

Islander East conducted surveys for the plant species in July 2001 and summarized the results in the *New York Plant Survey Report* (Islander East, 2001b). The NYSDEC has received this report and a response from NYSDEC is pending. We concur with the survey's findings that implementation of the Islander East Pipeline Project would have no adverse impact on purple everlasting, Carey's smartweed, and opelousa smartweed. However, a population of button sedge was found at the interface of a palustrine emergent and palustrine forested plant community within the Carmans River wetland complex. Islander East's proposed use of the HDD method to install the pipeline beneath the Carmans River wetland complex and the installation of exclusion fencing around this population before construction would avoid impact to this population of button sedge.

Islander East identified potential tiger salamander habitat in the project area. Islander East, in consultation with the NYSDEC, would conduct tiger salamander surveys using approved protocols and qualified individuals in the spring of 2002. Islander East would provide a copy of the report to the FERC and NYSDEC once completed. Therefore, we recommend that:

- **Islander East should continue consultation with the NYSDEC regarding the tiger salamander and any other requirements for surveying, monitoring, or avoiding tiger salamanders and their habitats. The results of these consultations, including copies of all correspondence should be filed with the Secretary.**

3.7 WETLANDS

3.7.1 Existing Environment

Wetlands are areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of wetland vegetation typically adapted for life in saturated soil conditions (COE, 1987). Islander East used the 1987 COE Wetlands Delineation Manual to identify and delineate wetlands in New York and Connecticut that would be crossed by the project. Table 3.7.1-1 lists each wetland that would be crossed by the proposed project by milepost, wetland type, length of crossing, and acreage affected by construction and operation. Islander East has stated that access permission was requested for all portions of the project on land, and that permission was granted for approximately 25 miles (90 percent). Islander East has also stated that it is in the process of evaluating additional temporary workspaces for the project to determine if they are located within 50 feet of delineated wetlands. We would review all proposed workspaces for placement in relation to wetlands, prior to construction.

Based on the COE wetland delineation and an evaluation of National Wetland Inventory (NWI) maps, aerial photography, and NYSDEC-regulated freshwater wetland maps, the pipeline would cross a total of 43 wetlands for a total crossing length of 3.6 miles, or 12.8 percent of the total length of the pipeline on land (see table 3.7.1-1). These wetlands include 40 wetlands in Connecticut totaling 3.4 miles and 3 wetlands in New York totaling 0.2 mile. No wetlands would be affected by the proposed aboveground facilities.

The majority of wetlands that would be crossed by the pipeline are freshwater palustrine wetland types, including palustrine forested wetlands (PFO), palustrine scrub-shrub wetlands (PSS), and palustrine emergent wetlands (PEM). Palustrine wetlands systems include all nontidal wetlands that are dominated by trees, shrubs, emergent herbaceous plants, and emergent mosses or lichens (Cowardin et al., 1979).

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TABLE 3.7.1-1
Wetland Crossings

MP/Post	Wetland ID	Cowardin Classification ^{a/}	Crossing Length (ft)	Acres Affected by Construction (acres) ^{b/}	Acres Affected by Operation (acres) ^{b/}
ALGONQUIN FACILITIES					
3.7	CT-A42	PEM/PFO	422	0.73	
8.9	CT-A41	PEM	317	0.55	0.10
ISLANDER EAST FACILITIES					
Islander East Pipeline - Connecticut					
0	CT-A1	PEM/PSS	11	0.02	0.01
0.1	CT-A2	PEM/PFO	211	0.36	0.05
0.5	CT-A3	PSS/PEM	406	0.70	0.10
0.6	CT-A43	PEM/PFO	106	0.18	0.02
1	CT-A4	PSS	53	0.09	0.01
1.1	CT-A5	PEM/PFO	317	0.55	0.07
1.3	CT-A6	PEM/PFO	370	0.64	0.08
1.5	CT-A12	PEM/PFO	106	0.18	0.02
1.6	CT-A7	PEM/PSS	264	0.45	0.06
1.8	CT-A8	PEM/PFO/PSS	106	0.18	0.02
2.1	CT-A46	PEM/PFO	686	1.18	0.16
2.7	CT-A47	PEM/PSS	53	0.09	0.01
2.7	CT-A48	PEM	53	0.09	0.00
3.1	CT-A49	PEM	898	1.55	0.00
4.1	CT-A9	PEM/PFO	264	0.45	0.06
4.2	CT-A10	PEM/PFO	317	0.54	0.07
4.5	CT-A39 ^{c/}	PEM	10	0.01	0.00
4.8	CT-A11	PEM/PFO	1478	2.55	0.35
5.2	CT-A13	PEM/PFO	158	0.27	0.04
5.5	CT-A15	PEM/PFO	211	0.36	0.05
5.8	CT-A17	PEM/PFO	898	1.55	0.21
6.4	CT-A18/A19	PEM/PFO	581	1.00	0.13
6.6	CT-A25	PFO	528	0.91	0.12
6.7	CT-A26	PFO	898	1.54	0.20
7.1	CT-A27	PFO	211	0.36	0.05
7.4	CT-A28	PEM	53	0.09	0.00
7.5	CT-A29	PFO	53	0.09	0.01
7.5	CT-A30	PFO/PEM/PSS	686	1.18	0.16
7.8	CT-A31	PFO	1426	2.45	0.33
8.1	CT-A23	PFO	370	0.64	0.08
8.2	CT-A33	PFO/PSS	1,267	2.18	0.29
8.7	CT-A32	PFO	1,214	2.09	0.28
8.9	CT-A24	PFO/PSS/PEM	211	0.36	0.05
9	CT-A34	PFO	1,742	3.00	0.40
9.4	CT-A35	PEM/PFO	53	0.09	0.01
9.5	CT-A36	PFO	264	0.45	0.06
9.6	CT-A37	PEM	475	0.82	0.00
10.2	CT-A38	PEM	53	0.09	0.01
Islander East Pipeline - New York					
38.3	NY-B1-F	PFO	60	0.10	0.00
38.4	NY-B2-F	PFO	30	0.05	0.01
43.1	NY-B3-X	PFO/PEM	1,030	1.77	0.24
Calverton Lateral - New York					
No wetlands will be crossed by the Calverton Lateral					
TOTALS					
Connecticut			17,800	30.61	3.66
New York			1,120	1.92	0.26
			18,920	32.53	3.92

Note: some calculation differences may occur due to rounding.

^{a/} Classification of Wetlands and Deepwater Habitats (Cowardin *et al.*, 1979)

PEM = Palustrine Emergent

PSS = Palustrine Scrub/Shrub

PFO = Palustrine Forested

^{b/} Area affected by construction is based on a 75-foot-wide construction right-of-way; area affected by operation is based on a 10-foot-wide corridor centered over the pipeline that would be maintained in an herbaceous state.

^{c/} This wetland is located along the temporary access road located at MP 4.4.

In Connecticut, about 2.9 miles (80 percent) of the affected freshwater wetlands are forested wetlands or mixtures of forest and other wetland types. Forested wetlands in Connecticut include floodplain forests and lowland wet forests. Floodplain and lowland wet forests are dominated by deciduous hardwood trees, including green ash, American elm, and red maple, with occasional species of oaks and yellow birch. The shrub layer is typically sparse, but may contain dogwoods, spicebush, sweet pepperbush, winterberry, northern arrowwood, speckled alder, and saplings of tree species in pockets where the canopy has opened up, or where inundation levels prevent establishment of mature trees (Branford Land Trust, Inc., 2001). The herbaceous understory is commonly composed of woodland horsetail, sensitive fern, cinnamon fern, skunk cabbage, jewelweed, sedges, and joe-pye weed. The boundary between forested wetlands and uplands, or between forest and scrub shrub openings, often contain buckthorn, highbush blueberry, and greenbriar.

In Connecticut, about 0.5 mile of the affected freshwater wetlands are emergent wetlands or mixtures of emergent and scrub-shrub wetlands. Open wetland areas along the pipeline route are commonly mixed emergent marshes in lowlands with poorly drained soils. In some emergent wetlands, small areas are dominated by broad-leaved cattail or common reed. Mixed emergent marshes commonly contain reed canary grass, giant reed, woolgrass, Lady's thumb, soft rush, blue vervain, sedges, rushes, and arrowhead. Reed canary grass, which often forms dense monocultures, is a common dominant species in wet meadows along the pipeline route where it is aligned with the existing Algonquin C-5 pipeline. Emergent wetlands exist as complexes with scrub-shrub wetlands or forested wetlands with the less flood tolerant species located on the periphery of the wetland or on higher hummocks within the wetland.

One tidal wetland listed on New York's Tidal Wetland Inventory (TWI) would be crossed by the project between MP 32.7 and 32.9. This wetland is a littoral zone wetland and is crossed in waters adjacent to Long Island that are less than 5 feet deep. Littoral zone wetlands include all lands under tidal waters that are not included in any other category. Although crossing this wetland would require a Tidal Wetland permit from the NYSDEC, it does not contain vegetation and therefore is not considered a wetland, but rather open water in this section and section 3.8, Land Use, Recreation, and Visual Resources.

In New York, about 0.2 mile of the affected freshwater wetlands are forested wetlands or mixtures of forest and other wetland types. Forested wetlands on Long Island are typically dominated by red maple with blackgum, willow, and sweetgum as other possible canopy species. The shrub understory contains species such as sweet pepperbush, spicebush, highbush blueberry, and catbrier. The herbaceous layer, though variable with canopy density, generally includes one or more of skunk cabbage, jack-in-the-pulpit, jewelweed, and ferns (Stewart and Springer-Rushia, 1998). Emergent wetlands occurring in the vicinity of the Islander East Pipeline Project typically consist of herbaceous species such as cattail, purple loosestrife, arrowhead, common reed, bur-reed, pickerel-weed, wild rice, bulrush, and arrow-arum.

Near the Connecticut-Long Island shoreline, the pipeline corridor is adjacent to a portion of the saltmarsh. This emergent wetland is dominated by common reed along the wetland edges and saltmeadow cordgrass and smooth cordgrass dominate the interior area.

3.7.2 Environmental Consequences

General Construction and Operation Impacts

Several commentors requested that Islander East and Algonquin present their wetland construction and restoration procedures and evaluate impacts to wetlands. Wetlands perform a

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number of important functions, including water quality improvement, flood and stormwater control, and erosion control. They also provide recreational opportunities and excellent habitat for fish and wildlife. Wetlands help to maintain water quality through the removal and retention of nutrient and the reduction of sediment loads. In their natural undisturbed condition, wetlands act as a temporary storage area for flood waters and reduce the speed of water flow by spreading flow energy over wide areas. Flow velocity and energy generally decrease as water enters wetland systems and sediments which fall out are deposited and retained by vegetation in the wetland.

The primary impact of pipeline construction and right-of-way maintenance activities on wetlands would be the temporary alteration of wetland vegetation and permanent conversion of forested wetland to scrub-shrub or emergent wetlands. Construction would also temporarily diminish the recreational and aesthetic value of the wetlands crossed. These effects would be greatest during and immediately following construction. In emergent wetlands, the impact of construction would be relatively brief because the herbaceous vegetation would regenerate quickly. In forested and scrub-shrub wetlands, the impact would be of longer duration due to the longer regeneration period of these vegetative types, and clearing of wetland vegetation would result in temporary and permanent loss or alteration of wetland wildlife habitat and some wetland functions.

Other impacts associated with construction of the pipeline could include temporary changes to wetland hydrology and water quality. Compaction and rutting of wetland soils could result from the temporary stockpiling of soil and the movement of heavy machinery. Surface drainage patterns and hydrology could be temporarily altered during construction and there could be an increased potential for the trench to act as a drainage channel. Increased siltation and turbidity may result from trenching activities. In addition, trenching could penetrate or remove impervious soil layers under the wetland and, consequently, drain perched water tables. This in turn, could result in drier soil conditions which could inhibit the reestablishment of wetland vegetation. Disturbance of wetlands also could affect the wetland's capacity to control erosion. General construction methods that are used to mitigate for impacts to wetland soils are discussed in section 3.2.2 under "Hydric Soils and Drainage" and "Muck Soils".

Wetland Construction and Mitigation Procedures

Several commentors requested that Islander East and Algonquin develop and implement procedures to minimize and mitigate potential project impacts in the wetlands. To minimize the potential environmental impact of construction in wetlands, Islander East and Algonquin would implement avoidance, minimization, and mitigation measures contained in the ESC Plan. These measures include most of our Procedures regarding pipeline related construction, restoration, and maintenance. However, one exception specifically regarding forested wetland revegetation was identified by Islander East as a deviation from our Procedures. The following is a discussion (by section of the Procedures) of the measure for which Islander East proposed an alternative measure.

VI.D.5 For all forested wetlands affected:

- a. plant native trees to ultimately restore the temporary right-of-way and the non-maintained portion of the permanent right-of-way to its preconstruction state;
- b. plant native shrub and herbaceous species to revegetate the 30-foot-wide portion of the permanent right-of-way; and
- c. consult with the FWS, EPA, COE, and the appropriate state agency to determine the density for planting the native trees and shrubs.

