 3.5.2, page 3-63 are two of the numerous examples) it brushes them off as having been minimized by Islander's proposed construction practices and its own recommendations for more information to be filed with the Commission after the period for public comment is past.

Furthermore, there are instances (i.e., the Pine Orchard Variation) where a clear choice exists between a variation that would minimize the impact on the environment and one that would merely minimize the visibility of the project (and therefore presumably the community opposition), and in these cases, FERC recommends the option with the greater or longer term environmental impact.

The DEIS notes in several places that Islander East is or will be consulting with local officials and organizations (e.g., the Branford Land Trust, Sect. 3.7.2, page 3-76), but make no attempt to independently confirm with the parties that Islander East is supposedly consulting that such consultation are actually occurring or that they are resulting in any concessions by Islander East that reduce the impacts of the pipeline. It has been the experience of the Branford Land Trust that Islander East took every opportunity to present its minimal contacts with the Land Trust as evidence of cooperation by the Land Trust with the project without making any changes that

addressed the Land Trust concerns. Islander East finally produced some substantive improvements only when it was made clear by the Connecticut Siting Council that it would require Islander East to take into account the special nature of the land trust properties, in terms of both high environmental value and low probability of third party damage to the pipeline, to reduce the impact of the construction and right-of-way to the least amount consistent with reasonable inspection and access requirements, and to engage in restoration and management practices that actually mitigated the impact to as great a degree as possible. **FERC must determine the extent to which the government-imposed taking of dedicated conservation land for the profit of private companies is acceptable, and restrict Islander East accordingly. Leaving small powerless organizations like the Branford Land Trust to defend themselves against multi-million dollar corporations armed with government-sanctioned powers of eminent domain guarantees that the public trust will be sacrificed for private gain.**

II. Installation of the pipeline in Long Island Sound

There are a number of deficiencies in the DEIS related to the environmental impact on Long Island Sound. To begin, the DEIS has failed to incorporate the recommendation of the Environmental Protection Agency in its scoping letter dated November 15, 2001, (FERC document # 2224186) that the EIS for the Islander East project should include "a complete characterization of natural resources along the marine route, specific monitoring plans (before, during and after construction), appropriate mitigation measures to replace lost habitat value, and a discussion of time of year restrictions for the project." EPA also recommended that the analysis suggest effective ways to integrate the results of the monitoring plan with mitigation measures.

II.A Construction activity at the Connecticut landfall and adjacent near-shore waters

This is potentially the most serious environmental impact of the entire project, and the DEIS analysis is woefully deficient, in part because Islander East has failed to provide an analysis of sediment transport in the area or a plan for an alternate crossing method to be used if HDD fails, and in part because the DEIS ignores the likely impact of typical winter weather on spoil berms created between the HDD break-out point (MP10.9 if all goes as proposed) and MP12. The main concern is the suspension of sediment by dredging and by erosion of the spoil mounds, and the sediment's transport onto working shellfish beds and other sensitive areas.

II.A.1 Alternative crossing method

Islander East has not provided a plan for an alternate crossing method from the Connecticut landfall out onto the Sound in the event that the HDD fails (Sect. 3.3.2.2, page 3-31). In the event that the HDD fails, the entry into the Sound at the Connecticut landfall will markedly increase what is already the likely single largest negative environmental impact of the entire project, sediment dispersion and transport from the construction area to nearby shellfish beds. **FERC cannot prepare a proper Environmental Impact Statement if it is unable to evaluate the alternative crossing method.** Deferring the evaluation of the alternate crossing method until after the

preparation of the FEIS and transferring the responsibility for such evaluation to the Director of OEP (FERC recommendation page 3-31) is unacceptable and a violation of the intent, if not the letter, of NEPA. FERC should state explicitly that in the event of the failure of HDD, the project cannot go forward until the environmental impact of any alternative crossing method has been evaluated, **including a public comment period**. FERC should also explicitly define what constitutes failure of the HDD, including the number of attempts that are acceptable.

II.A.2 Sediment resuspension and dispersion

The DEIS acknowledges that sediment transport along the route of the pipeline is dominated by turbulent flows (page 3-35), and this is particularly true of the shallow near-shore areas around the Thimble Islands. The DEIS notes (page 3-37) that area from MP 10.2 to 11 is one in which sediment is eroded or sorted and reworked. Moreover, it cites a study by Signell, et al., 2001 (which is missing from the reference list), which notes that fine sediments in these shallow areas are regularly resuspended by tidal currents and that storm-related events that occur 10-20 times per year can redistribute fine sediments in waters shallower than 20 meters (more than 60 feet). Modeling studies by the same US Geological Survey (USGS) scientists at Woods Hole (Signell, R.P., List, J.H, and Farris, A.S., 2000. Bottom Currents and Sediment Transport in Long Island Sound: A Modeling Study. *Journal of Coastal Research*, 16(3), 551-566; Signell, R.P., Knebel, H.J., List, J.H, and Farris, 199A.S.,Physical Processes Affecting the Sedimentary Environments of Long Island Sound. Published in Proceedings, 5th International Conference on Estuarine and Coastal Modeling, M.L. Spaulding and A.F. Blumberg, Eds., ASCE Press) indicate that **wind driven bottom wave orbital velocities in this area exceed the speed necessary to resuspend fine grained muds more than 10 percent of the time**. Data on wind distribution over a 12 year period (Nov 1984 - Dec 1996) from the NOAA Ambrose Light meteorological station cited in the USGS studies indicate that "wind events having wind speeds of at least 10 m/s [over 20 mph] occur about 10-20 times a year **chiefly during the winter months**" when the mounds of sediments will be in place (emphasis added). Information supplied by Islander East on December 31, 2001, (An Investigation of Sediment Transport and Circulation in the Vicinity of the Thimble Islands, Central Long Island Sound; Project Status – November, 2001 by W. Frank Bohlen) showed that the area from the HDD breakout to MP 12 was subjected to frequent wind and wave conditions sufficient to raise significant amounts of sediment (surface and bottom) from a natural bottom.

The key point that the FERC staff ignores in its analysis is the different susceptibility to erosion of stable, undisturbed bottom, on the one hand, and mounds of dredged sediment that rise 10 feet or more above the bottom, on the other. The mounds are exposed to sheer forces and turbulence that the undisturbed bottom does not experience. In fact, the mounds create the turbulence that will eat them away as currents and waves flow over and around them. Islander East proposes to construct 10-12 foot high spoil berms that will extend for more than a mile, rise to within 2 feet of the surface at low tide and contain more than 50,000 cubic yards of fine sediment. (In contrast, the dredging necessary for either the ELI or the One-Pipe system alternatives would occur in water greater than 20 feet deep, and mechanical plowing could begin at the point where the

lateral pipeline attaches to the existing pipeline. The area that would need to be dredged would be limited, about 60-70 feet across and 5-10 feet deep. The quantity of dredged sediment could be stored on barges, eliminating the danger of storm-induced erosion and dispersion.) In his testimony to the Connecticut Siting Council, Dr. Bohlen acknowledged that material in the berms will be susceptible to higher than usual levels of erosion, and that once suspended, the material could remain suspended for days during the turbulence generated by strong winds and waves. Islander East proposes that under the best conditions (if the reaming of the HDD bore goes smoothly) the berms will be in place for at least one month and as long as three months. During this time, the wind data from the USGS studies cited above indicate that they can be expected to experience **at least** 3 to 4 high wind events with the associated wave induced erosion. While the modeling of the sediment dispersal from these berms was not available, FERC estimated that the plume could extend for a half mile during active dredging, and there is no reason to think that the plume from the erosion of the stockpiled sediment would behave any differently.

While the DEIS shows concern for the possible impact of severe winter storms on construction vessels (Sect. 3.8.1.2, page 3-83), **it's analysis ignores or dismisses the environmental impact of these storm events** (Sect. 3.4.1.2, pages 3-51, 3-54; Sect. 3.8.1.2, page 3-82). Its only recommendation with regard to damage to shellfish beds is that "Islander East should file with the Secretary, prior to the issuance of the final EIS, the results of the offshore sediment deposition studies as described in the Study Plan, including an assessment of potential impacts to shellfish beds and other fisheries. Provide an estimate of the locations types, duration, and quality of the identified impacts." Instead of recommending the elimination of construction and routing practices that create the conditions for an almost certain massive economic and environmental impact, the DEIS notes that Islander East can be taken to court for damages. This litigious outcome should be what environmental impact analyses anticipate and avoid.

There is another impact related to the excavation of the basin and trench between MPs 10.9 and 12 that the DEIS and Islander East ignore. Dispersion of the temporarily stored sediments by storm events (which has a high probability of occurring, see earlier discussion) will require Islander East to import sediments for the burial of the installed pipeline. The locations from which these sediments will be taken from have not been identified and no assessment of the impacts to offshore and coastal resources which could result has been provided.

II.A.3 <u>Impacts of horizontal directional drilling (HDD)</u>

On page 3-31, the DEIS considers the effect of drilling mud due to "temporarily inundating" marine organisms. It should also consider the effect of toxic contaminants present in the drilling mud, especially but not limited to barium sulfate. Testimony presented to the Connecticut Siting Council showed that individual preparations of bentonite differed in their effects on marine organisms, which in some cases were lethal.

In Section 3.3.3.2 (Long Island Sound; Environmental Consequences), the DEIS states (page 3-44) that the drilling fluids would consist of bentonite clay, native rock

cuttings, and freshwater with no additives. Islander East testified to the Connecticut Siting Council (CSC) that bentonite is purchased in any of several premixed forms that differ in terms of their contents (CT Siting Council Exhibit 28, transmitted to FERC in the April 30,2002, Supplemental Data Filing, tab 15). Moreover, Islander East has stated in its Proposed Findings of Fact submitted to the CSC on May 17, 2002 (#27, pages 13-14), that the water for the drilling fluid will be appropriated from Long Island Sound, which is not a source of freshwater. (This change in the proposed procedure will probably be missed by many evaluators of the DEIS, making a thorough evaluation of the current state of the project impossible.)

The DEIS fails to sufficiently consider, either in Sect. 3.3.3.2 or in the other sections where HDD is discussed (Sect. 2.3.2.8, pages 2-18 to 2-20; Sect. 2.3.4.1, page ; Sect. 3.3.2.2, page 3-30, 3-31) the impact of disposing of the water used in the drilling mud during recycling of the mud and at the end of the HDD operation or of the drilling mud itself. It states (Sect. 2.3.2.8, page 2-20) that excess drilling mud could be incorporated into the soil in an upland area or disposed of at an appropriate facility, and that water left over from the drilling mud will be discharged into a well-vegetated upland area or into an energy dissipation/sediment filtration device at the site. The site of the HDD at the Connecticut landfall is surrounded by a small residential area and an environmentally important and sensitive natural coastal area, components of which are owned by the Branford Land Trust, the Town of Branford, and the State of Connecticut. Drilling mud generated at this site must be disposed of at an approved off-site facility, not on-site or nearby. The final EIS must also consider the environmental impacts of soluble and or leachable additives present in the commercial preparation of bentonite that Islander East will use, as well as hydrocarbons and other contaminants that may accumulate in the drilling mud during its prolonged contact with the drill rig machinery. Islander East should be required to provide details of where the excess water will be discharged at the Connecticut landfall site. If the water will be salt water, as indicated in the filing with the CSC, it must not be discharged onto vegetated upland areas. On the other hand, direct discharge of potentially contaminated water directly back into Long Island Sound or nearby tidal wetlands is likely to have other impacts that must be carefully evaluated. A special federal and/or state discharge permit may be required.