Islander East stated that reestablishment of native species on temporary and permanent rights-of-way would occur naturally from seed stock and that planting programs would not be necessary or cost effective. We have seen successful wetland restoration from native seed stock, and we concur that Islander East's and Algonquin's plan to allow natural revegetation is a reasonable approach to achieve revegetation of forested wetlands given that the original surface elevation is restored and tree stump-root complexes are preserved. However, in the event a permitting agency identifies the need for a site-specific forested wetlands revegetation plan, Islander East stated it would develop such a plan and consult with regional agencies for pertinent recommendations. Therefore, we recommend that:

- **Islander East should file with the Secretary any wetland revegetation plans that are developed with FWS, COE, and appropriate state agencies for the project, prior to construction.**

The wetland crossing procedures in the ESC Plan would be implemented in all jurisdictional wetlands, unless the wetland is used for agriculture, and agricultural procedures apply. Construction through wetlands would also comply at a minimum with individual Section 404 permit conditions as administered by the COE for all discharges of dredged or fill material or mechanical land clearing and excavation in waters of the United States including wetlands, streams, and navigable waterways.

At present, the post-construction vegetation maintenance guidelines set forth in the FERC Procedures and adopted by Algonquin and Islander East in the ESC Plan, are not only conducive for the quick reestablishment of a scrub-shrub wetland cover type, but also allow for the redevelopment of a forested component along the edge of the disturbed right-of-way. During maintenance of the right-of-way, the ESC Plan indicates that mowing activities in forested wetlands would be limited to a corridor up to 10 feet wide centered over the pipeline. However, trees within 15 feet of the new pipeline that are greater than 15 feet in height may be selectively cut and removed from the permanent right-of-way.

When wetland impacts are proposed, the COE would require that all appropriate and practicable action be taken to avoid or mitigate those impacts. Islander East and Algonquin would obtain state and Federal permits regarding construction in wetlands and would comply with any mitigation measures required by the permits. We believe that Islander East and Algonquin have minimized wetland impacts through the proposed route, and the use of its ESC Plan and other proposed impact mitigation measures would avoid or minimize potential impacts on wetlands.

Site-Specific Wetland Impacts

Several commentators requested that Islander East evaluate impacts to specific wetlands, including salt marsh, tidal wetlands, and wetlands associated with the Peconic River, Carmen's River, and Branford Land Trust Property:

Only one tidal wetland will be crossed by the Islander East Pipeline in New York. Islander East has stated that this wetland is unvegetated and is considered open water that does not meet the Federal regulatory definition of a wetland. Islander East stated that it would obtain a NYSDEC Tidal Wetland Permit before construction begins across this area. Salt marsh habitat is found adjacent to the pipeline corridor in Connecticut and would not be directly impacted by construction or operation.

Within Brookhaven State Park, the Islander East Pipeline would cross the headwaters of the Peconic River and associated wetlands at MP 38.3 and MP 38.4. Less than 0.1 acre of these wetlands would be affected by construction and 0.01 acre would be affected by operation of the project. Within the Southhaven County Park, the pipeline would cross the Carmen's River and associated wetland at MP 43.1. About 1.8 acres of this wetland would be affected by construction and 0.2 acre would be affected by operation of the project.

Several wetlands will be crossed within the Branford Land Trust Property. Islander East is attempting to work with the Branford Land Trust and other land trusts crossed by the project to identify and address specific concerns prior to construction (see section 3.8.3.2).

Construction of the Islander East and Algonquin project facilities would temporarily disturb about 32.5 acres and through routine vegetation maintenance, maintain about 3.9 acres of wetland as an emergent plant community (see table 3.7.1-1). Of these wetlands, about 30.6 acres in Connecticut and about 1.9 acres in New York would be affected.

About 26.3 acres (81 percent) of impacted wetlands are classified as forested wetlands or other wetlands with a major forest component (i.e., PFO, PFO/PSS, PFO/PEM, PEM/PFO). Forested wetlands would be crossed adjacent to existing rights-of-way, where actual forest clearing would be less than 75 feet because of the partial use for construction of 25 to 50 feet of the previously cleared right-of-way for construction. An estimated 3.5 acres of PFO would be permanently converted to PEM (see table 3.7.1-1) due to the maintenance of a 10-foot-wide right-of-way in the herbaceous state. The remaining 6.3 acres (19 percent) of the wetlands affected by construction are classified as non-forested wetlands and include emergent wetlands (3.2 acres), scrub-shrub wetlands (0.1 acre), or mixed (3.0 acres). Saltmarsh is located adjacent to the proposed construction corridor, but would not be affected by construction of the Islander East Pipeline Project.

Islander East and Algonquin have stated in the ESC Plan that wetlands would be seeded with annual ryegrass at a rate of 40 pounds per acre or with a seed mixture developed in consultation with the COE, NRCS, and state agencies. We agree that this measure would be acceptable in the absence of a detailed revegetation plan or until the appropriate seeding season. Seeding with a fast-growing species is useful in mitigating against erosion until the native species become reestablished. As also stated in the ESC Plan, Islander East and Algonquin would monitor wetlands for 3 to 5 years post construction or until successful revegetation. Successful revegetation would be considered when the native herbaceous and/or woody cover is at least 80 percent of the total cover and native species diversity is at least 50 percent of the diversity originally found in the wetland. If revegetation is not successful at the end of 3 years, Islander East would develop and implement (in consultation with a professional wetland ecologist) a remedial revegetation plan to actively revegetate the wetland with native vegetation. Therefore, we recommend that:

- **Islander East and Algonquin should file with the Secretary an annual summary monitoring report documenting the revegetation status of each wetland affected by construction.**

Post-construction reports should be filed for the first three years or until each wetland is successfully revegetated. The reports should include an inventory of exotic nuisance plant species present on the construction right-of-way. For any wetlands that have not been restored by the third growing season, Islander East and Algonquin should file with the Secretary a site-specific plan to restore these problem areas for review and written approval by the Director of OEP.

We believe that the implementation of the above recommendations and use of Islander East and Algonquin's ESC Plan, would minimize impact on wetlands crossed by the Islander East Pipeline Project.

Aboveground Facilities

Based on review of NWI and TWI maps and field surveys, no wetlands are located within any of the areas to be disturbed by the aboveground facilities proposed by Algonquin and Islander East.

3.8 LAND USE, RECREATION, AND VISUAL RESOURCES

3.8.1 Land Use

3.8.1.1 Existing Environment

The Islander East Pipeline Project would involve construction of a total of 50.7 miles of pipeline, including 21.5 miles in New Haven County, Connecticut, and 29.2 miles (including the 5.6-mile Calverton Lateral) in Suffolk County, New York. Of this total, about 22.6 miles of pipeline would be constructed on the sea floor of the Sound. In addition, aboveground facilities would include a new compressor station in Cheshire, New Haven County, Connecticut, three meter stations, and five mainline valves. The project also includes excavation, investigation of anomalies, and possible replacement of existing pipeline in two areas in New Haven County. In addition, about 27.4 miles of existing pipeline in New Haven County would be tested in-place to verify it can sustain gas transmission at a higher pressure, requiring minimal ground disturbance or construction work.

Islander East and Algonquin would use existing roads along the route for construction access, and proposes to construct new and improve existing roads for temporary and permanent use. Islander East has identified a total of 20 access roads, including 11 roads for temporary use during construction and 9 roads for use as permanent access to the compressor station, meter stations, and mainline valves. These roads would be in commercial/industrial areas, existing utility rights-of-ways, agricultural lands, and minor amounts of forested areas (see table 3.8.1-3). In addition, Islander East would temporarily use two areas for pipe storage and contractor staging. Specifically, Islander East would use about 10.1 acres of a 17.9-acre parcel known as the Toelles Road Pipe Yard, on open land previously used as a sand borrow pit and currently zoned for industrial use in Wallingford, Connecticut. Islander East also would use the Gateway Terminal in New Haven, Connecticut to stage construction for the offshore portion of the project. This facility is an existing commercial port used by marine vessels.

The principal land use category that would be crossed by the pipeline is open water (44.6 percent) associated with the Sound crossing. Of the remaining 28.1 miles on land, the predominant land use is forest (25.4 percent), followed by open land (18.3 percent), agricultural land (5.7 percent), commercial/industrial areas (3.2 percent), and residential areas (2.8 percent). About 23.4 miles (83 percent) of the 28.1 miles of pipeline on land would be constructed adjacent to or overlapping with existing rights-of-way. Table 3.8.1-1 summarizes the land uses and open water crossed by the proposed pipeline.

The Cheshire Compressor Station would be located in a forested and agricultural area, and the three meter stations would occupy lands that are currently commercial/industrial, forested, and open, respectively. The five mainline valves would be constructed within the permanent right-of-

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way, or within the compressor and meter station sites. Table 3.8.1-2 identifies land uses affected by the aboveground facilities.

The open water category of land use consists of the 22.6-mile Sound crossing. Affected forest land consists mainly of non-agricultural wooded uplands and wetlands dominated by mixed hardwood communities in Connecticut, and pitch pine and oak scrub communities in New York. Open lands, defined as non-agricultural open fields and scrub-shrub uplands and wetlands include pastures, fallow croplands, and cleared areas such as existing rights-of-way. No lands managed under the USDA, Farm Service Agency Conservation Reserve Program (CRP) would be crossed by the project.

TABLE 3.8.1-1
Land Uses Crossed by the Existing and Proposed Pipeline (in miles)

Facility/State	Open Water ^{a/}		Forested ^{b/}		Open ^{c/}		Agricultural ^{d/}		Com./Ind. ^{e/}		Residential ^{f/}		Total	
	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)	(mi)	(%)
ALGONQUIN FACILITIES														
Anomaly Investigations														
Connecticut	0.0	0.0	0.0	0.0	0.1	100	0.0	0.0	0.0	0.0	0.0	0.0	0.1	100.0
AGT Pipelines Retest ^{g/}														
Connecticut	0.0	0.0	0.0	0.0	0.1	66.7	0.0	0.0	0.0	0.0	0.1	33.3	0.2	100.0
TOTAL	0.0	0.0	0.0	0.0	0.2	66.7	0.0	0.0	0.0	0.0	0.1	33.3	0.3	100.0
ISLANDER EAST FACILITIES														
Islander East Pipeline														
Connecticut	11.0	51.9	2.9	13.6	3.2	14.9	1.4	6.4	1.5	7.1	1.3	6.0	21.2	100.0
New York	11.6	49.2	7.7	32.7	3.5	14.8	0.6	2.7	0.1	0.5	0.0	0.0	23.6	100.0
Subtotal	22.6	50.5	10.6	23.7	6.7	14.8	2.0	4.5	1.6	3.6	1.3	2.9	44.8	100.0
Calverton Lateral														
New York	0.0	0.0	2.3	40.6	2.4	43.7	0.9	15.6	0.0	0.0	0.0	0.0	5.6	100.0
TOTAL	22.6	44.9	12.9	25.6	9.1	18.0	2.9	5.7	1.6	3.2	1.3	2.5	50.4	100.0
Connecticut	11.0	51.2	2.9	13.5	3.4	15.8	1.4	6.5	1.5	7.0	1.4	6.5	21.5	100.0
New York	11.6	39.7	10.0	34.2	5.9	20.2	1.5	5.1	0.1	0.3	0.0	0.0	29.2	100.0
GRAND TOTAL	22.6	44.6	12.9	25.4	9.3	18.3	2.9	5.7	1.6	3.2	1.4	2.8	50.7	100.0

a/ Open Water – surface water crossings greater than 100 feet.

b/ Forested – non-agricultural wooded uplands and forested wetlands.

c/ Open – non-agricultural open and scrub-shrub fields and emergent wetlands.

d/ Agricultural – actively cultivated uplands, farmed wetlands, hay fields, tree farms, orchards, and nurseries. Also includes fence lines, windbreaks, and shelter belts within agricultural areas.

e/ Com./Ind. – existing commercial and industrial developments including retail stores, office buildings, manufacturing plants, utility stations, and associated with rock quarries, and shipping terminals. Also includes existing access roads, railroad crossings, and road crossings greater than 50 feet wide.

f/ Residential – existing rural, suburban, and urban residential developments.

g/ Includes only those areas where ground disturbance work is required.

Note: Land uses were assigned based on the predominant use across the proposed right-of-way. Some calculation differences may occur due to rounding.

In New Haven County, Connecticut, affected agricultural lands include cultivated corn and forage crops for dairy cattle feed, as well as nursery and greenhouse stocks. In Suffolk County, New York, agricultural cultivated areas are primarily used to grow potatoes, with smaller amounts of vegetables, orchard products, and corn and oats for feed grain. The Calverton Lateral would cross one tree farm used to grow commercial nursery stock between MPs CA 2.4 and 2.7. Islander East is consulting with landowners to identify other specialty crops along the route.

TABLE 3.8.1-2
Land Uses at New Aboveground Facilities ^{a/}

Facility	MP	County, State	Land Use	Acres to be Affected	
				Construction	Operation
ALGONQUIN FACILITIES					
Cheshire Compressor Station	0.0	New Haven, CT	Agricultural Forested	6.0 and 4.0 ^{b/}	3.2 and 4.0 ^{b/}
Launcher Removal	0.6	New Haven, CT	Com./Ind. ^{c/}	0.5	0.0
ISLANDER EAST FACILITIES					
North Haven Meter Station	0.0	New Haven, CT	Com./Ind. ^{c/}	0.8	0.8
Brookhaven Meter Station	44.8	Suffolk, NY	Forested	2.4	1.2
AES Calverton Meter Station	5.6	Suffolk, NY	Open	1.8	0.3
GRAND TOTAL				15.5	9.5
Forested				6.4	5.2
Agricultural				6.0	3.2
Open				1.8	0.3
Commercial/Industrial				1.3	0.8

^{a/} Land use requirements for mainline valves are not included in this table because they would be located within compressor or meter station properties or the permanent right-of-way.