II.A.4 <u>Impacts on marine mammals</u>

The DEIS states erroneously that harbor seals are the only marine mammals that occur regularly within the project corridor (Sect. 3.4.2.1, page 3-59), since other species of seals (gray, harp and hooded) have been recorded by CT DEP and other conservation organizations in Long Island Sound in recent years (see report by Branford Blue Ribbon Committee), and Mr. C. Sullivan testified to FERC and Tetra Tech staff on May 8, 2002, that harbor and gray seals were found in the Thimble Islands, one of the few areas along the Connecticut shore with such a high density of favorable haul-out sites, during a recent field visit. The DEIS states that marine mammals are expected to avoid the site during construction activities, without commenting on the fact that driving marine mammals from their haul out sites, even as an indirect effect of nearby activities, constitutes harassment under the Marine Mammals Protection Act

II.B. Construction activity in waters deeper than 20 feet

II.B.1 Contaminated sediments

Regarding the remainder of the route between the Connecticut and Long Island landfalls, Islander East's sampling frequency of once per mile is not sufficient, a conclusion that is supported by the concern voiced by the US Dept. of Interior in its comments dated May 10, 2002. The samples analyzed by Islander East account for less than 0.01% of the length of the route and an even smaller fraction of the total area that would be disturbed. USGS studies show average metal levels to be 1.5 to 5 times higher than background. For example, a map on the relevant USGS web page (USGS Studies in Long Island Sound – Geology, Contaminants and Environmental Issues; http://woodshole.er.usgs.gov/project-pages/longislandsound/index.htm) shows levels of copper at individual sampling sites to be within the ERL and ERM ranges along nearly the entire route of the pipeline. Samples should be taken at least once per half mile, and when individual samples show levels equal to or greater than the ERL (Effects Range-Low), a greater frequency should be required to determine conclusively that there are no nearby areas of high contamination that will be disturbed by the installation of the pipeline. There should also be an analysis of the potential for increasing mobilization or bioavailability of contaminants that are moved from anoxic/hypoxic conditions to oxygenated water.

In addition to the inadequacy due to infrequent sampling along the route, the **criteria used to estimating the potential for damage from contaminants that were found in the samples are confusing and potentially misleading.** The vibratory core sampling report prepared for Islander East by TRC Environmental Corp. and submitted to FERC in response to FERC's February 5 request for information states (page 4) that for metals "the percent of studies indicating adverse effects was less than 10% when concentrations were below the ERL values", and that adverse effects were typically caused by concentrations in the ERL range in 20 to 30% of the studies and by concentrations in the ERM range in 60 to 90% of the studies. Similar figures are given for organic compounds.

Note that this system of evaluation says nothing about the nature or severity of the biological effects, only that some adverse biological effect was found at or below this concentration in a certain percentage of the studies. Without knowing the biological effects and organisms that were studied and the severity or frequency of the effects found, it's impossible to know how serious the consequences of disturbing the contaminated sediments might be. For example, there is great concern about the health of lobster populations in Long Island Sound. Did all the studies examine the effects of contaminants on lobsters? At what stages of lobster development? For how long an exposure? What characteristics of lobster biology were monitored and for how long after exposure to the contaminant? What percentage of the study population had to be affected for the result to be evidence of an effect? Without knowing the answers to these questions, it is not possible to determine if a particular contaminant stirred up by the pipeline installation poses a threat to lobsters (or even if there are studies that could answer that question). Even if some concentration of a contaminant had been

reproducibly found to be critically toxic at a particular stage of a particular organism's life cycle, that concentration could still fall within (or below) the ERL range for the contaminant because the other studies in the database were examining effects on other organisms or at stages of development where sensitivity was not as acute.

The DEIS estimates the extent of sediment plumes that would be generated by the two methods of jetting and plowing, and the jetting produces a much larger plume because it suspends a much larger amount of sediment. For a variety of reasons, but particularly because of the potential to mobilize contaminants associated with the sediments disturbed by the pipeline installation, the final EIS should recommend and FERC should require that the pipeline must be installed using the lower impact plowing method. Islander has the option of having a plow manufactured if the existing plows are not available, and this would seem to be a good investment if the number of available plows is such a limiting factor.

II.B.2 Hydrostatic testing

The comments on the DEIS filed by the Central Pine Barrens Commission notes that their staff has become aware that Islander East is planning to use biocides in the water used for hydrostatic testing. This is contrary to what Islander presented in its application and is not discussed in the DEIS, another example of the constantly changing nature of the project that prevents the affected public from commenting effectively on the environmental impacts. The possible use of biocides in hydrostatic testing is a particular concern regarding Long Island Sound, since the water used to test the pipeline between Branford and Wading River (approximately 22 miles of 24 inch pipeline) will be drawn from and returned to the Sound. There is currently speculation that biocides used to control mosquitoes infected by the West Nile Virus have contributed to or been directly responsible for the recent lobster morbidity and mortality. FERC must clarify this issue and provide an opportunity for public comment if Islander East is indeed planning to add biocides to the water used for hydrostatic testing.

III. On-shore construction

III.A. Wetlands impacts

III.A.1 General wetland impacts

The DEIS fails to incorporate the regulations and recommendations of the US Environmental Protection Agency (EPA), outlined in its November 19, 2001, letter to the FERC (Document ID 2224186). In that letter, EPA points out that the EIS should provide a detailed assessment of the functions and values of the wetlands and waterbodies along the route of the pipeline. Other than listing the type of wetland crossed and a general description of the plants typically encountered in wetlands in this region, the DEIS fail to provide the required description.

The EPA letter states that impacts to wetlands "include but are not limited to: ... clearing impacts resulting in a change of cover type within a wetland (i.e. converting a forested wetland to an emergent or scrub/shrub wetland)", and that the EIS should "specifically document proposed mitigation to compensate for unavoidable wetlands

impacts". The DEIS accepts at face value the contention of Islander East that no mitigation is necessary because no wetlands are being filled. This is clearly in contradiction to the EPA recommendations. It is also contrary to the recommendation by the Dept. of Interior (May 10, 2002) that the temporal loss of emergent and scrub-shrub wetland and the permanent loss of forested wetlands be compensated for by restoration/recreation of wetlands at a 1:1 acreage ratio and preservation at a 2:1 ratio. The position taken by the DEIS that a loss of up to 50% of the diversity in wetlands is considered to be acceptable restoration (Sect. 3.7.2, page 3-76) is inconsistent with the comments of both EPA and the Dept. of the Interior. Such a degree of biological impoverishment is outrageous and should not be tolerated, let alone condoned.

The EPA letter points out that EPA's regulations (EPA's 404 Guidelines) require that with regard to actions having an impact on wetlands, there be no practicable, less environmentally damaging alternative to the proposed action, and that the EIS should include "an evaluation of ways in which each alternative alignment can be designed to avoid impacts to wetlands". The implication is that where alternative routes with lower wetland impacts exist, they should be used. The DEIS clearly fails to do this in the case of many of the wetlands crossed by the pipeline in Branford, where simply routing the pipeline on the other side of the Branford Steam Railroad track would be practicable and would have less impact on the wetlands.

III.A.2 Vernal pools

The Connecticut Dept. of Environmental Protection, in its comments on the Islander East Pipeline Project to the Connecticut Siting Council, notes that several vernal pools may be present. (My personal observation is that vernal pools do indeed exist immediately to the east of the Tilcon/Branford Steam Railroad marshalling yard, and they are intensively used by amphibians during the breeding season.) The DEIS environmental analysis of wetlands (Sect. 3.7, pages 3-71 to 3-77) makes no mention of vernal pools. This is a serious oversight, especially given that the EPA considers the wildlife functions of vernal pools to be so significant that individual permits are generally required for activities that affect vernal pools, regardless of the size of the area impacted. The EPA also specifically notes that careful field assessment of vernal pools is necessary. Such assessment must be done in the spring, when the pools are filled with water and populated by the obligate organisms that breed in the pools. Islander East's field evaluations of wetlands were conducted in late summer, a time completely inappropriate for the evaluation of vernal pools. The final EIS should not be issued until the pipeline route can be evaluated during the months of March and April for the presence and functional value of vernal pools.

III.B. Invasive species

The DEIS points out that Executive Order 13112 requires that "Federal agencies whose actions may affect the status of invasive species shall not authorize, fund, or carry out actions that are likely to cause or promote the introduction of spread of invasive species in the United States", and that "all feasible and prudent measures to minimize risk of harm would be taken" (Sect. 3.5.2, page 3-63). The report of the Branford Blue Ribbon Committee indicated that the experience of the Inland Wetlands and

Watercourses Commission and the Branford Land Trust is that the kind of clearing proposed by Islander East will promote the establishment of invasive species in the cleared areas. This conclusion is supported by the comments of the Connecticut Department of Environmental Protection in its evaluation of the project for the Connecticut Siting Council, which states "there is a high probability that the cleared area within the Islander East right-of-way (ROW) will become dominated by invasive species if left to regenerate naturally." In it's comments on the DEIS, dated May 10, 2002, the US Dept. of the Interior recommends that "restored/created wetlands and those wetlands temporarily impacted by the project be monitored for a period of **10 years**, with reports generated during years 1, 2, 5, and 10. If during any monitoring period, invasive/exotic plant species occupy more than 5% of any vegetative community, **the applicant should eradicate those species** and establish plant species beneficial to wildlife." (Emphasis added.) Finally, the dominance of invasive plants in the existing Algonquin Gas right-of-way where it crosses property of the North Branford Land Trust ((NHV-090), documented by the Branford Land Trust in its August 1 submission on the need for a full Environmental Impact Statement, demonstrates what will almost certainly happen if Islander East is only required to "consult with local invasive plant experts, **as necessary** [who is to decide what is necessary?], to develop control measures" (emphasis added). **The Commission is abdicating its responsibility under Executive Order 13112 if the EIS does not recommend and the Commission require specific measures to (1) regularly monitor the right-of-way for the presence of invasive plants for the life of the pipeline right-of-way and (2) provide for their immediate removal by methods that balance effectiveness and low collateral environmental impact.**

As noted by the Central Pine Barrens Commission in its comments on the DEIS, straw bales should not be used for erosion control because of the likelihood that they will introduce invasive species into the area.