^{b/} Does not include acreage associated with the compressor station access road; access road acreages are included in table 3.8.1-3.

^{c/} Com./Ind. = Commercial/Industrial

Commercial/industrial lands include existing or planned commercial and industrial developments, such as retail stores, office buildings, manufacturing plants, utility stations, and land associated with rock quarries and shipping terminals, as well as road and railroad crossings greater than 50 feet wide. See section 3.8.2 for more detail regarding commercial/industrial areas crossed by the project.

Residential lands crossed include existing and planned rural and suburban residential developments. See section 3.8.2 for more details regarding residential areas crossed by the project.

3.8.1.2 Environmental Consequences

Temporary and permanent land use impacts would generally result from the clearing of land for installation of the pipeline and aboveground facilities, construction across the Sound, and the operation and maintenance of the pipeline right-of-way and aboveground facilities. Table 3.8.1-3 presents the land use acreage impacts associated with construction and operation of the pipeline, aboveground facilities, and access roads.

Construction of the Islander East pipelines and aboveground facilities would disturb about 536 acres, including 513 acres for workspace associated with pipeline construction, anomaly repair, and testing; 15.5 acres for construction of aboveground facilities, and 7 acres for access roads. See table 3.8.1-3 for a detailed breakdown of these totals by project component.

Algonquin would purchase a 61-acre site for the Cheshire Compressor Station, of which 10 acres (6 acres of agricultural and 4 acres of forested land) would be disturbed during construction. Following construction, 7.2 acres (3.2 acres of the agricultural land and 4 acres of forest) would be permanently converted to industrial use associated with compressor station operations. The remainder of land at this site would remain essentially in its present state and be used as a forested visual and noise buffer to surrounding uses.

3.0 ENVIRONMENTAL ANALYSIS

TABLE 3.8.1-3

Acres Affected by Construction and Operation

	Open Water ^{a/}		Forested ^{b/}		Open ^{c/}		Agricultural ^{d/}		Com./Ind. ^{e/}		Residential ^{f/}		Total	
	Con. ^{g/}	Op. ^{h/}	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.	Con.	Op.
ALGONQUIN FACILITIES														
Connecticut														
Work Area ^{i/}	0.0	0.0	0.3	0.1	1.4	0.9	0.0	0.0	0.0	0.0	1.0	0.6	2.7	1.6
Access Roads	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	0.6	0.1	0.0	0.0	2.1	1.6
Aboveground Facilities	0.0	0.0	4.0	4.0	0.0	0.0	6.0	3.2	0.5	0.0	0.0	0.0	10.5	7.2
TOTAL	0.0	0.0	4.3	4.1	1.4	0.9	7.5	4.7	1.1	0.1	1.0	0.6	15.3	10.4
ISLANDER EAST FACILITIES														
Islander East Pipeline														
Connecticut														
Work Area ^{i/}	106.8	13.3	32.1	16.4	30.6	18.7	16.3	8.3	21.1	10.2	13.3	7.6	220.2	74.5
Access Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.3	1.0	0.0	0.0	3.3	1.0
Aboveground Facilities	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.8	0.0	0.0	0.8	0.8
Subtotal	106.8	13.3	32.1	16.4	30.6	18.7	16.3	8.3	25.2	12.0	13.3	7.6	224.3	76.3
New York														
Work Area ^{i/}	114.6	14.1	79.0	43.9	35.0	22.9	7.0	3.9	1.8	0.8	0.0	0.0	237.4	85.6
Access Roads	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	1.2	1.2	0.0	0.0	1.7	1.7
Aboveground Facilities	0.0	0.0	2.4	1.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.4	1.2
Subtotal	114.6	14.1	81.9	45.6	35.0	22.9	7.0	3.9	3.0	2.0	0.0	0.0	241.5	88.5
Calverton Lateral														
New York														
Work Area ^{i/}	0.0	0.0	21.0	13.5	22.2	14.6	9.7	5.2	0.0	0.0	0.0	0.0	53.0	33.4
Access Roads	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0
Aboveground Facilities	0.0	0.0	0.0	0.0	1.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	1.8	0.3
Subtotal	0.0	0.0	21.0	13.5	24.0	14.9	9.7	5.2	0.1	0.0	0.0	0.0	54.9	33.7
TOTAL ISLANDER EAST														
Work Area ^{i/}	221.4	27.4	132.1	73.8	87.8	56.2	33.0	17.4	22.9	11.0	13.3	7.6	510.6	193.5
Access Roads	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	4.6	2.2	0.0	0.0	5.1	2.7
Aboveground Facilities	0.0	0.0	2.4	1.2	1.8	0.3	0.0	0.0	0.8	0.8	0.0	0.0	5.0	2.3
Total	221.4	27.4	135.0	75.5	89.6	56.5	33.0	17.4	28.3	14.0	13.3	7.6	520.7	198.5
TOTAL BY STATE														
Connecticut														
Work Area ^{i/}	106.8	13.3	32.4	16.5	32.0	19.6	16.3	8.3	21.1	10.2	14.3	8.2	222.9	76.1
Access Roads	0.0	0.0	0.0	0.0	0.0	0.0	1.5	1.5	3.9	1.1	0.0	0.0	5.4	2.6
Aboveground Facilities	0.0	0.0	4.0	4.0	0.0	0.0	6.0	3.2	1.3	0.8	0.0	0.0	11.3	8.0
Subtotal	106.8	13.3	36.4	20.5	32.0	19.6	23.8	13.0	26.3	12.1	14.3	8.2	239.6	86.7
New York														
Work Area ^{i/}	114.6	14.1	100.0	57.4	57.2	37.5	16.7	9.1	1.8	0.8	0.0	0.0	290.4	119.0
Access Roads	0.0	0.0	0.5	0.5	0.0	0.0	0.0	0.0	1.3	1.2	0.0	0.0	1.8	1.7
Aboveground Facilities	0.0	0.0	2.4	1.2	1.8	0.3	0.0	0.0	0.0	0.0	0.0	0.0	4.2	1.5
Subtotal	114.6	14.1	102.9	59.1	59.0	37.8	16.7	9.1	3.1	2.0	0.0	0.0	296.4	122.2
GRAND TOTAL														
Work Area ^{i/}	221.4	27.4	132.4	73.9	89.2	57.1	33.0	17.4	22.9	11.0	14.3	8.2	513.3	195.1
Access Roads	0.0	0.0	0.5	0.5	0.0	0.0	1.5	1.5	5.2	2.3	0.0	0.0	7.2	4.3
Aboveground Facilities	0.0	0.0	6.4	5.2	1.8	0.3	6.0	3.2	1.3	0.8	0.0	0.0	15.5	9.5
Total	221.4	27.4	139.3	79.6	91.0	57.4	40.5	22.1	29.4	14.1	14.3	8.2	536.0	208.9
a/	Open Water – surface water crossings greater than 100 feet.													
b/	Forested – non-agricultural wooded uplands and forested wetlands.													
c/	Open – non-agricultural open and scrub-shrub fields and emergent wetlands (including existing rights-of-way).													
d/	Agricultural – actively cultivated uplands, farmed wetlands, hay fields, tree farms, orchards, and nurseries. Also includes fence lines, windbreaks, and shelter belts within agricultural areas.													
e/	Com./Ind. – existing commercial and industrial developments including retail stores, office buildings, manufacturing plants, utility stations, and associated with rock quarries, and shipping terminals. Also includes existing access roads, railroad crossings, and road crossings greater than 50 feet wide.													
f/	Residential – existing rural, suburban, and urban residential developments.													
g/	Con. = Construction													
h/	Op. = Operation													
i/	Construction work area includes construction right-of-way and additional temporary workspace areas. Operation work area is the permanent right-of-way, which was assumed to be generally 50 feet wide. Some areas would have less than a 50-foot-wide permanent right-of-way so actual operational area may be less than shown.													

Construction of the North Haven Meter Station would require 0.8 acre of commercial-industrial land, the Brookhaven Meter Station would require 2.4 acres in forest land, and the AES

Calverton Meter Station would require 1.8 acres in an open area. Operation of these areas would require 0.8, 1.2, and 0.3 acres, respectively.

Right-of-Way Easements

An easement would be used to convey both temporary (for construction) and permanent rights-of-way to the pipeline company. The easement gives the company the right to construct, operate, and maintain the pipeline, and establish a permanent right-of-way. In return, the company compensates the landowner for the use of the land. The easement negotiations between the company and the landowner typically specifies compensation for loss of use during construction, loss of non-renewable or other resources, and allowable uses of the right-of-way after construction.

If an easement cannot be negotiated with the landowner and the project has been certificated by the Commission, the company may use the right of eminent domain granted to it under section 7(h) of the NGA and the procedure set forth under the Federal Rules of Civil Procedure (Rule 71A) to obtain the right-of-way and extra workspace areas. The company would still be required to compensate the landowner for the right-of-way, and for any damages incurred during construction. However, the level of compensation would be determined by a court according to state law once Islander East is issued a certificate. In either case, Islander East would compensate landowners for the use of the land. Permits and approvals would be obtained, as needed, for pipeline crossings of roads, railroads, and waterbodies. Algonquin would purchase land for the compressor station and would conduct its other proposed activities on land previously acquired in fee or by easement.

Open Water Impacts and Mitigation Measures

Pipeline construction across the Sound would result in short-term impacts on water-related uses. Impacts would be limited to the duration of construction and include potential disruption of commercial fishing, vessel traffic, and navigation buoys. Islander East proposes to reduce these impacts primarily by constructing the pipeline during the winter when commercial and recreational fishing, recreational boating and boat tour traffic and use is reduced. In addition, Islander East expects pipe laying to proceed at about 3,500 to 4,000 feet per day. The pipe would be buried for at least half its diameter in off-shore areas, thereby minimizing the risk associated with catching on underwater obstructions such as fishing gear. During operation, no impacts on fishing operations, ship movement, or boating are expected.

Commercial Fishing

Commercial fishing, including shellfishing, is an important industry in this region. The Sound pipeline segment would cross seven shellfish lease areas (included in table 3.8.3-1). However, two of these lease areas have been unlisted by the State of Connecticut because they are unproductive shellfish beds and therefore the pipeline crossing would not significantly affect shellfishing in these areas. Islander East would avoid four of these areas by using the HDD crossing methods at the Connecticut shore. One shellfish lease area (lease L-555 at MP 12.6, leased by Nicholas J. Crismale) would be directly disturbed by trench excavation for 2,216 linear feet. Potential impacts of pipeline construction on shellfish areas are described in section 3.4.1.2.

Islander East identified 25 shellfish lease areas that would not be traversed by the pipeline, but are located within 0.25 mile of the pipeline route. To define potential areas and quantities of project-induced sediment resuspension, transport, and deposition, and to assess the significance of impacts on commercial fishing and shellfish lease areas, Islander East proposes to conduct sediment deposition modeling using data it is currently collecting during site-specific field studies in the Sound, as described in section 3.3.3.

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Islander East consulted with pertinent commercial fishing resource management and regulatory agencies to identify measures to avoid or minimize impacts on commercial fishing. Specifically, Islander East consulted with representatives of the State of Connecticut Department of Agriculture, Division of Aquaculture, Connecticut and Long Island Oystermen's Association, and Long Island Lobstermen's Association. Based on these consultations, Islander East proposes the following mitigation procedures:

- Prior to construction, notify impacted groups of the exact location of the proposed pipeline prior to construction using Loran coordinates;
- Prior to construction, advise the Lobstermen's Associations of the size of the lay barge and support vessels;
- Prior to construction, notify the Lobstermen's Associations of the construction schedule to facilitate removal of fixed fishing gear, including lobster pots;
- Construct the offshore pipeline during winter months; and
- Enlist lobstermen to act as spotters during construction to identify and move fishing gear within the construction area.

Additionally, Islander East proposes to consult further with the representatives of impacted commercial fishery groups to:

- Coordinate and communicate with impacted groups to identify the optimal construction period to avoid or minimize potential impacts on commercial fishery operations; and
- Evaluate potential construction methods to minimize disruption to shellfish harvesting.

We agree that these proposed notification and coordination measures would minimize potential impacts to commercial fishery operations.

The Town of Branford raised a concern that the proposed Islander East Pipeline Project crossing of the Sound could result in irreversible impacts to active, leased shellfish beds, and estimates that the annual cash flow value potentially affected is \$8.7 million. As stated in section 3.4.1.2, we believe that Islander East's use of the proposed HDD methods, the ESC Plan, and other proposed mitigation measures would avoid or minimize potential impacts on known shellfish beds. However, Islander East is responsible, both onshore and offshore for any damages caused by construction activities. Islander East could be taken to court for damages, including loss of productivity to shellfish beds. If evidence is given that proves that Islander East is responsible for causing the damage, the courts would determine the proper compensation.

The CTDEP expressed concerns that project construction could conflict with commercial lobster industry activities. It notes that, although many licensed commercial lobstermen have already been contacted, it would be important to reexamine the list of potentially affected fishers if the project is not implemented in the near future. Therefore, we recommend that:

- **Islander East should consult with the CTDEP, Marine Fisheries Division to update its list of potentially affected lobster/fishermen, and provide construction notifications and information to all affected lobster/fishermen, before construction.**

Commercial/Recreational Vessel Navigation

Minor short-term impacts to commercial and recreational vessel traffic on the Sound would result during construction, when construction barges, boats, and tender vessels would be working in the Sound. Potential impacts include increased potential for vessel collisions, harbor congestion, and disturbance from noise or vessel wakes. Islander East would coordinate with the U.S. Coast Guard and comply with navigation regulations and precautions throughout the construction period to minimize traffic and safety impacts. Islander East would also ensure that a Notice to Mariners was issued with installation details, and ongoing communication would be maintained with vessels in the vicinity of the project.

No significant impact on commercial shipping is expected during construction during normal conditions, as construction would move relatively quickly and sufficient clearance exists in shipping lanes to allow movement of commercial vessels around the construction areas. Impacts to recreational vessel traffic would be minimal because the planned construction of the project during the winter season would coincide with the least active season for recreational boating (including tour boats and fishing charters). In addition, Islander East would work with the U.S. Coast Guard to avoid or minimize impacts on several navigational buoys that are located along and near the pipeline route across the Sound. No significant impacts regarding these issues would result from operation of the pipeline because the pipeline would be buried up to half of its diameter in the sea floor.

It is possible that construction of the Sound portion of the pipeline could encounter severe winter storms which could affect the navigation and harbor safety of construction vessels and other vessels unrelated to construction. In preparation for potential severe winter storms during construction, a contingency plan should be developed. Therefore, we recommend that:

- **Islander East should file with the Secretary for review and written approval by the Director of OEP prior to construction a revised ESC Plan that incorporates storm contingency and harbor of refuge plans during construction of its offshore facilities.**

Forest Land

Forest clearing during construction would convert forested areas to cleared, open land, representing a long-term impact. Although forest cleared within the temporary construction right-of-way would be allowed to revegetate, reestablishment of preconstruction conditions could take several to many years depending on the type of forest cleared. The pipeline would be located adjacent to existing rights-of-way for 83 percent of its length (about 23.4 miles) on land, and would overlap these existing cleared areas by 5 to 50 feet, thereby minimizing forest clearing. See section 3.5.2 for more details on impacts and mitigation in forested areas.

Agricultural Land

Short-term impacts to agricultural areas could include the loss of standing crops within the construction work areas and disruption of farm operations in the vicinity of construction for one growing season during the year of construction. Potential long-term impacts include the loss of future crop productivity as a result of soil disturbance. Approximately 3.2 acres of agricultural area within the Cheshire Compressor Station property would be permanently converted to uses associated with the industrial station use. Of this, 0.2 acre is prime farmland soil.

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Islander East would compensate landowners for crop loss and documented damages, and monitor crop growth for 2 years to determine the need for corrective measures regarding drainage and/or irrigation systems, or other additional restoration measures. See section 3.2.2 for more details on impacts and mitigation for actively cultivated soils.

We received comments from the landowners at MP 5.8 (Rose family) in North Branford, Connecticut, and they are concerned that the project would require clearing maple trees that the family uses to make maple syrup, and fruit trees. Islander East stated it believes that these trees could be saved by a combination of techniques. After crossing Cedar Lake Road, the separation between the two pipelines and associated workspace could be reduced to limit the impact on the trees. This reduction should allow the contractor to "work around" the mature trees and possibly avoid the small apple and peach trees. However, Islander East stated that it might be necessary to temporarily relocate the small apple and peach trees, which are approximately 2 inches in diameter and 6 to 8 feet tall, during construction. Due to the landowner's wishes, Islander East was not permitted to access areas outside of the existing Algonquin permanent right-of-way on this property and therefore, Islander East could not develop a dimensioned site plan for avoidance of these trees. Therefore, we recommend that:

- **Islander East should complete and file with the Secretary for review and written approval by the Director of OEP, prior to construction a site-specific construction plan for the Rose family property at MP 5.8 in North Branford, Connecticut (Tract NHV-133) that includes minimizing clearing impacts on the family fruit trees.**

Open Land

Effects of the project on open land use would be minor and short term. These undeveloped areas and existing rights-of-way with herbaceous and shrub communities would become reestablished, and the previous use would be allowed to continue within the temporary and permanent rights-of-way, after construction.

Following construction, all open land used for the temporary construction right-of-way and extra work areas would revert entirely to prior use, and the permanent upland right-of-way would be maintained in a generally grassy condition.

Although most land uses would be allowed to continue within the permanent right-of-way, certain types of uses, such as construction of permanent structures (e.g., house additions, garages, barns, pools) would be prohibited. In addition, nursery tree farms and orchards would be allowed to establish trees in the 50-foot-wide permanent right-of-way, except within a 10-foot-wide herbaceous strip centered over the pipeline and no trees greater than 15 feet in height would be allowed within a 30-foot-wide strip centered over the pipeline. Specific impacts to residential and commercial/industrial areas are discussed in section 3.8.2.2.

3.8.2 Residential and Commercial/Industrial Areas

3.8.2.1 Existing Environment

A total of about 1.4 miles and 14.3 acres of land associated with residences would be affected during construction of the project. During operation of the pipeline, 8.2 acres of residential land would be used for new permanent easements. Islander East identified 39 existing residences within 50 feet of the construction work areas, primarily in Connecticut (see table 3.8.2-1). Approximately

50 feet of the construction work areas, primarily in Connecticut (see table 3.8.2-1). Approximately 26 of these are located within 25 feet of the construction work areas. There are no residences located within 50 feet of Algonquin's proposed construction work areas for the pipeline re-test and anomaly investigations.

One planned residential development has been identified along the project. The Calverton Lateral would cross the Meadowcrest IV at Settlers Landing subdivision from MP CA 2.0 to MP CA 2.35, (property is currently known as the Mays Farm property on Wading River - Manorville Road in the Town of Riverhead, New York). The final plat map for this approved development has been recorded in the Suffolk County Clerk's Office, and the subdivision features residential plots averaging 0.7 acre in size. As it traverses this subdivision, the lateral would be routed generally along the sub-divided property boundaries between approximately 12 future residential properties. No other planned residential areas have been identified within 0.25 mile of the project.

A total of about 1.6 miles and 29.4 acres of commercial/industrial lands would be affected during construction of the project. The construction right-of-way would overlap with existing rights-of-way, between 0 and 40 feet in these areas, depending on the location. During operation, 14.1 acres of commercial/industrial land would be used for new permanent easements or meter station use. The permanent right-of-way would overlap with existing rights-of-way between 0 and 30 feet in these areas. Islander East identified 15 existing commercial/industrial buildings within 50 feet of the construction work areas (see table 3.8.2-2). Eleven of these are within 25 feet of the construction work areas, including two buildings within the proposed work area. In addition, one planned commercial development has been identified within 0.25 mile of the pipeline route between MP 41.3 and 42.0.

3.8.2.2 Environmental Consequences

In residential areas, the two primary impacts associated with construction and operation of a pipeline are disturbance during construction and the limitation on development of future buildings or structures on the permanent right-of-way. Temporary construction impacts could include inconvenience caused by noise and dust generated by construction equipment, personnel, and trenching of roads and driveways; ground disturbance of lawns; removal of trees, landscaped shrubs, or other vegetative screening between residences and/or adjacent rights-of-way; potential damage to existing septic systems or wells; and removal of structures such as sheds or trailers, from the right-of-way. In addition, the presence of open trenches can pose a safety hazard to residents. Permanent impacts would result from the prohibition of future development within the 50-foot-wide permanent right-of-way, where structures (e.g., house additions, garages, barns, pools) and large, deep-rooted landscaping would be prohibited. However, Islander East states that it would allow fences, driveways, roads, parking lots, and shrubs less than 4 feet in height spaced more than 10 feet from the pipeline to be placed on the permanent right-of-way.

Impacts to commercial/industrial land could include temporary disruptions, inconvenience, and loss of potential revenues due to construction activities. In particular, these impacts could result from construction noise during business hours, increased dust and movement of soil particles in air, slow-moving traffic resulting from moving construction equipment and materials and/or road or lane closures during installation of the pipeline across roads. In addition, construction equipment may track soil or mud onto roadways, and heavy equipment may damage roadways.

3.0 ENVIRONMENTAL ANALYSIS

TABLE 3.8.2-1
Residences Within 50 Feet of the Construction Work Area

Facility/State	MP	Approximate Distance from Construction Work Area (feet) ^{g/}	Approximate Distance from Pipeline Centerline (feet)	Direction from Pipeline Centerline
ALGONQUIN FACILITIES				
Anomaly Investigations				
Connecticut	N/A	N/A	N/A	N/A
AGT Pipelines Retest Connecticut	N/A	N/A	N/A	N/A
ISLANDER EAST FACILITIES				
Islander East Pipeline				
Connecticut	0.1	15	35	West
	0.1	15	70	East
	0.1	30	55	East
	0.2	15	40	West
	0.2	10	85	East
	0.2	50	75	West
	0.2	15	90	East
	0.3	15	40	East
	0.9	15	50	West
	0.9	10	35	East
	0.9	10	110	West
	3.7	10	35	East
	3.7	10	60	West
	3.7	15	40	East
	3.8	25	75	West
	3.9	10	35	East
	4.2	25	75	West
	4.2	45	95	East
	4.2	30	105	East
	4.3	11	61	East
	4.4	10	40	West
	5.1	25	50	East
	5.1	30	80	West
	5.1	25	70	East
	5.2	5	25	West
	5.2	15	65	West
	5.3	14	65	West
	5.4	30	80	West
	5.4	47	97	West
	6.4	9	44	West
	6.4	14	49	West
	6.7	30	55	East
	9.0	9	34	East
New York	37.2	39	89	East
	37.2	29	79	East
	37.3	44	94	East
	37.9	33	83	East
	38.1	0	50	East
	38.2	49	99	East
Calverton Lateral				
New York	N/A	N/A	N/A	N/A

^{g/} Includes construction right-of-way and additional temporary workspaces.
N/A Not applicable; no residences are located within 50 feet.

TABLE 3.8.2-2
Commercial/Industrial Buildings Within 50 Feet of the Construction Work Area

Facility/State	MP	Approximate Distance from Construction Work Area (feet) ^{a/}	Approximate Distance from Pipeline Centerline (feet)	Direction from Pipeline Centerline
ALGONQUIN FACILITIES				
Connecticut	N/A	N/A	N/A	N/A
ISLANDER EAST FACILITIES				
Islander East Pipeline				
Connecticut	5.5	9	35	East
	5.7	44	115	West
	6.1	13	58	East
	6.2	0 ^{b/}	38	West
	6.8	48	73	East
	7.3	0 ^{b/}	75	East
	7.8	35	60	West
	7.9	12	27	East
	8.0	10	22	East
	8.0	11	22	East
	8.0	10	65	East
	10.1	17	25	East
New York	33.6	10	40	West
Calverton Lateral				
New York	2.3	10	35	North
	2.4	41	65	North

a/ Includes construction right-of-way and additional temporary workspaces.
b/ Occurs within the construction work area.
N/A Not applicable; no commercial/industrial buildings are located within 50 feet.

The proposed Cheshire Compressor Station would generate increased levels of noise on a long-term, permanent basis. A detailed assessment of the existing noise environment and noise impacts and mitigation measures associated with the compressor station is provided in section 3.11.2. Based on Algonquin's plans to leave the forested buffer in place around the majority of the compressor station property, and the nature of the existing land uses in the vicinity of the property, we believe that this compressor station has been appropriately sited.

To address and reduce construction-related impacts to residential and commercial areas, Islander East proposes to:

- Avoid removal of trees and landscaping unless necessary to construct the pipeline or for the safe operation of equipment;
- For all residences within 50 feet of the construction work area, develop site-specific residential construction plans identifying mitigation measures Islander East would implement to promote safe and efficient installation with minimal residential impact;
- For all residences within 50 feet of the construction work area, restore all lawns and landscaping within the construction work area within 10 days after backfilling the trench;

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- Compensate the landowner for damages to landscaping and other property as necessary, in a fair and reasonable manner;
- Install and maintain construction fencing at the edge of the construction work area in residential areas for a distance of 100 feet on either side of the residence during the open trench phase to ensure that construction equipment and materials remain in the work area;
- Control fugitive dust by applying dust suppressants such as water or calcium chloride as needed to dry, exposed soils on the right-of-way or to public/private roads;
- Coordinate any required road closures with nearby businesses and local law enforcement agencies, limit road closures to 72 hours or less, and attempt to complete pipeline installation across closed roads within 24 hours, if possible;
- Establish a temporary bridge or by-pass on small roads and driveways where requested by landowners/local authorities to facilitate traffic flow during open trench phase;
- Remove excess mud and soil tracked onto roadways as soon as practicable;
- Prevent damage to roads from tracked vehicles by placing rubber mats, tires, and/or plywood sheet under equipment while on roads; and
- Coordinate with appropriate transportation authorities regarding the need for road repairs following construction.