III.C. <u>Mitigation and restoration</u>

Page ES-2: states that implementation of Islander's Erosion and Sedimentation Control Plan (ESC Plan) with FERC's additional recommendations would "provide a level of environmental protection that is equal or greater than" FERC's standards. **The standards to be met should those of the State of Connecticut and the affected municipalities at the time that Islander East submitted its application.**

The DEIS states (Sect. 3.7.2, page 3-75) that proposed mitigation measures would avoid or minimize impacts to wetlands. How can FERC be sure that mitigation is adequate when the specific mitigation plan has not been developed? Moreover, the comments by the Dept of Interior and the letter from EPA make it clear that the kind of impacts that the DEIS considered acceptable to the FERC staff are inconsistent with the standards of other federal agencies.

The recommendation of the FERC staff to ignore Section VI.D.5 of FERC's procedures for restoring forested wetlands revegetation is unacceptable. As discussed elsewhere, both the EPA and the Department of the Interior consider active mitigation of

temporary clearing of wetlands to be an important component of any Environmental Impact Statement. The decision by FERC staff to acquiesce to Islander East's request for a lesser standard serves only the financial interests of the applicant.

The DEIS inexplicably considers the clearing of forested habitat in the temporary construction areas, which it concedes will take as long as 150 years to recover (Sect. 3.5.2, page 3-63; Sect. 5.1, page 5-1), and the loss of as much as 50% of biological diversity in wetlands (Sect. 3.7.2, page 3-76) to be a minimal impact. Particularly with regard to dedicated conservation land such as land trust properties in Connecticut and the Central Pine Barrens Core Preservation Area in New York, alternatives should be found that avoid these impacts.

The DEIS only addresses the issue of soil compaction with regard to wetlands and residential and agricultural upland areas (Sect. 3.2.2, page 3-15), although it acknowledges (Sect. 3/3/1/2, page 3-24) that "Near-surface soil compaction caused by heavy construction vehicles could also reduce the soils ability to absorb water." Since one of the benefits provided by wooded areas such as the Land Trust preserves is infiltration and cleansing of storm water, compaction of the soil would degrade the value of the land. The decreased ability of the soil to absorb water would also lead to greater potential for erosion as more of the water runs off. Moreover, the Land Trust has observed instances where the activity of heavy construction vehicles has compacted the soil in wooded upland areas and thereby impaired plant growth. Since wooded uplands are not suited to the mitigation technique used on compacted agricultural areas (deep plowing), soil compaction that occurs on the temporary work areas in the Land Trust's nature preserves is likely to be impossible to mitigate, resulting in the long-term degradation of the environmental quality of the land. The FEIS must consider this degradation when weighing the impact of the Islander East's project.

It should be specified that seed mixes and plantings used to re-vegetate temporary work areas and permanent right-of-way will contain only native species unless the land owner specifically request otherwise.

III.D. <u>Effects on wildlife</u>

In addition to the possible effect on marine mammals, discussed above, the DEIS incorrectly dismisses the effect on wildlife of temporary displacement and permanent loss of habitat. This project is not occurring in the depths of the North Maine woods, where identical habitat stretches for miles, but in the most highly developed and densely populated urban corridor in the country. Permanent loss of habitat, no matter how small, reduces the viability of numerous species. This is particularly true of migratory birds that arrive on the southern coast of Connecticut after long flights from as far as the Southern Hemisphere, needing to refuel and rest before resuming their flights to breeding grounds further north. Removal of coastal forested habitat, such as that on the Branford Land Trust's Goss property, represents a real loss to these species. Moreover, even temporary displacement stresses individual animals, making them less able to compete for limited resources even when they are able to find small patches of suitable habitat.

IV. Cumulative Impacts (Section 3.13, pages 3-134 ff.)

The DEIS analysis of cumulative impacts is deficient in a number ways.

In the discussion of impacts on **water quality** (page 3-135), it dismisses the effects of the pipeline as insignificant compared to the cumulative degradation associated with present and future land-use activities. **This comment is an insult to the citizens of Branford**, especially the members of the Branford Land Trust, the Branford River Project and numerous town boards and commissions, who have been and continue to work, sometimes quite effectively, to reverse the degradation of water quality that have historically occurred. The town is spending millions of dollars to upgrade its sewer treatment plant in order to markedly reduce the amount of nitrogen discharged into Long Island Sound. The Land Trust and River Project have engaged in successful educational efforts to increase the awareness of Branford residents of how to protect and improve water quality and other environmental resources. One of the most effective ways of accomplishing this has been the ability of the Land Trust to acquire and protect wetlands and adjacent uplands from exactly the kind of development that Islander East is proposing to do. Permitting the pipeline to violate natural areas that the Land Trust holds in trust for future generations sends the message to our town that taking responsibility for protecting our local environment is a waste of time, energy and money, because the federal government will only turn around and confiscate the protected land in order to benefit private interests that have the power and influence that we lack.

The DEIS dismisses cumulative impact to **vegetation and wildlife** on the grounds that habitats have already been substantially altered in the vicinity of the proposed pipeline. This ignores the successful efforts of the Land Trust and others to acquire and protect properties in this area to maintain what has been left of a natural corridor that is all the more important because of the densely developed nature of the town. It also ignores the fact that locating the pipeline here makes future reduction in Branford's limited open space resources all the more likely. (See comments below on the almost certain need for Islander East to install looping to meet the market demand that it has projected will need to be met in little more than two years.)

The DEIS once again acknowledges the fact that forested areas, like those on Land Trust properties, will not return to preconstruction conditions for a very long time.

V. Alternatives (Section 4.0)

The DEIS contains extensive discussion of alternatives (system alternatives, route alternatives and route variations) to the Islander East project. Section 4.0 begins with a statement of the criteria for selecting potentially environmentally preferable alternatives (page 4-1):

- Delivering increased volumes of natural gas to meet the load of new, efficient, clean burning, gas-fired electric generating plants as well as older, existing facilities that may convert to natural gas in the future; and

- Supplying enough natural gas to heat 600,000 homes in Long Island, and New York City and *meet future local gas distribution company growth in Connecticut* (emphasis added);
- Fully integrating market access between New York and New England; and Enhancing access to virtually every major natural gas supply basin in North America.

EPA in its November 15, 2001, letter to FERC on NEPA scoping of the Islander East project and The US Dept. of the Interior in its comments on the DEIS both state concerns about the need for a broad and full evaluation of alternative routes on land and sea.

The DEIS failed to evaluate all system alternatives that could meet these criteria and enhance the transportation of gas to Long Island. Specifically, the Cross Bay Pipeline project was not included. This proposal, approved by FERC on November 8, 2001 (97 FERC ¶ 61,165 (2001)) could provide 125,000 Dth a day of new firm transportation service from New Jersey to Long Island (nearly all of the initial Precedent Agreements of Islander East with the two KeySpan companies), with construction of only one compressor plant and no new pipeline. As the Commission noted in its November 8 order the benefits provided by the project could be achieved "with minimal impact to the environment." The fact that Cross Bay Pipeline Company, L.L.C., a partnership of Duke Energy, Keyspan (the two partners in Islander East) and Transco, informed the Commission on December 7, 2001 (FERC document # 2228517) that it would not accept the Commission's order, in part because "the market targeted by the Cross Bay project has not materialized" should not eliminate it from consideration.

There are several points to be made about how the system alternatives considered in the DEIS (and the Cross Bay Project, which was not considered) meet these criteria.

1) All of the system alternatives evaluated in the DEIS, including the Islander East proposal, deliver natural gas *to Long Island* for electric generation and residential consumption.
2) None of the alternatives described in the DEIS contributes to meeting future growth of demand for gas in Connecticut. (The compressor station that Iroquois has proposed to construct at the Brookfield interconnect with Algonquin in connection with its Eastchester Extension *would* increase capacity to meet demand between Brookfield and Milford, and indirectly via the interconnect to the Tennessee Gas Pipeline system in the Shelton area to Fairfield County, Westchester County and northeastern Pennsylvania.)
3) Fully integrating market access between Long Island and Connecticut and enhancing Connecticut's access to every major gas basin in North America requires that there be sufficient gas reaching Long Island by routes other than those that pass through Connecticut to provide sufficient gas to Connecticut should the need arise. This in turn requires that the infrastructure for transporting gas to western Long Island from New Jersey and New York City and from western Long Island to the eastern Long Island terminus of the Islander East

project be adequate for this need. The DEIS should have addressed this question, but did not.

V.A. <u>No action or postponed action alternative</u> (Sect. 4.1)

In the discussion of alternative energy sources as components of the mix, the DEIS states that "Replacement of the natural gas by other energy sources is also impracticable in the timeframe required by the end users." I have three points to make.

1) Alternative energy sources can increase their share of the energy mix on Long Island and meet some of the demand that Islander East proposed to meet with natural gas even if it is not able to meet all of it. Long Island Power Authority (LIPA) lowered electric use on Long Island last year by about 115 MW through its Clean Energy Initiative, according to LIPA's Richard Kessel (http://www.lipower.org/newscenter/pr/2002/mar12_02.html). LIPA is aggressively pursuing the development and implementation of alternative technologies such as residential solar (339 MW hrs/year installed through the Solar Pioneer program this year alone, more than 6-fold more than the total previously installed), geothermal, wind and hydrogen-powered fuel cells.
2) Artificially lowering the cost of natural gas by government action (which is surely the effect of the grant of the power of eminent domain) interferes with the market and in effect subsidizes natural gas, thereby possibly slowing the development of alternative energy technologies that will certainly be needed in the future and might even today slow the production of greenhouse gases.
3) The cancellation of the Cross Bay Project because "the market targeted by the Cross Bay project has not materialized" suggests that the timeframe required by the end users is not a short as suggested by Islander East. The construction of the Cross-Sound cable, scheduled to be on line this summer and capable of delivering up to 330 MW of electricity, will help relieve tight energy markets on Long Island. Thus, more time may be available for increasing the contribution of alternative technologies to the energy mix on Long Island, and that time could be further extended by the construction of the Cross Bay Project once a market for the additional 125,000 Dth per day has developed.

V.B. <u>System alternatives</u> (Sect. 4.2)

V.B.1 <u>One-Pipe System Alternative</u> (Sect. 4.2.1)

The fact that Duke and Keyspan acknowledged in their December 7 letter to the Commission, cited above, that there was insufficient market for 125,000 Dth of gas a day to justify the financial risk of the project indicates that the assumptions of market demand used by the Commission staff in determining the hypothetical capacity of the One-Pipe System Alternative are unrealistically high. Therefore, based on the statement in Cross Bay December 7 letter, the "one pipe" alternative should be smaller, with less looping and less environmental impact on land in Connecticut.

The environmental impact of the One-Pipe System Alternative on Long Island Sound will be substantially less than the Islander East project.

- The length of the offshore pipeline would be only 17.1 miles, nearly 25% shorter than the Islander East pipeline.