We believe that Islander East's proposed measures to reduce impacts are adequate to address the major impact issues typically associated with construction in residential areas. However, due to the high level of sensitivity of residential areas and the potential for daily construction and construction-related activities to create an inconvenience or nuisance in these areas, specific landowner issues arise often which are difficult to anticipate during preconstruction planning. Further, these impacts can often be easily resolved if lines of communication are open between the landowners and the pipeline company, and the company establishes a procedure for receiving and addressing landowner complaints. Therefore, we recommend that:

- **Islander East and Algonquin should develop and implement an environmental complaint resolution procedure. The procedure should provide landowners with clear and simple directions for identifying and resolving their environmental mitigation problems/concerns during construction of the project and restoration of the right-of-way, prior to construction. Islander East and Algonquin should mail the complaint procedures to each landowner whose property would be crossed by the project. In a letter to affected landowners, Islander East and Algonquin should:**
 - a. **provide a local contact that the landowner should call first with their concerns, the letter should indicate how soon a landowner should expect a response;**
 - b. **instruct the landowner that if they are not satisfied with the response to call Islander East and Algonquin's Hotline, the letter should indicate how soon a landowner should expect a response; and**
 - c. **instruct the landowner that if they are still not satisfied with the response from Islander East and Algonquin's Hotline, they should contact the Commission's Enforcement Hotline at (877) 303-4340.**

In addition, Islander East and Algonquin should include in weekly/bi-weekly status reports a copy of a table that contains the following information for each problem/concern:

- the date of the call;
- the identification number from the certified alignment sheets of the affected property;
- the description of the concern/problem; and
- an explanation of how and when the problem was resolved, will be resolved, or why it has not been resolved.

Site-Specific Issues

A new residential subdivision (May's Farm) is planned and currently under construction along the proposed route near MP CA 2.0. Currently, only one residence is within 50 feet of the construction right-of-way along the proposed route near MP CA 1.3. The Islander East proposed route through the area would cross 12 home building sites within the development. Depending on construction timing, residents could be impacted by noise, dust, increased traffic levels, and/or traffic delays.

One commentator near MP 5.5 was concerned that pipeline construction and operation would limit her ability to farm along the permanent right-of-way. Once construction is complete, farming would be allowed on the right-of-way. We believe that strict implementation of Islander East's ESC Plan would mitigate impacts to this agricultural land and that impacts to soil productivity would be short-term and temporary in nature.

One commentator was concerned that pipeline construction may damage his septic field and that Islander East would not be able to repair it to be in compliance with the local codes. Because public sewer is not available in this area, that is not a feasible option. In response to this concern, Islander East stated during the site visit on October 16, 2001 that during construction it would provide a disposal service as necessary to empty the septic tank in the event that the field is inoperable, or provide alternate lodging. In addition, Islander East has offered to employ a qualified engineer to design and install a replacement septic system that they guarantee would meet applicable codes, if pipeline construction damages the existing septic system. However, Islander East has not gained access to the property to determine if rebuilding this septic system to code is feasible. Therefore, we recommend that:

- **Before construction, Islander East should inspect Mr. Nargi's property at MP 8.9 to determine the feasibility of reconstructing this septic system to code on the land available outside of the proposed pipeline right-of-way and file this information with the Secretary.**

Near MP 7.2, the route crosses a narrow piece of land owned by Mr. Ghiroli and used for his landscaping business. Mr. Ghiroli has stated that construction of the pipeline would put him out of business. The property is bounded on the west by a stream and wetlands and on the east by the Branford Steam Railroad and a concrete plant. Islander East proposes to place the pipeline in an erosion control berm on the west side of the property to avoid conflicts with Mr. Ghiroli's operation. We believe the impact to Mr. Ghiroli's property and business can be lessened by reducing the construction right-of-way and using special construction techniques, such as drag line or stovepipe construction. Therefore we recommend that:

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- **Islander East should develop a site specific plan for crossing Mr. Ghiroli's property. The plan should include reduction of the construction right-of-way and specific construction methods. Islander East should also explain how it plans to avoid infringing on Mr. Ghiroli's ability to conduct business during and after construction. This plan should be filed with the Secretary for review and written approval by the Director of OEP prior to construction.**

All-Terrain Vehicle (ATV) Use of Right-Of-Way

We received some comments from residents along the pipeline route who were concerned about increased use of the right-of-way by ATVs as a result of the project. This occurrence has been observed on numerous other utility line projects, where vegetation clearing and grading/restoration from construction activities opens a new or more easily navigable existing corridor. The Islander East right-of-way would still be owned by private landowners (Islander East would purchase easements rather than purchasing the land outright), and therefore, the new right-of-way is not public land. Accordingly, ATV use of the right-of-way without landowner permission may be trespassing (subject to state law). Adverse effects of ATV use on utility rights-of-way include soil and vegetation disturbance increasing the potential for erosion; damage to stream banks and other natural resources; and noise, soil rutting, and general nuisance to landowners. In general, the level of increased ATV use varies depending on the popularity of this sport in the area, the accessibility or number of access points to the right-of-way, and the availability of alternate trails for ATV recreationalists. Because the majority (83 percent) of the project route on land is aligned parallel and adjacent to maintained existing rights-of-way that may already be subject to ATV use, the increase in use by ATVs as a result of the project should be less since it is not creating since new right-of-way. However, based on experience with other projects, we believe that some level of additional ATV use could occur on the new right-of-way. Many pipeline companies attempt to reduce this occurrence through installation of substantial barriers (such as earthen berms, boulders, gates, or fences) at right-of-way access points (e.g., road crossings), and through public outreach/education. To address this issue, we recommend that:

- **Islander East should file with the Secretary a description of how it would control or limit potential all-terrain vehicle use and damage on its right-of-way.**

Future Utility Development

A few commentors were concerned about the new pipeline creating potential for future additional utility development in the same right-of-way and the resulting further encroachment on their properties. Although utility line planners do attempt to align linear projects along existing utility or other transportation corridors to the extent possible, the mere presence of an existing corridor does not by itself determine future utility line routes. Many other factors influence the design of utility projects, including market demand which determines the commodity origination and delivery (customers and potential customers) points; availability of other corridors; and engineering, environmental, landowner, land use, and regulatory constraints. Due to the unpredictability of these factors working together, we believe it is not practicable to predict the outcome or evaluate the potential for future additional utility line development in any one corridor since this would be speculative.

3.8.3 Recreational and Public Interest Areas

3.8.3.1 Existing Environment

The Algonquin and Islander East project facilities would not cross any Native American reservations, national forests, national natural landmarks, nationally designated wild and scenic rivers, wildlife management areas, registered national landmarks, or state forests. The project would, however, cross several recreational and public interest areas, as identified in table 3.8.3-1.

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project

Special Use Area	MP	Distance Crossed	Landowner/ Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
New Haven County, Connecticut					
AGT Pipelines ReTest					
Quinnipiac River State Park	8.9	N/A (work at existing valve site only)	CTDEP, Bureau of Outdoor Recreation	State park along Quinnipiac River corridor	Proposed test manifold location #3 and fill site located at existing tap valve site along existing pipeline ROW in state park, adjacent to Wilbur Cross Parkway. Workspace limited to open areas along existing pipeline and tap facility adjacent to Wilbur Cross Parkway, negligible to no impact to recreation use expected. No special mitigation measures have been proposed.
Islander East Pipeline					
Land Trust	0.3	320 ft	North Haven Land Trust, Inc.	Dedicated open space for preservation	No conservation easements specifically prohibiting pipeline installation or other development have been identified by Islander East for the land trusts. Islander East continues to consult with the North Haven Land Trust, Inc. regarding the most appropriate ways to avoid or minimize impacts on these areas.
All Saints Cemetery	0.5	900 ft	Catholic Cemeteries Association of the Archdiocese of Hartford	Burial grounds	About 450 ft would be adjacent to Velvet Dr. and 450 ft would cross cemetery. Islander East would conduct evaluation for unmarked graves prior to construction.
Land Trust	4.2	1,200 ft	North Branford Land Trust	Dedicated open space for preservation	No conservation easements specifically prohibiting pipeline installation or other development have been identified for the land trusts. Islander East continues to consult with the North Branford Land Trust regarding the most appropriate ways to avoid or minimize impacts on these areas.

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TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Branford Steam Railroad	Adjacent to 6.1-10.1	Adjacent for 4 mi	Tilcon Minerals, Inc.	Transport from Tilcon Quarry (private tap rock quarry 600+ ft. north of MPs 4.8 to 6.0) to barge terminal	Pipeline is routed adjacent to railroad. Islander East intends to work with Tilcon to minimize disruptions and interference with railroad operations. Minimal impact is expected to occur during construction.
Land Trust	8.1 8.5 8.9 9.7	400 ft 35 ft 200 ft 1,050 ft	Branford Land Trust, Inc.	Dedicated open space for preservation	Islander East believes a buried pipeline is not inconsistent with the conservation purpose of this property and would continue to consult Branford Land Trust, Inc. regarding the most appropriate ways to avoid or minimize impacts on these areas, including a trail crossed at MP 10.
Wightwood School	8.9	Adjacent for 250 ft		Private, progressive education facility for pre-kindergarten through 8 th grade.	Pipeline would be constructed about 160 ft from school building, and workspace would be located within 100 ft of building, within 70 ft of school parking area, and adjacent to school yard. Pipeline would be adjacent to, and on the opposite side of, Branford Steam Railroad through this area.
Highway 146	8.9	50 ft	Connecticut Department of Transportation	State-designated scenic road	Pipeline is routed adjacent to Branford Steam Railroad at point of crossing. Construction workspace would be a total of 100 ft. wide on north side of crossing, 50 ft. on south side.
Tilcon Barge Terminal	10.1-10.2	500 ft	Tilcon Minerals, Inc.	Marine shipping terminal	Minimal impact is expected during construction. Islander East intends to work with Tilcon to minimize disruptions.
Long Island Sound					
Thimble Islands	10.3 - ~12.0	(not crossed, but nearby)	Public and Private Ownership	Group of 32 habitable and up to 365 total islands of pink granite off Connecticut shore. Valued for tourism, cultural and historic aspects, waterfowl habitat, and shellfishing areas.	Pipeline would not cross any island, but would be located within 1 mile of several islands, including Andrews, Lewis, and Rogers Islands which are within 60 to 650 ft. Potential impacts would be short-term and consist primarily of suspended sediments and noise/nuisance associated with construction and associated boat traffic. No special mitigation measures have been proposed.

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/ Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Commercial Fishing	10.4	200 ft	Town of Branford	Shellfish Bed Lease Area #168	Direct impacts would be avoided through use of HDD construction methods. Islander East proposes to: - Construct the offshore pipeline during winter months; - Notify impacted groups of the exact location of the pipeline prior to construction using Lorán coordinates; - Coordinate and communicate with impacted groups on timing of construction; - Evaluate potential construction methods to minimize disruption to shellfish harvesting; and - Conduct sediment deposition studies to define potential areas of impact.
	10.4	413 ft	Jurisdiction, Lessee: Edward P. Lang	Shellfish Bed Lease Area #169	
	10.5	519 ft		Shellfish Bed Lease Area #161	
	10.6	890 ft		Shellfish Bed Lease Area #170	
Commercial Fishing	11.9	1,059 ft	State of CT	Shellfish Bed Lease Areas (Unlisted #1) (Unlisted #2)	Beds were unlisted by the state because they are unproductive. Islander East proposes to: - Construct the offshore pipeline during winter months; - Notify impacted groups of the exact location of the proposed pipeline prior to construction using Lorán coordinates; - Coordinate and communicate with impacted groups on timing of construction; - Evaluate potential construction methods to minimize disruption to shellfish harvesting; and - Conduct sediment deposition studies to define potential areas of impact.
	12.1	2,866 ft	Jurisdiction, Lessee: NA		

3.0 ENVIRONMENTAL ANALYSIS

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Commercial Fishing	12.6	2,216 ft	State of CT Jurisdiction, Lessee: Nicholas J. Crimsale	Shellfish Bed Lease Area #L-555	<p>Actively cultivated shellfish bed. Islander East proposes to continue to coordinate with this leaseholder regarding development of construction plans, timing of reconstruction, construction method, and pre-construction preparations, including possibly harvesting clams within construction area before start of construction. In addition, Islander East proposes to:</p> <ul style="list-style-type: none"> - Construct the offshore pipeline during winter months; - Notify impacted groups of the exact location of the proposed pipeline prior to construction using Loran coordinates; - Coordinate and communicate with impacted groups on timing of construction; - Evaluate potential construction methods to minimize disruption to shellfish harvesting; and - Conduct sediment deposition studies to define potential areas of impact.
Commercial Fishing	10.2-32.8	22.6 mi	NA	Lobster Trapping	<p>Islander East proposes to:</p> <ul style="list-style-type: none"> - Construct the offshore pipeline during the winter months; - Notify the Long Island and Connecticut lobstermen's associations of the exact location of the proposed pipeline prior to construction using the Loran coordinates; - Advise the Lobstermen's Associations of the size of the lay barge and support vessels; - Notify the Lobstermen's Associations of the construction schedule to facilitate removal of lobster pots prior to construction; and - Have a lobsterman act as a spotter during construction to identify and move fishing gear within the construction area.