- The nearshore construction area would be much smaller (1.4 acres for tie-in to the existing Iroquois pipeline, compared to more than 15 acres for the clamshell dredging of the HDD transition basin and trench (including spoil mounds) to the point where the mechanical plow can be used. (Note that the 15 acre area does not include the additional impact that will occur as a result of dredging a flotation trench in water less than 10 feet deep at mean low water. For that distance, the width of the directly impacted area will increase by more than 70%, from 110 feet to 190 feet.)
- The amount of sediment removed for tie-in to the existing Iroquois pipeline will be small enough to be placed in barges, avoiding the formation of spoil berms that will increase the amount of sediment dispersed onto nearby shellfish beds and other areas. (See earlier discussion of the likely environmental impact from sediment dispersed from the Islander East construction site.)

The DEIS fails to identify dedicated conservation land crossed by the 16 miles of looping hypothesized by FERC. However, a comparison of the Islander East Project with the One-Pipe System Alternative prepared by Islander East at the request of the Connecticut Siting Council notes that there are four special land uses crossed by the One-Pipe System: a state forest, a hiking trail and two properties of the Shelton Land Trust. This is in comparison with the six land trust properties crossed by the Islander East project (NHV-015, North Haven Land Trust; NHV-087 and NHV-090, North Branford Land Trust; NHV-169, NHV-176, NHV-182, NHV-194, Branford Land Trust). The Islander East route also crosses the 'Round Branford recreational trail where the trail traverses the Branford Land Trust Goss property (NHV-194). (Note that a route adjustment proposed by Islander East during the Connecticut Siting Council hearing would eliminate the crossing of Branford Land Trust property NHV-175. If this adjustment is accepted by FERC, then the special land use properties crossed by the Islander East route would be reduced to five.)

The DEIS fails to provide evidence to support FERC's apparently arbitrary decision that 16 miles of 36-inch-diameter pipeline loop will be required. Moreover, the implication in the last paragraph of Section 4.2.1 that the impacts of the One-Pipe loop and Islander East pipeline on the affected landowners are similar neglects the fact that the right-of-way for the One-Pipe alternative is already a gas pipeline right-of-way, in contrast to the Branford Steam Railroad corridor which is narrower and less extensively cleared. The DEIS also excludes from consideration the fact that Islander East has stated in a response to a FERC request for information that it anticipates installing looping to meet projected future demand, which would further increase the cumulative environmental impact of Islander East, especially on the small land trust properties along the route in North Haven, North Branford and Branford. Finally, the Islander East comparison referred to above notes that the first three miles from the Brookfield interconnect already contains three pipelines (Iroquois, Algonquin main line, Algonquin loop). A fourth pipeline is not as great an incremental change as that which would be experienced by properties along the Branford Steam Railroad corridor.

V.B.2 ELI System Alternative (Section 4.2.2)

As in the case of the One-Pipe System Alternative, the environmental impact of the ELI System Alternative on Long Island Sound will be substantially less than the Islander East project.

- The length of the offshore pipeline would be only 17.1 miles, nearly 25% shorter than the Islander East pipeline.
- The nearshore construction area would be much smaller (1.4 acres for tie-in to the existing Iroquois pipeline, compared to more than 15 acres for the clamshell dredging of the HDD transition basin and trench (including spoil mounds) to the point where the mechanical plow can be used. (Note that the 15 acre area does not include the additional impact that will occur as a result of dredging a flotation trench in water less than 10 feet deep at mean low water. For that distance, the width of the directly impacted area will increase from 110 feet to 190 feet or more than 70%.)
- The amount of sediment removed for tie-in to the existing Iroquois pipeline will be small enough to be placed in barges, avoiding the formation of spoil berms that will increase the amount of sediment dispersed onto nearby shellfish beds and other areas. (See earlier discussion of the likely environmental impact from sediment dispersed from the Islander East construction site.)

The DEIS fails to provide evidence to support FERC's apparently arbitrary decision that 7 miles of 36-inch-diameter pipeline loop will be required. Iroquois has stated that it believes that the necessary increase in volume delivered can be accomplished by increasing compression (the existing Iroquois pipe is more robust than the older and smaller AGT pipelines that will be retested and upgraded under the Islander proposal), and in the event that looping is required, the looping can be done in several smaller sections to minimize the environmental impact.

The DEIS fails to identify dedicated conservation land crossed by the 7 miles of looping hypothesized by FERC. However, a comparison of the Islander East Project with the ELI System Alternative prepared by Islander East at the request of the Connecticut Siting Council notes that there are no special land uses crossed by the ELI System. This is in comparison with the six (or five, see above) land trust properties and the recreational trail crossed by the Islander East project.

The DEIS does not explain why the factors affecting air quality are assumed to be greater for the Milford compressor in the ELI project. In particular, why is the amount of SO_2 emitted by the Milford plant nearly 5 times greater than the amount emitted by Islander's Cheshire compressor when the amounts of all other pollutants emitted by the Milford plant are less than 2-fold more than the emissions of the same compounds by the Cheshire plant?

V.B.3 The Islander East Project

The DEIS attributes 7 miles of looping to the ELI alternative that is not proposed in Iroquois's application. On the other hand it fails to address the need for additional

looping that is inherent in Islander East's application, thus unfairly biasing the analysis in favor of the Islander East proposal. Although Islander East has consistently responded to questions about looping along its route by saying that the need for looping and increased compression is "speculative", the Commission has based its decision regarding the need for this project on the Daily Transportation Quantities in Islander East's application. It must now treat those figures as more than mere speculation when determining the environmental impact of the project.

Islander East (IE) and the DEIS are greatly understating the cumulative environmental impacts of the project now and in the near future that are consequences of the low capacity and age of the existing Algonquin Gas Transmission (AGT) C-1 and C-1L pipelines between Cheshire and North Haven. (One might ask if this understatement of the true potential environmental impact is the reason that Islander East is not running the 24" pipeline directly from the Algonquin main line in Cheshire.) The cross-sectional area (and thus the volume at constant pressure) of the AGT pipelines feeding into the North Haven metering station (280 sq in; 10" and 16" pipelines) are far surpassed by the cross-sectional area of pipelines taking gas from North Haven (500 sq in: the 24" IE pipeline, the 8" line to the Guilford metering station; the figure does not include Southern Connecticut Gas Co.'s local distribution lines that take delivery in North Haven). This is in addition to the pressure drop that normally occurs as distance from the compressor increases. To compensate for this disadvantage, these smaller and older pipes will be required to operate at the highest pressures within the system, and they will be the first bottleneck to develop when (according to IE's projections cited by FERC in its December 21, 2001 Preliminary Determination on Non-environmental Issues, 97 FERC ¶ 61,363, and discussed below) demand on Long Island exceeds the capacity of the IE pipeline. Thus, the probability of installing new pipe between Cheshire and North Haven is great and should be considered as a likely requirement in the near future and included in the evaluation of the Islander East application.

IE's system is designed to transport 260,000 Dth on a firm basis and 25,000 Dth on an interruptible basis for a total of 285,000 Dth. The capacity of the system to do so depends on the ability of the existing AGT C-1 and C-1L pipelines to withstand an increase in operating pressures from 750 psi to 814 psi. The 10" dia. C-1 line was installed prior to 1970, and was not designed for these pressures. If AGT is not able to successfully complete the retest of the C-1 and C-1L lines, AGT and IE will either have to replace the existing 10" C-1 line or install additional pipeline (looping) to provide the capacity necessary to feed the new Islander East pipeline. Since the route of the existing C-1 and C-1L lines is through the Cheshire aquifer and along the Quinnipiac River (and through state parks that lie along the river), this additional work would impose significant additional environmental impacts that must be considered as possible (perhaps likely) consequences of the IE/AGT project.

Successful completion of the retest does not guarantee that installation of new pipe in the environmentally sensitive Cheshire aquifer and Quinnipiac River watershed will not be needed soon. FERC's Preliminary Determination on Non-environmental Issues (97 FERC ¶ 61,363, issued Dec. 21, 2001, page 3) provides both minimum and maximum

projected transportation quantities based on IE's precedent agreements with AES Calverton, ANP Brookhaven, KEDLI and KEDNY (Preliminary Determination on Non-environmental Issues, 97 FERC ¶ 61,363, December 21, 2001). The projected maximum daily transportation quantity exceeds the system design capacity by November 2004, one year after the system is proposed to go on line. The projected minimum Daily Transportation Quantity exceeds the system design capacity by November 2005, two years after the system goes on line. Thus, Islander appears to be asking for permits on a system that it knows will be out of date within two years of completion. This is not appropriate long term planning, particularly when one consequence is that areas that will not have recovered from the initial work will be disrupted again to increase the capacity of the system. This is particularly undesirable for the many wetlands crossed by the pipeline and it will mean additional eating away at deeded conservation land owned by land trusts.

The November 15, 2001, letter from the EPA raised the concern about future cumulative impacts and suggested that certain stretches of the pipeline might carry exclusions that would prevent future tie-ins in order to prevent additional direct and indirect impacts, such as habitat fragmentation and loss of tree canopy, that would further compromise the functional capacity of various wetland systems along the route. The final EIS should place such restrictions on all parts of the route that pass through or adjacent to wetlands, particularly forested wetlands, and land trust and other conservation properties.

V.C. Route alternatives (Sect. 4.3)

V.C.1 Sachems Head and Short Beach Route Alternatives (Sects. 4.3.2 and 4.3.3)

Both the Route alternatives proposed by Islander East would cross properties of the Branford Land Trust and are therefore not preferable in terms of impacts on conservation lands.

V.C.2 New Haven (Amtrak) Route Alternative (Sect. 4.3.7)

The request by the Branford Land Trust that alternative routes along major transportation corridors cited the Amtrak/I-91 corridor as an example, not with the expectation that this would be the only such alternative to be examined. Furthermore, Islander East appears to have chosen the specific route within this corridor that was least likely to be acceptable when other routes (for example, the route proposed in the Branford Land Trust's submission on February 16, 2002: south from the intersection of the existing Algonquin pipeline and I-91 along the wide grass median strip of I-91 to Exit 9, where a rail line runs southwest into a large marshalling yard) might have proved less problematic. This tendency of Islander to select the worst route when evaluating alternatives, and FERC's acquiescence to this tactic, guarantees that routes with potentially lower environmental impacts that Islander finds unacceptable for other reasons (for example, higher costs of construction) won't be properly evaluated.