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Recreational Fishing and Boating	10.2-32.8	22.6 mi	NA	Charter and recreational boats offshore open water	Negligible to minor impacts during construction phase only. The offshore construction equipment would have limited presence in both space and duration at any one location. Also, size of channel is large enough that boats would have access to other parts of channel around construction path. Additionally, Islander East proposes to construct the offshore pipeline during winter months when recreational fishing and boating is reduced.
Vessel Traffic	10.2-32.8	22.6 mi	NA	Commercial shipping offshore shipping lanes	Minor impacts during construction phase only. The offshore construction equipment would have limited presence in both space and duration at any one location. Also, size of channel is large enough that vessels would have access to other parts of channel around construction path. Additionally, Islander East proposes to: <ul style="list-style-type: none"> - Comply with navigation regulations and precautions to avoid impeding vessel traffic; - Coordinate with the U.S. Coast Guard; - Issue a Notice to Mariners prior to construction; and - Construct the offshore pipeline during the winter months.
Vessel Traffic	10.2-32.8	22.6 mi	NA	Guided boat tours of Long Island Sound and the Thimble Islands	No impact is expected. Islander East proposes to construct offshore pipeline during winter months when tour boats are not active.
Mooring Fields	10.2-10.4	0.2 mi	NA	Small dolphin/boat mooring area	No impact expected due to proposed HDD in this area.
Lightering Fields (for fuel ship product transfer/unloading)	2,000 ft west of MP 19.3	NA	U.S. Coast Guard (USCG) Group/MSO Long Island Sound	Nearest lightering field is 2,000 ft west of pipeline	Field would not be directly impacted. Pipeline route was designed to avoid existing lightering field. Laws prohibit lightering fields to be above pipelines or cables.

3.0 ENVIRONMENTAL ANALYSIS

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/ Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Discontinued dumping ground	2,000 ft west of MP 19.3	NA	State of Connecticut	Discontinued dumping ground	Discontinued dumping ground would not be directly impacted. Pipeline passes 2,000 ft east of the discontinued dumping ground.
Navigational Buoys	10.2 - 32.8 (various locations in Long Island Sound)	NA	U.S. Coast Guard	Navigational buoys	Islander East proposes to work with the USCG to avoid or minimize impact to navigational aides during construction. No impact during operation.
Suffolk County, New York					
Wading River Marsh	Within 0.4 mile of 32.8-33.1	NA	New York State Department of State	Designated significant coastal fish and wildlife habitat, 200 acres of undeveloped salt marsh	Islander East proposes the landfill location on Long Island approximately 0.4 mile west of area, thereby avoiding this area. However, the pipeline would traverse land in this area that Suffolk County desires to purchase/acquire for preservation, known as the Spring Meadow tract.
Central Pine Barrens	34.4-42.7 42.8-43.3	8.3 mi 0.5 mi	Central Pine Barrens Joint Planning and Policy Commission	Region of forest dedicated for preservation, contains the largest protected remnant of a forest thought to have encompassed over a quarter million acres on Long Island. Compatible Growth Area (CGA) = 47,500 acres total, Core Preservation Area (CPA) = 55,000 acres total.	Pipeline would traverse 5.5 miles in CPA and 3.3 miles in CGA, aligned adjacent to existing ROWs (William Floyd Parkway, Long Island Expressway) and along the border of previously developed lands. Mainline valve construction at MP 42.0 in existing open/unforested area. Islander East proposes to use standard upland construction methods, to assess workspace needs to identify opportunities to minimize clearing, and to continue consulting with the Central Pine Barrens Joint Planning and Policy Commission.

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Brookhaven State Park	34.5-36.8	2.3 mi	State of New York	Undeveloped park within Central Pine Barrens	Pipeline route would be adjacent to William Floyd Parkway ROW. Pipeline itself would not enter park boundaries. However, a portion of the construction area would fall inside the boundaries. No recreational facilities are in proximity to pipeline route. Islander East believes a buried pipeline is not inconsistent with land purpose, and proposes to consult with state officials to minimize disturbance.
Brookhaven National Laboratory (BNL)	38.2-41.7	3.5 mi	U.S. Department of Energy	Multidisciplinary research laboratory and grounds	Islander East would coordinate with BNL and obtain a license from U.S. Department of Energy to cross BNL grounds.
Peconic River	38.5	15 ft	State of New York	State-designated scenic river on Brookhaven National Laboratory property	Pipeline crosses river along roadside of Upton Boulevard, an existing ROW. Islander East expects that this intermittent stream would be dry at time of crossing, but if flowing, Islander East would cross using wet trench crossing method. Islander East would consult with state officials and implement ESC Plan to minimize disturbance.
Southaven County Park	42.9-43.3	0.4 mi	County of Suffolk	1,350-acre recreational area with numerous recreational facilities	Proposed pipeline would parallel Long Island Expressway ROW. No recreational facilities are close to pipeline route. Islander East proposes to consult with county officials to minimize disturbance.

3.0 ENVIRONMENTAL ANALYSIS

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Carmans River	43.2	20 ft	County of Suffolk/State of New York	State-designated scenic river in Southaven County Park	Pipeline route would be adjacent to relatively narrow (width) KeySpan Fiber Optic ROW in forested area, leaving an approximately 50-foot-wide forested buffer strip between the ROW and the Long Island Expressway. Islander East proposes to use HDD crossing method for this river, which if successful and feasible would minimize tree clearing at the river bank and minimize visual impacts. Large extra work space areas (two 50- by 100-foot areas) are proposed 50 feet back from banks to facilitate the HDD. In the event the HDD fails, conventional crossing methods would be used, requiring clearing up to and through the river banks. Islander East would consult with county and state officials to minimize disturbance in this area.
Country Home Cemetery	43.3	200 ft	Suffolk County Park District	Country Home Cemetery National Register of Historic Places	200 feet of pipeline crossing would be adjacent to existing fiber optic leases on northern portion, just south of Long Island Expressway exit ramp. Islander East is addressing this area in conjunction with its Cultural Resources investigation and consultations (see section 3.9).
Calverton Lateral					
Central Pine Barrens	CA 0.7-CA 5.6	4.9 mi	Central Pine Barrens Joint Planning and Policy Commission	Region of forest dedicated for preservation, contains the largest protected remnant of a forest thought to have encompassed over a quarter million acres on Long Island. CGA = 47,500 acres total, CPA = 55,000 acres total.	Lateral would traverse 1.0 mi. in CPA and 3.9 mi. in CGA, aligned adjacent to existing ROWs (Long Island Power Authority [LIPA], State Route 25A). Islander East proposes to use standard upland construction methods, to assess workspace needs to identify opportunities to minimize clearing, and to continue consulting with the Central Pine Barrens Joint Planning and Policy Commission.

TABLE 3.8.3-1
Special Use Areas Crossed by or in the Vicinity of the Islander East Pipeline Project (continued)

Special Use Area	MP	Distance Crossed	Landowner/Manager	Description of Area	Potential Impact and Applicant's Proposed Mitigation
Brookhaven State Park	CA 0.7- CA 1.2	0.5 mi	State of New York	Undeveloped park within Central Pine Barrens	Pipeline route would be adjacent to the west side of the LIPA power line, maximizing separation from existing residences. No recreational facilities are located in proximity to pipeline route. Islander East believes a buried pipeline is not inconsistent with land purpose, and proposes to consult with state officials to minimize disturbance.
Camp Wauwepex (Schiff Scout Reservation)	CA 2.8	2,580 ft	Boy Scouts of America/ Theodore Roosevelt Council of Nassau County, New York	550-acre seasonal Boy Scout camp	Pipeline route would be adjacent and parallel to State Route 25A ROW, crossing the northern portion of camp property. The closest camp facility is 1,800 ft. south of pipeline. Islander East proposes to continue discussions with camp personnel regarding maintaining access to the camp/facilities during construction and planning appropriate safety measures.
Calverton National Cemetery	CA 3.3- CA 5.6	2.3 mi	U.S. Department of Veteran Affairs	National burial grounds (902-acre parcel)	Pipeline would cross at unused portion of grounds and would not cross burial sites. Islander East's initial communications with the Inspector General of Veteran's Affairs did not identify concerns with respect to pipeline location. Islander East proposes to continue to coordinate with cemetery authorities to minimize disturbance.
Calverton Enterprise Park	CA 5.6	NA, at terminus of Calverton Lateral	Town of Riverhead Community Development Agency	Decommissioned national defense site (5.25 acres), currently zoned for commercial, recreational, and industrial development. Site/delivery point of AES Long Island Project, a proposed gas-fired electric generation plant.	Islander East proposes to consult with the Town of Riverhead to minimize impact on this area.

ROW = right-of-way
NA = not applicable.
CT = Connecticut.
DEP = Department of Environmental Protection.

3.0 ENVIRONMENTAL ANALYSIS

The majority (about 62 percent) of the land traversed by the project, including the submerged lands within the Sound, is owned by or under the jurisdiction of public entities. Overall, 11.4 percent is owned by Federal entities, 45.5 percent is owned by state entities, and 5.2 percent is owned by local public entities. The remaining 38 percent of all areas crossed is privately owned. All of the proposed aboveground facilities would be sited on private lands, and easements would be acquired from public and private landowners for installation of the pipeline. Table 3.8.3-2 summarizes the locations and crossing lengths of public lands along the project.

Hazardous Waste Sites

Islander East reviewed publicly available databases and identified a number of sites/areas having potential hazardous waste or contaminated soils or groundwater within 0.25 mile of the project (see table 3.8.3-3). Nine of these identified sites are located adjacent to the project area.

3.8.3.2 Environmental Consequences

One of the primary concerns in crossing recreational and public use areas is the impact of pipeline construction and operation on recreational activities. Disruption and noise during construction could be a nuisance to recreationalists and cause disturbance to wildlife, especially in protected areas. Due to the practice of scheduling on-shore pipeline construction during the summer months when recreational use is at its peak, this impact can be to a large extent, unavoidable. However, the periods of any one phase of active construction (i.e., clearing, grading, trenching, etc.) in any one area are intermittent and relatively short (generally between 1 and 5 days), therefore limiting the duration of disturbance. In addition, Islander East has selected the pipeline route through most of these parks and recreational areas to avoid the actively used portions of land, therefore reducing the potential for impacts.

Following construction, the affected areas would be restored and seeded, and recreational activities could resume. Revegetation of the right-of-way is generally completed within one growing season, except in forested areas, where reforestation could take longer, depending on existing conditions.

Site-Specific Issues

Table 3.8.3-1 lists each identified recreation and public interest area, crossing distances, potential impacts, and mitigation measures proposed by Islander East for each crossing. In addition, we have noted below several specific areas identified during the public scoping period that may require additional mitigation measures.

Wightwood School

At MP 8.9, the pipeline would be sited approximately 160 feet east of the Wightwood School, a private, progressive educational day school for students from pre-kindergarten through eighth grade. The pipeline construction workspace would be located adjacent to the school yard for approximately 250 feet, and would be located within 100 feet of the school building and within approximately 70 feet of the school parking area. The pipeline would be aligned adjacent to, and physically separated from the school grounds by, the Branford Steam Railroad through this area. We received comments expressing concern about the safety of locating the pipeline within this proximity to the school and its grounds, and construction noise interfering with the learning environment at the school. Islander East has not proposed any special mitigation measures for construction near this school, and because the school building itself is more than 50 feet away from the construction work areas and there is an active railroad between the pipeline and the school, a site-specific crossing plan has not been required for this area.

**TABLE 3.8.3-2
Federal, State, and Locally Owned Land Crossed by the Pipeline Centerline**

	Beginning MP	Approximate Crossing Length (feet)	Ownership Type	Description
ALGONQUIN FACILITIES				
Anomaly Investigations Connecticut	N/A	N/A	N/A	N/A
AGT Pipelines Retest ^{a/}				
Connecticut	N/A	N/A	N/A	N/A
ISLANDER EAST FACILITIES				
Islander East Pipeline Connecticut	0.5 4.3 4.4 4.6 4.8 10.2	75 325 260 100 190 58,133	Local Local Local Local Local State	Town of North Haven Town of North Branford Town of North Branford Town of North Branford Town of Branford State of Connecticut ^{b/}
Subtotal		59,083		
New York	21.2 37.4 37.6 38.2 42.4 42.6 42.8 43.3 43.6	61,354 110 40 18,480 1,360 1,000 2,370 1,500 3,800	State State Local Federal Local Local Local Local Local	State of New York ^{b/} State of New York (small parcel adjacent to William Floyd Parkway) County of Suffolk (small parcel adjacent to William Floyd Parkway) U.S. Department of Energy Brookhaven National Laboratory County of Suffolk-Southaven County Park County of Suffolk-Southaven County Park County of Suffolk-Southaven County Park County of Suffolk (parcels include Suffolk County Cemetery) County of Suffolk-Honor Farm (Suffolk County Home)
Subtotal		90,014		
Calverton Lateral New York	0.7 1.2 1.7 1.8 3.3 5.6	2,050 1,300 780 590 12,000 125	State Local Local Local Federal Local	State of New York-Brookhaven State Park County of Suffolk Town of Brookhaven (nature preserve) County of Suffolk U.S. Dept. of Veteran's Affairs Calverton National Cemetery Town of Riverhead, Calverton Enterprise Park
Subtotal		16,845		
GRAND TOTAL				
Federal		30,480	= 5.8 miles	
State		121,647	= 23.0 miles	
Local		13,815	= 2.6 miles	
GRAND TOTAL		165,942	= 31.4 miles	

a/ Includes only those areas where ground disturbance work is required.

b/ Submerged lands within Long Island Sound are under the jurisdictions of the States of Connecticut and New York (limited areas are under the jurisdiction of towns as shellfish lease areas).

N/A Not applicable; no Federal, state, or locally owned lands are crossed.