V.D. Route Variations (Sect. 4.4)

V.D.1 Pine Orchard Variation (Sect. 4.4.1)

The Pine Orchard Variation is another example of Islander East, and FERC, choosing the details of a suggested variation that will most strongly mitigate against its selection. The DEIS states that none of the Pine Orchard Variation would be located along existing right-of-ways when small adjustments would have aligned the route along the Amtrak right-of-way and Totoket Road. Furthermore, Islander East chose to direct the Horizontal Directional Drill HDD path in the Pine Orchard Variation toward the HDD breakout point on the original route, introducing technical difficulties that might reduce the chances of success of the HDD, when drilling directly south would have eliminated these technical difficulties and also reduced the distance required for the clamshell dredging and the associated environmental impacts. Ultimately, however, it seems that the deciding factor in discarding the Pine Orchard Variation was that a golf club would be impacted for a season and that more people might have to look at the HDD rig. The Land Trust does not understand how the visibility of a drilling rig for three months and the inconveniencing of a golf club for a season is considered to be a greater environmental impact than clearing part of a nature preserve, even the reduced area impacted by the Pond Variation, that by FERC's own admission could take as long as 150 years to recover. People benefit from the product being delivered by this project. People, not natural areas dedicated to conservation, should bear the impact of the construction.

VI. Incomplete or inaccurate data

Islander East has not completed geotechnical analysis of HDD site (Sect. 3.3.2.2, page 3-30).

- Islander East has not completed its modeling of sediment transport (Sect. 3.3.3.2, page 3-42). **An Environmental Impact Statement that lacks a complete and valid sediment transport analysis is incomplete and defective.**

Islander East has not provided a plan for an alternate crossing method from the Connecticut landfall out onto the Sound in the event that the HDD fails (Sect. 3.3.2.2, page 3-31). **An Environmental Impact Statement that lacks an analysis of the alternative crossing method is incomplete and defective.**

- According to testimony of Dr. Lance Stewart to the Connecticut Siting Council, the list of fish species known to occur in the project area (Table 3.4.1-1, page 3-46) is missing numerous species. These include blackfish (tautog), and sand eels or sand lances (Ammodytes americanus). The latter serves as an important food source for numerous commercially important fin fish species, including cod, bluefish and summer flounder, and for the federally endangered roseate tern.

- Islander East's initial analysis of state-listed endangered, threatened, or special concern species that occur along the pipeline route was based on a search of the CTDEP database, not on field studies. While the state database provides important information about known populations of such species, it is incomplete and cannot be substituted for thorough field studies of the proposed route carried out by independent professionals. Its contents are not the results of comprehensive surveys that covered all areas of the state, and it depends to a large degree on information voluntarily submitted by persons other than DEP field staff. A comprehensive study of the pipeline route at multiple times of the year by independent third party environmental firms or organizations selected by CT DEP and funded by Islander East should be conducted, and the results filed directly with CTDEP and FERC.

  In describing the Pond Variation (Section 4.4.2, page 4-38), the DEIS confuses the pond that is on Land Trust's Goss property with the pond on the Gould Lane property (the Goss pond does not "contain lilypads"), suggesting that it did not properly evaluate the impact to the pond on the Goss property when considering the relative impacts of the Pine Orchard Variation and the Pond Variation.

  Islander still has not identified private water supply wells in the project area (Sect. 3.3.1, page 3-22).

  The DEIS analysis is erroneously based on the assumption that the pipe will be buried for as little as half its diameter in off-shore areas (Sect. 3.8.1.2, page 3-81). DOT regulations require that marine pipelines (except in the Gulf of Mexico) be covered by at least 3 feet of material. This error calls into question the validity of the DEIS analysis of the pipeline impacts in Long Island Sound.

- The DEIS incorrectly states (Sect. 3.8.3.2, page 3-102) that the pipeline route crosses only one property of the North Branford Land Trust. (It crosses two, NHV-087 and NHV-090, that are separated by Arthur Road.)

The Branford Land Trust's
response to the
ORDER ON REHEARING AND ISSUING CERTIFICATES
(100 FERC ¶ 61,276)
by the Federal Energy Regulatory Commission
for the Islander East Pipeline Project
(FERC Docket # CP01-384-000 et al)

October 17 , 2002

The Branford Land Trust concurs with conclusion of Connecticut's Attorney General in his Request for Rehearing, dated October 7, 2002, that the Commission's Order of September 19, 2002 was based on incomplete and faulty environmental data and contains errors of fact that call it's validity into question. (The Land Trust takes no position on questions of law.) The Land Trust also questions whether promoting market efficiency, the primary justification given by the Commission for issuing certificates to this project, can provide sufficient justification for giving private, for-profit corporations the power to seize the property of private individuals and organizations.

Factually inaccurate and illogical analysis of the supposed benefits provided by Islander East

The Commission bases its attempt to rationalize its decision to disregard the conclusion of its own staff that an environmentally preferable alternative route exists for transporting gas to Long Island on two issues:

- Islander East better provides market diversity to a region where none currently exists,
- Islander East better enhances the security of the system by creating a fully independent means of transporting gas to Long Island.

These conclusions are based on inaccurate factual analysis and illusory distinctions between the Islander East Project and the Iroquois ELI Project.

The Commission falsely characterizes the system that currently provides natural gas to Long Island. Paragraph 56 states:

> The proposed Islander East Project provides two significant benefits that Iroquois' ELI project does not. First, **Iroquois is currently the only pipeline that provides direct access to Long Island**. The proposed Islander East Project will provide Long Island with another source of supply, **allowing this market to enjoy the benefits of pipeline-to-pipeline competition for the first time**. More importantly, the proposed Islander East project will provide much needed security and reliability by providing **a second facility to access supply** in the event something happens to either of the pipeline facilities. [Emphasis added.]

This analysis inexplicably ignores the existing Transco pipeline, which can currently deliver up to 489,000 Dth of natural gas per day from New Jersey to southwestern

Nassau County. The Commission knows full well that this pipeline exists and functions, since it issued an order on November 8, 2001 (97 FERC ¶ 61, 165) that approved a project that would have increased the capacity of the pipeline by an additional 125,000 Dth per day (the Cross Bay Pipeline Project). Thus, Long Island already enjoys the market competition and system redundancy that are the supposed reasons for preferring the Islander East Project over another less damaging alternative.

The Commission inappropriately dismisses the argument that the interconnected nature of the pipeline system in southwestern Connecticut provides sufficient reliability. The Commission makes several arguments about the effects of a disruption of a single section or component of the highly interconnected existing system (in this case some part of the Iroquois system) which it concludes support the need for the Islander pipeline (paragraphs 100, 101). In fact, those arguments apply equally well to the Islander and the Iroquois pipeline, suggesting that there is no intrinsic reliability benefit provided by the Islander pipeline relative to the Iroquois ELI project.

- Paragraph 101 states that "Rerouting capacity from other pipelines would be dependent on interconnecting pipelines and the feasibility of being able to get that capacity for use on Iroquois' system." Surely, replacing lost capacity on the hypothetically damaged Iroquois pipeline by delivery via the Islander pipeline will also require rerouting capacity on the same pipeline systems (Algonquin, Tennessee) regardless of whether the route to Long Island is from Milford or from North Haven via Branford. The Commission fails to explain why the capacity would be available for delivery to the Algonquin compressor in Cheshire but would not be available for delivery to Shelton or Brookfield. The Commission also fails to address the question of how the pipeline with the lower operating capacity (Islander's maximum operating pressure is more than 25% lower than Iroquois') is the superior choice for providing back-up capacity in the event of damage to the system.
- Paragraph 101 also states, "Moreover, getting the rerouted capacity to Long Island would also depend on Iroquois' shippers to contract for that capacity and to find other sources to replace the gas that was lost." The same need to contract for capacity along an alternative route will be required regardless of whether that route delivers gas to the Iroquois system downstream of the damaged section or to the Algonquin compressor in Cheshire. Furthermore, the Commission surely realizes that the gas contracted for by the shippers has not been "lost". It is still in the pipeline system and can be delivered to the desired point of receipt by any of several routes in the highly interconnected system.

The Islander East Project threatens market diversity rather than enhances it. A consistent and frequent theme of the Commission's arguments in favor of the Islander East Project is the need to enhance market competition (e.g., paragraphs 39, 40, 46, 50, 51, 56, 99). The decision by the Commission fails to recognize or account for the deleterious effect on competition of allowing one of the largest customers of gas on Long Island (KeySpan) to obtain a controlling interest in a pipeline that will, by some estimates, provide Long Island with a gas pipeline capacity that is greatly in excess of the market demand. (The Commission has made no attempt to evaluate the true level of

demand on Long Island, and in its consideration of the Islander East application accepted as fact at least one precedent agreement, i.e., AES Calverton, that is at best unlikely to materialize in the foreseeable future and at worst completely fictitious.) This vertical integration could allow KeySpan to engage in anticompetitive behavior by undercutting its competition. If the Commission were truly concerned about enhancing market forces, it would be working to separate the financial interests of the pipeline companies and the downstream consumers, not to consolidate them.

Inadequate environmental analysis

Major deficiencies in the Final Environmental Impact Statement on which the Order was based have been detailed in a letter to the Commission from the United States Environmental Protection Agency (EPA), dated September 30, 2002 (FERRIS Accession # 20020930-5047). The Land Trust concurs with the comments and conclusions of the EPA, particularly with the observation that "the FEIS lacks the detailed information necessary to understand the direct, indirect and secondary impacts to wetlands and waters of the United States" and that the FEIS is incorrect in concluding (Section 5.1) that "the construction and operation of the Islander East Pipeline Project would result in limited adverse environmental impacts."

The Branford Land Trust, the Towns of Branford and North Branford, and many other organizations and individuals have submitted numerous documents and provided oral testimony detailing the environmental damage that can be expected to result from this project. The FEIS, and the Commission, dismiss these carefully documented submissions with repeated unsupported statements expressing the belief that adverse impacts will be "adequately minimize[d]", without even providing an indication of what constitutes an "adequately minimal" level of damage. (See, e.g., Sect. 3.3.2.2, page 3-35 of the FEIS and paragraph 80 of the September 19 Order.)

Another indication of FERC's deficient analysis of the environmental impact of the Islander East proposal is the recent determination by the Connecticut Department of Environmental Protection that the project is not consistent with Connecticut's federally-approved Coastal Zone Management Plan. The letter communicating that decision to Islander East, which was copied to FERC, indicates that the project will have unacceptable adverse impacts on water quality, shellfish habitat, and tidal wetlands, and will result in the permanent replacement of a water-dependent use (cultivating and harvesting shellfish) by a non-water-dependent use (a natural gas pipeline).

The FERC Order excuses the failure of the FEIS to adequately analyze potential environmental impacts and to base its analysis on incomplete and faulty information (particularly the deplorably inadequate modeling of sediment dispersion from the proposed dredging of the transition basin and trench in Connecticut near-shore waters) by stating that it is required to discuss only "effects that are likely, foreseeable or reasonable [sic] foreseeable". It is foreseeable, based on historic weather records, that there is a significantly high probability that the dredged sediments will be exposed to larger erosive and dispersive forces than were used by Islander East to analyze the dispersion of

sediments. As a consequence, it is likely that there could be greater impacts of these dispersed sediments on nearby productive shellfish habitat than predicted in the FEIS. It is foreseeable, based on a study prepared for the Connecticut Department of Environmental Protection and submitted to FERC, that construction between MP5.4 and 5.6 will exacerbate the contamination of groundwater resources. It is foreseeable, based on studies of chemical contamination of working railroads that were submitted to FERC, that excavation along the Tilcon right of way in or immediately adjacent to wetlands will disturb contaminated soils and degrade the water quality of the nearby wetlands. The FEIS and the Commission fail to address these foreseeable impacts in a meaningful way, stating only that Islander East should continue consulting with affected parties and environmental regulatory agencies, or conduct further studies, without stating standards that must be met in order to insure that the impacts will indeed be "adequately minimized".