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**TABLE 3.8.3-3
Contaminated Sites and Landfills Located Within 0.25 Mile of the Islander East Pipeline Project**

Facility	Approximate MP	Type of Site	Name of Site	Distance and Orientation from Project
ALGONQUIN FACILITIES				
Cheshire Compressor Station				
Connecticut	0.6	SCL	Kuehl Line Marking, Inc.	0.1 mile southeast
	0.6	SCL/ CERCLIS	Alling Lander Company	0.2 mile east
	0.6	SWLF	A.J. Waste Systems	0.3 mile southeast
ISLANDER EAST FACILITIES				
Islander East Pipeline				
Connecticut	4.0	SCL	CT Auto Lift	0.3 mile west
	5.5	CERCLIS	Hartt Property	0.1 mile northeast
	6.2	SCL	Jason's Coin Laundry Dry Cleaners	0.1 mile east
	6.8	SCL	White Eagle Limited	0.1 mile east
	7.5	CERCLIS	Echlin Manufacturing	0.1 mile east
	7.5	SCL	Sandvik Milford, Corp.	Adjacent to the west
	7.8	SCL/ CERCLIS	East Main St. Disposal Area	0.1 mile west
New York	38.0	LUST	Amoco Oil	0.3 mile west
	38.5-41.7	NPL/SPL/ SWLF	BNL	Adjacent to the east
	44.7	LUST	Texaco	0.2 mile north
	44.7	SWLF	Oyster Bay LFGR	0.2 mile north
Calverton Lateral				
New York	3.4	LUST	Metro S/S	Adjacent
	5.0- 5.5	CERCLIS	Naval Weapons Industrial Reserve	Adjacent to the east and south
	5.0-5.5	CERCLIS	Grumman Aerospace	Adjacent to the east and south
	5.0-5.5	LUST	Grumman Calverton Fuel Area	Adjacent to the east and south
	5.0-5.5	LUST	Grumman Aerospace, Corp.	Adjacent to the east and south
	5.0-5.5	LUST	Grumman Swan Pond Road	Adjacent to the east and south
	5.0-5.5	LUST	NWIRP Calverton	Adjacent to the east and south

Notes:

CERCLIS = Comprehensive Environmental Response, Compensation and Liability Information System (U.S. EPA).

LUST = Leaking Underground Storage Tanks (States of Connecticut and New York).

NPL = National Priority List (U.S. EPA).

SCL = State Equivalent CERCLIS List (States of Connecticut and New York).

SPL = State Equivalent Priority List (States of Connecticut and New York).

SWLF = Solid Waste Landfills, Incinerators, or Transfer Stations (States of Connecticut and New York).

Land Trusts

The project would cross several land parcels deeded for preservation or conservation as dedicated open space in the Towns of North Haven, North Branford, and Branford, Connecticut. As listed in table 3.8.3-1, these areas include one property administered by North Haven Land Trust (MP 0.3), one property administered by North Branford Land Trust (MP 4.2), and four properties administered by Branford Land Trust (MPs 8.1, 8.5, 8.9, and 9.7), for a total crossing distance of 0.6 mile. A town recreational trail would also be crossed at MP 10.0 on land trust property. These organizations have expressed concern that routing the pipeline through these parcels would be

contrary to the legal restrictions on use and development placed on these properties, and also have concerns regarding the environmental impacts of the project as proposed. In particular, the Branford Land Trust recommends that, if the pipeline cannot be re-routed to avoid these properties, construction workspace and tree clearing should be reduced in certain areas of crossing, large or unique trees should be protected from clearing, crossing of recreation trails should be avoided, restoration measures should include planting trees and shrubs along the construction area, and a guaranteed income source or bond should be established to assure that removal of any invasive plant species can be accomplished when needed.

In late October 2001, Islander East provided information to the Branford Land Trust regarding three route variations through the Goss property (MP 9.7), and is continuing its attempts to obtain and incorporate the organization's feedback and site-specific concerns into its construction plans. This and other alternatives to crossing land trust properties are evaluated in section 4 of this EIS. Islander East states that it would continue to work with the Branford Land Trust and the other land trusts crossed by the project to identify and address site-specific concerns prior to construction. Therefore, we recommend that:

- **Before construction, Islander East should file with the Secretary any revised construction and restoration plans for crossing the properties administered by North Haven Land Trust (MP 0.3), the North Branford Land Trust (MP 4.2), and the Branford Land Trust (MPs 8.1, 8.5, 8.9, and 9.7).**

Commercial Fishing

Islander East met with and held informational sessions on May 1, May 17, and September 25, 2001, for shellfishermen and lobstermen potentially affected by the project. Islander East discussed its offshore survey and sampling work, proposed pipeline and survey locations, schedule for surveys, general schedule for construction, and coordination/communication plans/needs. Islander East stated that it would continue to maintain dialogue with offshore interests, including the Branford Shellfish Commission, and commercial shellfishermen and lobstermen. See section 3.8.1.2 for more details on impacts and impact minimization measures for commercial fishing activities.

Central Pine Barrens of New York

The Central Pine Barrens of New York are crossed for approximately 13.7 miles, primarily along existing rights-of-way such as the William Floyd Parkway and the Long Island Expressway. The 102,500-acre Central Pine Barrens was established under the Long Island Pine Barrens Protection Act of 1993, an amendment of the New York State Environmental Conservation Law, Article 57. This area was created as a forest preservation area, and contains the largest remnant of forest thought to have encompassed over a quarter-million acres on Long Island. This area is administered by the Central Pine Barrens Joint Planning and Policy Commission (Pine Barrens Commission), which acts as a regional land use board to review and approve applications for development in the Central Pine Barrens. According to state law, all proposed development must be consistent with the Central Pine Barrens Comprehensive Land Use Plan, unless the Pine Barrens Commission grants an exemption for the development due to "hardship," a determination that the activity does not constitute "development," or the activity is determined to be necessary due to compelling public need.

The Central Pine Barrens Comprehensive Land Use Plan divides the land area into two designated areas for the purposes of managing development: a Core Preservation Area (CPA) encompassing 54 percent of the total land area of the Central Pine Barrens, and a Compatible Growth

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Area (CGA) encompassing 46 percent of the total land area. The allowable uses in the CPA are generally limited to those uses which do not constitute "development," and allowable uses in the CGA are defined to allow appropriate growth consistent with certain standards for protection of natural resources. The proposed project mainline and the Calverton Lateral would traverse a total of 6.5 miles in the CPA and 7.2 miles in the CGA.

The Pine Barrens Commission, the Long Island Pine Barrens Society, the FWS, The Nature Conservancy, and the NYSDEC each expressed concerns regarding incompatibility of pipeline development in designated CPA and CGAs, and clearing and fragmentation of forested areas. They have also suggested alternative routes which avoid CPA. The Long Island Pine Barrens Society voiced numerous other concerns for the route through the Central Pine Barrens regarding other environmental resources, restoration measures, maintenance practices, safety, and procedural issues related to the permitting process established for proposed development in the Central Pine Barrens. See section 3.5.2 for a discussion of impacts related to forest clearing and fragmentation, and section 4 for a discussion on alternative routing.

With regard to the siting of the proposed project, we believe that the pipeline's location closely adjacent to these parkways, generally a distance of 30 feet from the white line on the edge of the travel lane on William Floyd Parkway's travel lane and 15 feet from the edge of pavement on Long Island Expressway, serves to reasonably reduce tree clearing while also minimizing construction-related traffic impacts. A few short areas of new right-of-way (totaling approximately 0.9 mile) would be created where the pipeline route would shift to avoid residences, interchanges, and other features. In one area along the William Floyd Parkway, between MPs 40.4 and 41.3, the pipeline would be approximately 100 feet from the road. Islander East proposed this separation to avoid the need for extensive grading and disturbance of steep, sandy road banks, and the resulting traffic impacts, which would be required for the safe operation of construction equipment in this area, and we believe this routing is acceptable in this area. Also, the area crossed is not in the CPA, but rather in the CGA. In most areas, the pipeline through the Pine Barrens would be within or adjacent to an existing cleared right-of-way and would not add to forest fragmentation or provide a new corridor that could be used by ATVs.

Islander East has consulted with the Pine Barrens Commission regarding the project. Discussions have addressed the project's consistency with the Central Pine Barrens Comprehensive Plan, project eligibility for exemption under the process, issues with tree clearing, and other issues. Islander East has provided the Pine Barrens Commission with copies of the aerial photograph-based alignment sheets depicting the proposed project route, construction workspace, and permanent right-of-way boundaries. However, the Pine Barrens Commission has indicated that Islander East has not filed for a hardship permit. It is the Commission's policy to encourage cooperation between interstate pipelines and local authorities. Therefore, we recommend that:

- **Islander East should continue to consult with the Pine Barrens Commission concerning construction through the Central Pine Barrens. If mitigation is required by any agency for the construction in the Central Pine Barrens, Islander East should file copies of the final mitigation plan and any related correspondence prior to construction.**

Islander East is in the process of reviewing potential alternative construction techniques that could be used to reduce the amount of workspace and clearing required to install the new pipeline through the Central Pine Barrens. In addition, Islander East states that it would consult with the Pine Barrens Commission and the Long Island Chapter/South Fork-Shelter Island Chapter of The Nature Conservancy for their recommendations regarding native plantings and grass seeding for restoration

in the Pine Barrens region. However, Islander East has not yet provided us with a description of its crossing plan for the Central Pine Barrens. Therefore, we recommend that:

- **Prior to construction, Islander East shall prepare and file with the Secretary for review and written approval by the Director of OEP, a site-specific Central Pine Barrens Crossing Plan to minimize construction clearing through the Central Pine Barrens. This plan should include:**
 - a. **measures to minimize tree clearing;**
 - b. **any revised construction procedures or reductions in workspace;**
 - c. **a restoration plan including, planned revegetation techniques and species; and**
 - d. **updated alignment sheets that reflect the above measures.**

For the forested areas where tree clearing is required in the Central Pine Barrens, provide a detailed vegetation map that shows the location and types of arboreal species that would be removed, including any Federal or state protected species or local species of concern.

We believe that the routing of the pipeline through this largely unavoidable geographic area was selected using a sound decision criteria (i.e., majority follows existing highway and utility rights-of-way). However, we encourage continued cooperation and coordination between Islander East, the Pine Barrens Commission, and other involved organizations to resolve the identified issues of concern.

Hazardous Waste Sites

Based on Islander East's search of publicly available databases, nine sites having potential hazardous wastes and/or contaminated soils or groundwater are located adjacent to the project. The greatest density of sites potentially encountered during construction are on BNL property. Islander East has consulted with representatives of BNL, conducted field reviews of these areas, and has determined that construction and excavation activities are unlikely to encounter contaminated soil or groundwater in these areas. In the event that soil and/or groundwater contamination is encountered during pipeline construction, Islander East would notify the appropriate Federal and state agencies in compliance with Federal and state laws to ensure that proper measures are planned and implemented.

We believe that implementation of the Islander East's mitigation measures would adequately avoid or minimize potential contamination risks of human exposure and the spread of environmental contamination from hazardous wastes.

3.8.4 Coastal Zone Management

The state agencies responsible for administering the programs that regulate state shorelines for New York and Connecticut are the New York State Department of State, Division of Coastal Resources and Waterfront Revitalization Department, and the Connecticut Office of Sound Programs, respectively.

The Coastal Zone Management Program (CZMP) is authorized by the Coastal Zone Management Act of 1972 and administered at the Federal level by the Coastal Programs Division (CPD) within the National Oceanic and Atmospheric Administration's Office of Ocean and Coastal

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Resource Management. The consistency provisions of the Federal Coastal Zone Management Act of 1972 require activities to be consistent with each state's federally approved Coastal Management Program (CMP). In New York, the Division of Coastal Resources reviews projects and activities for consistency with the policies of the New York State CMP and approved Local Waterfront Revitalization Programs. In Connecticut, the Office of Sound Programs administers and coordinates programs within the Department of Environmental Protection which have an impact on the Sound and related coastal lands and waters.

The counties crossed by the Islander East Pipeline Project are located within the coastal zone. These counties are Suffolk County, New York and New Haven County, Connecticut.

Activities and development affecting New York and Connecticut's coastal resources that involved a Federal permit or license are evaluated for compliance with the CZMP through a process called "Federal Consistency". The applicant for a Federal permit or license is responsible for determining whether or not the proposed activity may affect any land use, water use, or natural resource of the coastal zone must comply with the requirements of the CZMP. The applicant then prepares and submits a Certification of Consistency with the CZMP to the respective state departments. The two state agencies would then review this and either concur or deny the certification.

Islander East has not received concurrence from either the New York or Connecticut agencies for its Certification of Consistency with the New York and Connecticut CZMP. Concurrence from the two state agencies that the project is consistent with laws and rules of the state CZMP guidelines must be received prior to issuance of a Notice to Proceed. Therefore **we recommend that:**

- **Islander East should file documentation of concurrence from the New York and Connecticut agencies for its Certification of Consistency with the New York and Connecticut CZMP with the Secretary, before construction.**

3.8.5 Visual Resources

3.8.5.1 Existing Environment

There are three formally designated visual resource areas along the Islander East Pipeline Project, and several other areas that are not officially designated, but possess visual/aesthetic value.