Conclusion

The Federal Energy Regulatory Commission, in ordering the issuance of certificates for construction and operation of the Islander East Pipeline Project, relies on a factually incorrect analysis of the interstate gas delivery system that provides gas to Long Island, illusory distinctions between the Islander East and Iroquois projects, and incomplete and inaccurate analyses of the environmental impacts of the Islander East Project. It also disregards the environmental impacts that its own staff and other federal and state regulatory agencies have called to its attention repeatedly. In doing so, and by granting the power of eminent domain, the Commission is simply and inappropriately favoring and enhancing the financial interests of two large and powerful corporations at the expense of the environment and the property rights of small land owners, including three land trusts whose purpose is to hold their communities' natural resources in trust for future generations.

"The mission of the Branford Land Trust is to preserve open space in Branford and to promote our community's appreciation of Branford's diverse natural features."

August 11, 2002

Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426
Attention: Magalie R. Salas, Secretary

Re: Islander East Pipeline Company
Docket Numbers: CP01-384-000, CP01-385-000, CPO1-386-000

Dear Ms. Salas:

The Branford Land Trust requests leave to file comments on Islander East's July 18, 2002 and July 29, 2002 analyses of sediment erosion, dispersion and deposition in the nearshore waters of the Thimble Islands and Stony Creek. I have enclosed 14 copies of the comment for the Commission's files.

The analysis submitted by Islander East and its consultants continues to be seriously deficient. The latest submissions finally begin to analyze and acknowledge the large amount of erosion of the mounds of dredge spoil that will occur during the proposed installation of the pipeline. However, the analysis is fragmentary and limited, giving a dangerously incomplete picture of the likely consequences if Islander East is permitted to proceed with its poorly conceived project.

Although it is never stated, the reports prepared by Dr. Frank Bohlen and his colleagues and by Applied Science Associates, Inc. (ASA) clearly indicate that **it is virtually guaranteed that large amounts of sediment will be eroded and transported onto nearby productive oyster beds** as a result of the proposed side-casting of dredge spoils to form large mounds that will be exposed to the waves and currents associated with frequent "high energy wind events", (Dr. Bohlen's euphemism for winter storms). Islander East is evidently quite aware of this, given the last minute decision to reduce the height of the spoil mounds surrounding the transition basin from the initially proposed 11 feet to 9 feet (the July 18 report still speaks of 10 foot high mounds, p. 4 and Figure 3), and the closing statement of the ASA report that "These model results will be further refined by optimizing the location and height of the temporarily-created mounds to minimize the deposition pattern extent and thickness." A careful reading of the reports, however, reveals admissions that large amounts of sediment dispersion will occur. The

ASA report indicates that even when scaled back to 9 feet, **the mounds will suffer as much as 1 foot of erosion (about 10% of the stored sediment).** The Bohlen July 18 report states that 1 to 2 meter waves proceeding from the southwest will break on the surface of the mounds (p.5), that wave orbital velocity-induced shear stress, which is the factor responsible for the erosion and suspension of sediment, **increases 1-2 orders of magnitude (tens to hundreds of times)** due to the presence of the mounds (p.5), and that "**erosion** and winnowing of the upper surfaces of the placed mound **will occur**" (p. 6, emphasis added).

The important questions are how much erosion will occur and where will the eroded sediments go. It is here that the deficiencies of the submitted analysis become apparent.

- The reports fail to provide the dimensions of the sediment plumes that are predicted to be produced by dredging or by storm events with the range of wind and wave conditions described by Dr. Bohlen's data and other studies (Signell, R.P., List, J.H, and Farris, A.S., 2000. Bottom Currents and Sediment Transport in Long Island Sound: A Modeling Study. *Journal of Coastal Research*, 16(3), 551-566; Signell, R.P., Knebel, H.J., List, J.H, and Farris, 199A.S.,Physical Processes Affecting the Sedimentary Environments of Long Island Sound. Published in Proceedings, 5th International Conference on Estuarine and Coastal Modeling, M.L. Spaulding and A.F. Blumberg, Eds., ASCE Press; cited and discussed in the Land Trust's comments on the DEIS).
- The sediment deposition modeling presented in the ASA report analyzes only a portion of the mounds: in the north grid, the mound around the basin is modeled, but not the mound at the side of the trench; in the south grid, it appears that only about 82% of the mound that lies within the grid is modeled.
- There is no analysis of the sediment dispersion at the Long Island landfall.
- The erosion modeling does not examine conditions likely to be encountered in a major storm. Rather, it only examines conditions derived from field measurements during a period when Dr. Bohlen's data indicate that there was only one moderate intensity storm.
- The features of the predicted sediment erosion and deposition raise suspicions about the accuracy of the modeling: the pattern of deposition of the sediment eroded from the mound surrounding the transition basin shows an offset due east, whereas the net tidal current vector is to the northeast and winds and waves associated with storm events are most likely to come from the southwest and carry sediment to the northeast.
- The sediment deposition model is insufficiently sensitive: it fails to identify the area that will experience deposition of as little as 0.5 cm (0.2 in, 0.017 ft) of sediment, the amount that smothers oysters.
- The reports fail to present the cumulative impact of sedimentation associated with the different parts of the operation (dredge-induced suspension and dispersion, erosion of mounds), which are discussed in different reports (dredge-induced effects in the April 8 Bohlen report, erosion of mounds in the July 18 Bohlen report and the ASA report).

As noted in previous submissions by the Land Trust, the sediment erosion, dispersion and deposition issues are most critical in the nearshore area near the breakout point of the horizontal directional drill. This is because the sediment mound surrounding the transition basin will be exposed for the longest period and because it is in the shallowest water. The July 18 Bohlen report states that the erosion rates vary as a function of water depth, wave height and wave period, and that **maximum erosion will occur along the northern limits in and around the transition basin**. Unfortunately, **this is the area of the dredging closest to the oyster beds** to the east and northeast, which are threatened by the effects of sediment deposition.

The applicant should be required to provide specific figures for the volumes of sediment that will be lost and plume dimensions, and the assumptions and parameters that led to these values. FERC should also request the results of the modeling for the 10 and 11 foot mounds that led to the decision to reduce the height of the mounds to 9 feet. Lacking such specific information, I have attempted to roughly estimate, based on scattered data in the Bohlen and ASA reports, how much sediment will be dispersed. The total amount proposed to be dredged is 51,186 yds^3 (6500 yds^3 for the basin, 46,686 yds^3 for the trench). Of this, Dr. Bohlen estimates that 5% (2,559 yds^3) will be suspended and dispersed during dredging. Since a similar percentage will be suspended and dispersed when the sediment is replaced in the trench, **the total loss of sediment from dredging operations alone will be about 5,118 yds^3**. According to the ASA report, erosion of the transition basin mound will be as much as **11%** of the total volume (**715 yds^3**). Estimating the predicted erosion from the trench mound is more difficult, due to the limited information in the ASA report. Erosion from the south end of the trench mound is predicted to range up to 0.5 feet. The erosion at the north end is not modeled, although Dr. Bohlen notes that erosion will be more severe in more shallow waters (July 18 report, p. 6), suggesting that a figure of about 0.5 feet would be conservative. It is thus likely that between 0.2 and 0.5 feet of the trench mound will be lost (0.18-0.45 feet; 2.2-5.5%; **1027-2568 yds^3**).

Thus, a conservative estimate of the amount of dispersed sediment is **6860-8400 yds^3**, 13-16% of the total dredged material. It should be noted, however, that **if a major storm strikes when the spoil mounds are exposed, the amount of suspended and dispersed sediment could be much higher**, since the modeling was done using data obtained in the field at a time that was relatively free of Dr. Bohlen's "aperiodic high energy events" (major storms).

Another key issue is where the suspended material goes, which is related to the nature of the suspended material. In numerous places, Dr. Bohlen strongly asserts that the cohesive nature of the sediment means that it will fall out of suspension within a short time (and distance) of when (where) it was suspended, and that the dredged materials will resist erosion. I would point out, however, that careful reading reveals that Dr. Bohlen qualifies that conclusion. For example, the April 8 report (Appendix A of the July 18 report) notes that "engineering methods and procedures, and in particular production rate(s), govern the initial source concentrations and material distributions over the water column and **establish the susceptibility of bottom placed materials to long-term**

erosion and transport" (emphasis added), and the July 18 report states that "bottom placement of excavated sediments **can** result in a deposit which retains many of the geotechnical characteristics of the undisturbed bottom", leaving open the possibility that the deposits will not be as resistant to erosion and suspension as the undisturbed bottom.

All of Dr. Bohlen's analyses refer to "bottom placement" of the dredged material. This is important, since releasing the spoil at or near the surface and letting it fall through 10-20 feet of water will suspend a much larger amount of the sediment, as well as further disturb and resuspend sediment that has already been deposited on the mound. However, it is not always possible to carefully place the dredged material on the bottom. For example, the report of Dr. Bohlen's study of the sediment dispersion produced by the installation of the Iroquois pipeline in Milford in 1991 (Bohlen, Cohen & Strobel, "An Investigation of Sedimentation Induced by Gas Pipeline Laying Operations in the Vicinity of the Oyster Bed Lease Areas, Milford, Connecticut, Final Report", March 17, 1992) states that "**Placement typically involved release of dredged sediments at or near the water surface and subsequent gravitational settling to the bottom. Attempts to place materials directly by opening of the dredge bucket just above the bottom were not successful.**" The consequences of such a practice in Branford, where the sediments are primarily fine clays and silts, would be much more onerous than in Milford, where the sandy material settles relatively quickly.

Once the sediment is suspended, the rate at which it settles from the water column depends on grain size and cohesiveness. In the April report, which discusses only dredging, not erosion, Dr. Bohlen states, without providing much support, that 80% will settle within 66 feet, creating a layer 1.9 cm (0.75 inches) thick and "much of the rest" will settle within the next 300 feet, creating a layer 1.2 mm (.04 inches). This optimistic prediction, however, is contradicted by Dr. Bohlen's earlier findings (Bohlen, Cundy & Tramontano, Estuarine and Coastal Marine Science, 9:699-711, 1979) that sediment levels downstream of a dredge in the Thames River did not return to background levels in less than 700 meters (about 2200 feet). The ASA findings, which shows deposition of 0.6 inches or more as far away as 460 feet from the mound, also seem to contradict Dr. Bohlen. The ASA study apparently did not determine the larger area covered by sediment 5 mm (0.2 inches, 0.016 feet), which is sufficient to smother oysters.

The suspended material that produces the 0.6 inch deposition predicted in the ASA report (p. 3) will be smaller grain sediments that are thoroughly disaggregated and resuspended during dredging or as a consequence of erosion. Only these particles are likely to travel such distances from the trench location. Unfortunately, they are likely to travel much greater distances than the report discusses. In the April report, Dr. Bohlen noted "**increases in suspended material concentrations** throughout the inshore region that **persist for several days after the period of peak winds**", long enough to allow transport throughout the Stony Creek and Thimble Islands area. Dr. Bohlen also states in the July 18 report (p. 6) that "**erosion products are easily resuspended**", that is they will likely be resuspended again and again (the "winnowing" that Dr. Bohlen mentions), spreading further each time, and that they "**form relatively coherent plumes subject to far-field dispersal**". (There is no estimate of the potential distances involved.)

Additional sediment resuspension could result if dredging is required to maintain the transition basin and trench. This was required during the installation of the Iroquois pipeline in Milford, when a major storm on March 23, 1991 completely eroded the spoil mounds into the trench and onto shellfish beds (John Volk, CT Dept. of Agriculture, Aquaculture Division, personal communication). The decision to move the mound to the west side of the trench, while allowing for the capture of the larger grained eroded material, increases the probability that such additional dredging could be necessary. The relative ease of resuspension of erosion products cited above suggests that if such dredging were necessary, more than 5% of the dredged sediment would be resuspended and lost.

The decision to reduce the height of the spoil mounds from 10 and 11 feet to 9 feet raises a question of what the configuration of the sides of the mounds will be and if the change in configuration might make them less stable. Islander claims that it can accommodate all the sediment in piles that are 11-18% shorter without increasing the footprint of the mound. This can only be done by piling the sediment more steeply, which in turn is likely to increase the tendency of the sediment to deform under the force of gravity, possibly decreasing its coherence and making it more susceptible to erosive resuspension. Islander East should demonstrate how the shapes of the shorter mounds will affect their coherence.

The sensitivity of the sediment dispersion to the height of the mound also makes it critical that the mounds not end up being higher than whatever height is finally determined to be acceptable (if there is such a height). Provision should be made for an independent inspector to be on-site throughout the entire dredging operation with the authority to immediately halt dredging operations if the height of the spoil mounds exceeds the authorized height.

Finally, I would like to address Dr. Bohlen's pervasive inference that the effects of dredging will not be a significant increase against the background of storm-related resuspension and transport of sediment that the area is already experiencing. Dr. Bohlen clearly believes this. In his report on the sedimentation induced during the Iroquois installation, he compares the sediment generated during dredging operations during fair weather with the massive sediment generated by the March 23 storm and draws this conclusion. In that report, however, he fails to mention that the storm erased the existing sediment mounds. To draw the conclusion that he does, it would be necessary to show that a similar storm created a similar level of sedimentation at a time when sediment mounds were not present. Of course, that data is not available, but Dr. Bohlen should have at least acknowledged the possibility that the massive resuspension of sediment by the storm was a direct consequence of the presence of the sediment mounds. (Dr. Bohlen may overestimate the effects of large storms on normal bottom conditions. Mr. Volk of the CT Division of Aquaculture has quoted Dr. Bohlen as saying that a 100 year storm would more or less completely repair the destructive effects of the Iroquois pipeline installation on the Milford shellfish beds. Unfortunately for Dr. Bohlen's theory, a 100-

year storm has come and gone and the damaged beds are still not restored to their prior level of productivity, even after more than 10 years.)

Even more telling are Dr. Bohlen's conclusions in his published study of the dredging in the Thames River, cited above. He calculates that the dredge-induced increase in suspended sediment is less than 25% of the ambient sediment load in the entire estuary, ignoring the fact that the area impacted by the dredge-induced sediment is only about 2.5% of the area of the estuary, meaning that this limited area experiences a 10-fold increase in sediment deposition. He then compares the <25% increase averaged over the entire estuary with a storm-induced increase of more than 2.5-fold and concludes that the effect of dredging on the entire estuary is much less that the effects of natural events. This analysis ignores the fact that increasing sediment deposition by more than 10-fold has a major impact on the 2.5% of the estuary that experiences that increase. An analogous argument might be that a third degree burn on your hand or face is negligible because we get mild sunburns on large parts of our bodies all the time.

Dr. Bohlen's beliefs are legitimately held, but like any scientific hypothesis, they must be constantly tested against the hard truths of the real world. It would be unfortunate if the Islander East pipeline installation and its effects on Stony Creek and the Thimble Islands provide the data set that ends up disproving Dr. Bohlen's assumptions.

I will end by again quoting the closing statement of the ASA report. "These model results will be further refined by optimizing the location and height of the temporarily-created mounds to minimize the deposition pattern extent and thickness." Islander East and its consultants should further refine their modeling, but it must be made clear to them that the Final Environmental Impact Statement cannot be issued until they have completed that refinement and allowed FERC analysts and the affected residents of Connecticut to evaluate the accuracy of the modeling. The FEIS cannot be based on information that is incomplete and evolving.

Respectfully submitted,

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Continued Problems with Islander East's Analysis of Sediment Erosion, Transport and Deposition in the Stony Creek Area

Branford Land Trust
October 2, 2002

In a letter dated September 13, 2002, Islander East responded to questions raised by the Branford Land Trust about the reliability of Islander East's predictions regarding the suspension, distribution and deposition of sediment onto Stony Creek Harbor and the Inner Thimble Islands as a consequence of the conventional dredging and sidecasting of spoils from MP 10.9 to MP12 (approx.). Islander East's response contains internal contradictions and misrepresentations of its own data. Interestingly, it also contains **new information about the possible mechanism of sediment settling that raises further questions about the accuracy of Islander's predictions** in materials filed with FERC and other regulatory agencies. The Branford Land Trust would like to restate its concerns about the probability of large amounts of sediment deposition as a consequence of Islander's activities, focusing on the contents of the September 13 letter from Islander East. The following points will be addressed.

- New information which suggests that the sediment concentration in the plume created by dredging and the erosion of the spoil mounds could be 2 to 5 times higher than the average concentrations measured by Dr. Bohlen during high energy wind events.
- Misrepresentation of the lower boundary of sediment deposition thickness analyzed in its modeling.
- Inconsistencies between Islander's claims in the letter about conditions at the dredge site and the data provided by Islander to FERC and the Connecticut Siting Council.
  The adequacy of Islander East's modeling.

New information about the concentration of sediment in the plume

The Islander letter notes that the high rate of settling near the source of sediment is a consequence of the concentration of sediment (due to flocculation?), not the cohesiveness of the sediment being dredged as was implied in its filings to FERC and the Connecticut Siting Council and in Dr. Bohlen's testimony to the Siting Council. It also notes that this concentration-dependent effect **ceases to operate at sediment loads "less than 500 millegrams per liter.** After that, sediment is governed primarily by individual particle grain size resulting in **significantly lower deposition rates, particularly for the finer grained fractions such as the silts and clays dominating the Connecticut near shore."** (Emphasis added.) It should be noted that the sediment levels at the Branford inshore monitoring station never reached a level of 500 mg/liter during the six weeks of data provided by Dr. Bohlen (attached), despite the presence of several high-energy events. In fact, surface sediment concentrations never exceeded 100 mg/liter. Thus, the

new information provided by Islander indicates that sediment concentrations in the plume are likely to be several-fold greater than typical storm conditions, contrary to what Islander has claimed. Also, as noted in previous submissions by the Branford Land Trust, Dr. Bohlen has noted that elevated sediment loads that result from wave-induced resuspension tend to persist for several days after the end of the storm event, suggesting that the plume will persist and spread throughout the area.

Furthermore, the fact that the rapid settling of sediment near the source is not due to any residual cohesiveness of the sediment suggests that the prior dispersion of the sediment will render it much more susceptible to erosion and dispersion during subsequent dredging operations and high-energy weather events. Thus, even the sediment that settles out close to the dredging site is likely to be resuspended and dispersed at a later time.

Misrepresentation of the lower limit of sediment deposition thickness analyzed by the modeling

In its letter, Islander states that its analyses "have placed primary emphasis on the region bounded by depositional thicknesses of approximately five millemeters, **a value agreed to have detrimental effects on oyster larval settlement.**" (Emphasis added.) It is gratifying that Islander acknowledges the detrimental effects of as little as five millemeters of sediment. However, it misrepresents the amounts of sediment that its modeling analyzed. Contrary to its claim in this letter, the lower limit of sediment deposition that was determined was 0.05 feet, i.e., 0.6 inch or about 15 millemeters. Deposition of this thickness, three times the amount of sediment that is detrimental to oysters, is predicted to occur as far as 460 feet from the mound. The model fails to determine how large an area will be covered by as little as 0.5 millemeters. As noted in the Land Trust's August 13 letter, Dr. Bohlen's own prior studies suggest that this area could be substantially larger. Moreover, photographs taken of the dredging operation associated with the installation of the Iroquois pipeline at Milford, CT in 1991, show a substantial plume of sediment extending at least 3600 feet from the dredge. This distance is sufficient to reach to the inner Stony Creek Harbor, impacting prime oyster beds.

Inconsistencies about conditions at the dredge site

The Islander East letter clearly misstates one aspect of its own data , the normal background levels of sediment in the Stony Creek/Thimble Islands area, and seems to be implying a condition that is in disagreement with another, the cycle of tidal currents in the area near the mound surrounding the transition basin.

In attempting to refute the Land Trust's comparison of the sediment dispersion predicted for the Islander East dredging to a study of dredging in the Thames River published by Dr. Bohlen, Islander states that the downstream extent of the plume will be

governed simply by background concentration, and contrasts the background concentration in the Thames River (~5 millegrams per liter) with the supposed background levels in the area of the proposed project. However, an examination of the data obtained by Dr. Bohlen's inshore array of sampling devices for the period of Oct. 5 to Nov. 13, 2001 (attached) shows that surface background levels are also ~ 5 millegrams per liter or slightly higher. Background bottom sediment concentrations may be little higher, since the tracing merges with the X-axis for much of the trace. (The scale of the Y-axis covers a six-fold larger concentration range.) Thus, conditions in the Thames River are actually much like those encountered in the Stony Creek area in the absence of individual high-energy wind events.

The Islander letter also comments that the course of tidal currents follows an elliptical course during the tide cycle, which will tend to maintain the sediment in an area near the mounds. The Bohlen data clearly shows that the tidal currents in the area of the transition basin are atypical as a consequence of the presence of the Thimble Islands. During the flood tide, when the general direction of tidal flow is east to west, the islands deflect the current away from the shore, resulting in very little westward current near the basin. In contrast, during ebb tide, the eastward-flowing tidal currents are not deflected, resulting in a net transport to the east and northeast, into the Stony Creek Harbor and inner Thimble Islands. The fact that sediment at concentrations below 500 millegrams per liter will tend to stay in suspension for long periods of time, consistent with Dr. Bohlen's observation that sediment concentrations remain high for days after storm events, means that there will be ample opportunity for significant sediment transport away from the site of erosion and resuspension.

Islander carefully points out that the primary influence of waves is to produce a speed sufficient to resuspend sediment, but not a directionality to transport it away from the site of resuspension. It then claims that the settling time is short compared to the tidal period, implying that the sediment will not be transported far. This reasoning ignores two factors. The first is the long suspension times of fine-grained sediments at concentrations less than 500 millegrams per liter, discussed above. The second is that the times when wave energies and the consequent erosion and resuspension will be greatest is during storms. As noted in the articles by Signell and colleagues submitted by the Land Trust in its comments to the Army Corps of Engineers, winds from the west with speeds of 10 meters per second (about 22 miles per hour) produce eastward-running currents of 8-10 centimeters per second (in excess of tidal currents). A 15 meter per second wind, cited by Islander East as typical of a strong winter northeaster, would induce an even stronger current. Thus, the wind conditions that produce the waves also produce significant currents that will transport the sediment into Stony Creek Harbor and the Inner Thimbles, contrary to the inference of Islander East.

The inadequacy of Islander East's modeling data

Islander East states that the maximum wave in the data used to drive the model was 2 meters, typical of a strong northeaster. However, the wave height in the inshore data set

that was used to drive the LTFATE sediment dispersion model in the ASA study never reached 2 meters, and exceeded 1 meter on only one occasion during the six weeks of data collection (twice in teh modeling since the data set was run twice to give the 3 month time that the transition mound will be exposed to erosion. As previously pointed out by the Branford Land Trust, this data set is clearly less likely to produce erosion than an average three month winter period based on the twelve years of observations at the Ambrose Light meteorological station that were used by Signell. The erosion and transport modeling should be repeated with data that more closely reflects historical conditions. It should also be repeated using "worst-case" data, to determine the likely consequence if the mounds are exposed to an unusually severe storm.

In its letter, Islander East argues that since the spoil mounds are not rectangular, the loss of a foot from the top of 9 foot high mounds is not equivalent to 10% of the total. The point is well taken, but it assumes that erosion occurs only from the top of the mound down until the height of the mound is reduced by 1 foot. Unfortunately, the energetic flow of water across an prominence such as the mound will create turbulence on the downstream side of the mound which will promote the erosion of the face of the mound as well as the top. This is probably even more true of the situation when waves break over the mounds. It is not clear that Islander's modeling adequately captures these effects.

As noted in the comments by the US Environmental Protection Agency on the Final Environmental Impact Statement, dated September 30, neither Islander East nor the FEIS provided the detailed computer modeling data used to estimate sediment dispersion, so the Branford Land Trust is limited to raising questions about apparent inconsistencies and information that appears to contradict other published scientific material. The Land Trust supports the EPS's request that the detailed modeling data be provided to agencies such as the EPA, Army Corps of Engineers and CT DEP that have the technical capabilities to evaluate the accuracy of the modeling.

Excerpt from Islander East submission to Connecticut Siting Council

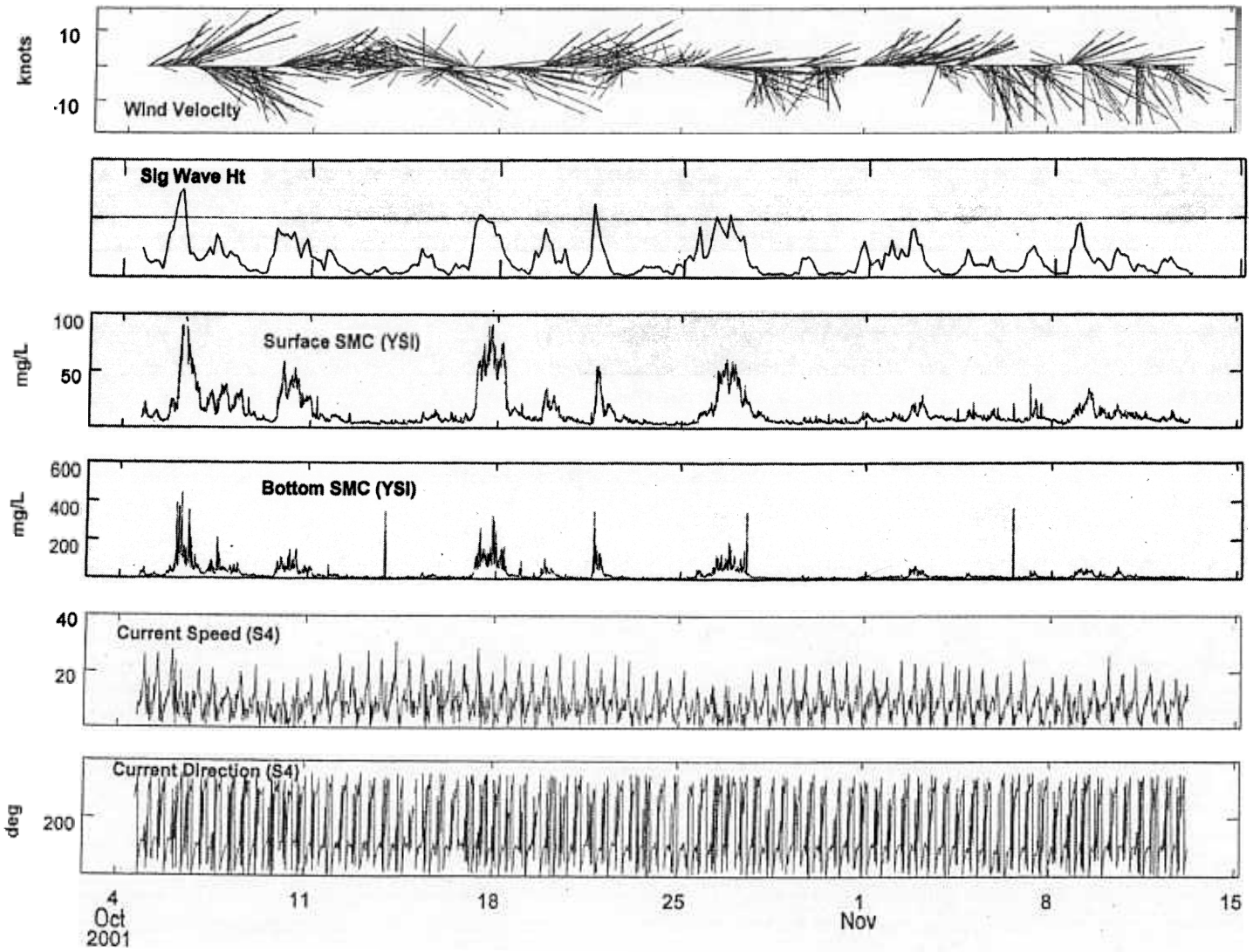

Figure 9. Representative time series data from the Branford inshore station.

Excerpt from Islander East 7/18/02 submission to FERC

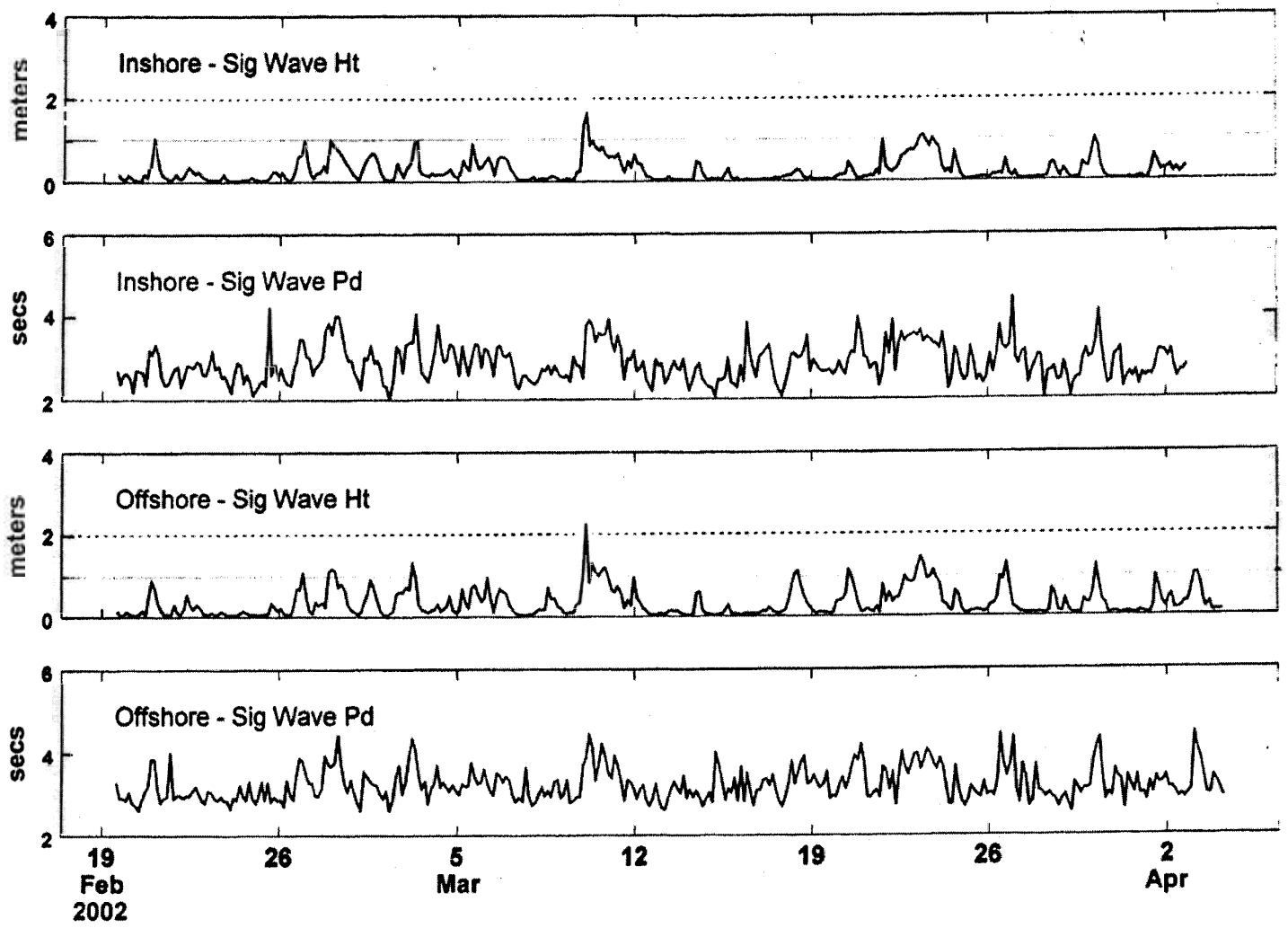

Figure 9. Significant wave height and period measured during March 10, 2002 storm (storm duration shaded in grey)