The pipeline would cross Connecticut Highway 146, a state-designated scenic road, at MP 8.9. Connecticut has authorized its State Commissioner of Transportation to designate areas of rural state highways as "scenic roads", defined as any state highway that: (1) passes through agricultural land or abuts land on which is located a historic building or structure listed on the National Register of Historic Places (NRHP) or the State Register of Historic Places; or (2) affords vistas of marshes, shorelines, forests with mature trees or notable geologic or other natural features. Among other things, this designation is established to help preserve these highways from DOT modifications, such as rerouting or widening, that would detract from their appearance. Where it crosses this two-lane scenic road, the project would be routed adjacent to Branford Steam Railroad and the proposed construction workspace would be a total of 100 feet wide on the north side of the road and 50 feet wide on the south side of the road, and some tree clearing would be required.

The pipeline would cross two New York State designated scenic rivers, the Peconic River (MP 38.5) and the Carmans River (MP 43.2). The scenic river designation is assigned to rivers that are "free of diversions or impoundments except for log dams, with limited road access and with river

areas largely primitive and undeveloped or which are partially or predominantly used for agriculture, forest management, and other dispersed human activities which do not substantially interfere with public use and enjoyment of the rivers and their shores".

Additional areas that are considered scenic according to the Central Pine Barrens Comprehensive Land Use Plan's Scenic Resources Inventory include the William Floyd Parkway from State Route 25A to the northerly edge of the Brookhaven Laboratory (MPs 34.4 to 38.2), Brookhaven State Park (MPs 34.5 to 36.8), and Southaven County Park (MPs 42.9 to 43.3) (CPB, 1995). In addition, views of the Sound from land- and water-based viewpoints are considered scenic. None of the proposed aboveground facilities would be located near these official or unofficial scenic areas.

3.8.5.2 Environmental Consequences

Potential impact on visual resources resulting from construction and operation of the proposed facilities would be of two types: (1) impact from the alteration of terrain and vegetative patterns due to pipeline construction and right-of-way maintenance; and (2) impact from the construction of permanent new aboveground facilities such as the compressor station, meter stations, and mainline valves.

Pipeline Facilities

Generally, long-term and permanent visual impacts would result where a new right-of-way corridor would be introduced in forested areas. This impact would be reduced and less noticeable where the new right-of-way is aligned adjacent to and partly overlapping existing cleared corridors. Over time, trees and shrubs would regenerate outside the permanent right-of-way and the effects of clearing would become less obvious.

Visual impacts would be reduced along streams and rivers where, following construction, a 25-foot width of riparian vegetation would be allowed to become established across the right-of-way, and only a 10-foot-wide strip over the pipeline would be maintained in a cleared condition for the life of the project.

The Algonquin pipeline re-test and excavation/repair of anomalies would result in negligible to no visual impacts because of the very limited amount of tree clearing required and the minimal amount of proposed soil disturbance.

About 36.4 miles (72 percent) of the Islander East pipeline would be located in open water, open land, agricultural, and commercial/industrial areas where visual impact would be confined to the construction period. Approximately 4.5 miles of the pipeline would require the creation of new rights-of-way on land. In the majority of these areas requiring new rights-of-way, visual impacts would be reduced because the rights-of-way would be in open or commercial/industrial areas, or in forested areas along the boundary of existing cleared areas, including the pipeline route in the areas of the William Floyd Parkway (MPs 34.4 to 38.2), Brookhaven State Park (MPs 34.5 to 36.8), and Southaven County Park (MPs 42.9 to 43.3).

We received a comment from the Branford Blue Ribbon Committee concerning visual impacts of clearing the wooded area along the Branford Steam Railroad. The pipeline would be aligned adjacent to the railroad for approximately 4 miles between MPs 6.1 and 10.1, where the railroad is a single track and tall trees create an almost closed canopy over the tracks. The land uses through this narrow area consist primarily of undeveloped woodlands and open land interspersed

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between densely developed commercial/industrial and residential areas. Although some of the area traversed is designated Open Space by the Town of Branford, the only designated scenic area along the route is Highway 146 (discussed below). The Blue Ribbon Committee suggested that one of Islander East's required conditions should be to replant all wooded areas cleared in the temporary work areas with trees of the same size removed, and to limit the permanent right-of-way along the Branford Steam Railroad to the width required for visual inspection from ground surveys, as opposed as aerial surveys. We believe that the proposed routing adjacent to the existing railroad corridor, limitation of construction workspace to only that required to construct the pipeline safely and effectively, and restoration and operations/maintenance measures proposed in the ESC Plan, are adequate for this area. We believe that the 50-foot-wide permanent right-of-way is a prudent width to allow for effective visual inspection for safety during operation, such that a reduction in permanent right-of-way width is not necessary. A forested buffer will still remain between the right-of-way and most of the residential areas, and woody vegetation will be allowed to return to the temporary workspace areas.

Only temporary and minor impacts on scenic views of the Sound would result from construction, where aesthetics could be affected by the presence and visibility of construction equipment and possible presence of turbid water. These effects would generally be limited to the construction period, and after completion, the views of the Sound would be essentially the same as before construction.

As listed in table 3.8.3-1, Islander East proposes to cross the state-designated scenic Highway 146 along the existing Branford Steam Railroad corridor, requiring some tree clearing on the north side of the road crossing. This highway is designated scenic along its entire length in Connecticut. Although construction would require tree clearing and widening the existing corridor to accommodate pipeline construction, visual impact to travelers along the road would be negligible, due to the relatively short line of sight and time duration that automobile travelers would view this area.

As listed in table 3.8.3-1, Islander East proposes to cross the Peconic River adjacent to the west side of Upton Boulevard. Using Islander East's proposed conventional wet trench crossing technique, tree clearing would be required, resulting in a wider existing right-of-way across the river banks. However, impacts would consist of widening an existing road corridor and visual impacts would be negligible to minor.

Islander East proposes to cross to Carmans River using the HDD construction method, which, if successful, would avoid the need for forest clearing of a right-of-way along the river banks. This technique would allow forest clearing for construction right-of-way and two extra workspace areas (measuring about 50 feet by 100 feet) to end 50 feet back from the river banks on both sides, leaving intact a 50-foot-wide forested buffer adjacent to the river. This plan would conform to the recommendations we received from the NYSDEC, which stated that newly cleared areas must not be visible from viewpoints in the scenic rivers (Sanders, 2001). In the event that the HDD across Carmans River is not successful, Islander East would clear the construction right-of-way across this forested buffer and the river banks to complete the conventional crossing method Islander East proposes as a contingency to the HDD. This contingency plan would result in a new cleared corridor across Carmans River. The right-of-way would be parallel to, but would not abut, the Long Island Expressway. The right-of-way in this area would be located about 25 to 100 feet away from the road, and would be separated from the expressway by an existing forested strip about 25 to 100 feet wide. However, Islander East expects that the HDD crossing method would be feasible and successful at this river.

Aboveground Facilities

Aboveground facilities would be the most visible features constructed as part of the project and would result in a long-term visual impact on the landscape. The degree of impact depends on several factors, including the character of the existing landscape, the number of viewpoints from which to observe the facilities, and the number and type of viewers who would be able to view the facilities. Of the new facilities, the Cheshire Compressor Station would be the largest and would therefore have the most potential to be visually intrusive. The proposed meter stations and mainline valves would also result in visual impacts, but these facilities would be significantly smaller and therefore would be less visually intrusive.

The Cheshire Compressor Station would be located in a forested and agricultural area. Of the 61-acre parcel that Algonquin would purchase for the station, only 7.2 acres would be used for operation. Any views of the station would be seen in the context of existing industrial and commercial buildings, and existing transmission pipeline rights-of-way. Algonquin intends to keep the surrounding forested buffer intact. Therefore, the station would not be visible from nearby roads. Landscaping has been proposed by Algonquin, and includes placing shrubs at the entrance to the station access road and at the front gate, and planting trees in and around the operational portion of station property. No scenic resources have been identified in this area, and the station would be consistent with the context of the existing commercial and industrial development in the area.

The North Haven Meter Station would be constructed in an industrial area that is surrounded by residential areas. However, this station would be constructed within or adjacent to an existing meter station operated by Algonquin; accordingly, in the context of its surroundings, the station would not introduce a significant visual intrusion on the landscape.

The Brookhaven Meter Station (MP 44.8) would be located on forested land, adjacent to the Patchogue Yaphank Road, a divided highway. The Calverton Meter Station (CA MP 5.6) would be constructed on open land adjacent to SR 25/Middle Country Road, near the end of Grumman Peconic River Airport. The sites for these meter stations are not currently occupied by existing aboveground pipeline facilities, and therefore, the proposed facilities would be more conspicuous on the landscape. To reduce visual impacts, Islander East proposes to install screening, including landscaping, at these facilities. None of these areas for the meter stations has been identified as a designated scenic area.

The five proposed mainline valves would be located within the compressor or meter station properties or the permanent right-of-way. Mainline valves within the permanent right-of-way would be located in commercial/industrial, open, or forested lands near public roads, and would include a 6-foot-high aboveground valve, enclosed in a fenced area. A permanent access road would be constructed and stabilized with either gravel or pavement. The disturbed area within the fenced enclosure would be graveled, and outside the fence would be seeded. Mainline valves are relatively small and, based on their proposed locations, are not expected to present a significant change in the visual quality of areas surrounding the pipeline right-of-way. None of the areas for the mainline valves has been identified as a designated scenic area, and none of these valve sites are proposed near residences.

Based on Algonquin's and Islander East's selection of aboveground facility sites in areas previously used for utility or industrial use or where they would be visually unobtrusive, construction of the aboveground facilities would have minimal visual impact.

3.9 CULTURAL RESOURCES

Section 106 of the NHPA, as amended, requires the Commission to consider the effect of its undertakings (including issuance of certificates) on any properties that are listed in or eligible for listing in the NRHP and to afford the Advisory Council on Historic Preservation (ACHP) an opportunity to comment. As an applicant, Islander East is gathering information necessary for us to comply with Section 106, in accordance with the ACHP, and regulations at 36 CFR Part 800.

Islander East and Algonquin's cultural resources consultants performed archaeological investigations after consulting with the New York and Connecticut State Historic Preservation Officers (SHPOs). In addition to the pipeline right-of-way, the surveys included extra temporary workspaces, one compressor station, area for the removal of two launchers, five valve sites, two meter stations, and access roads. Islander East's consultant identified five prehistoric and seven historic archaeological sites. Of these 12 sites, the consultant recommended that 11 sites need further evaluation and may have the potential to be eligible to the NRHP, while one site was recommended as not potentially eligible. Islander East is conducting additional surveys and testing of the 11 sites that may be potentially eligible. Potential NRHP-eligible properties identified for the onshore routes and the status of evaluation of the properties are listed in table 3.9-1.

In consultation with the New York and Connecticut SHPOs, Islander East developed a study to identify potential impacts on significant cultural resources from construction of the offshore portion of the project. Through background literature review, Islander East's contractor identified at least 11 vessel losses within the vicinity of the Islander East offshore corridor. This figure was estimated to be only a fraction of the actual total due to the high volume of vessel traffic and lack of early records. The archaeological remote sensing survey was separated into two phases. First, a 150-foot-wide central corridor and three alternate routes were surveyed and analyzed to determine if the pipeline route crosses any potential cultural resources. The second phase includes survey of the anchor-spread area to determine what locations need to be avoided during anchoring operations. During the field survey, instrumentation included a navigation system using a differential global positioning system, magnetometer, side-scan sonar, sub-bottom profiler, and depth sounder. Survey track lines were laid on the proposed location of the trench line with overlapping transects run on either side of the centerline to insure total coverage. All magnetic anomalies of 50 gamma deviation and 80 foot duration or more were considered to be potentially significant cultural resources. The plan also includes inspection of potential sites by qualified archaeologist divers if targets cannot be avoided. The New York and Connecticut SHPOs commented that the survey plan for this work is acceptable (Maddox, 2001; Pierpont, 2001).

Archaeological remote sensing surveys have been completed along the centerlines of the Islander East offshore corridor. Islander East is scheduling surveys of the anchor spread area for Spring of 2002 with subsequent analysis of the remote sensing data, followed by archaeological diver surveys if necessary. To date, 13 sidescan sonar targets, and 65 magnetic anomalies have been recorded along the proposed centerline corridors. The centerline designated "Option" 1 yielded two sidescan sites, SS-5 and SS-6 and 24 magnetic anomalies. Further evaluation of the data refined the signatures to seven potentially eligible shipwreck sites. Diver surveys of the targets in the Fall of 2001 found that all were composed of modern debris or were geologic in nature. As a result, the targets were not recommended as significant by Islander East's cultural resource consultant.

Anchor spread and other additional surveys, as well as reports of the diver inspections are scheduled for Spring 2002, and the results will be filed with the Commission.

TABLE 3.9-1
Potential NRHP-Eligible Properties That May Be Affected by the Islander East Pipeline Project

Site Name	Site Type/ Description	Proposed Work or Treatment ^{a/}	SHPO Comments ^{b/}	Status of Site Evaluation ^{c/}
CONNECTICUT SITES				
Farm River site	Prehistoric	Evaluate for NRHP	Cultural consultants have completed the fieldwork	Results will be submitted to the SHPO in Spring 2002
Crave's Site	Prehistoric	Evaluate for NRHP	Cultural consultants have completed the fieldwork	Results will be submitted to the SHPO in Spring 2002
Cedar Lake Road Site	Prehistoric	Evaluate for NRHP	Needs Evaluation (Maddox 2001)	Estimated schedule for Spring 2002 if landowner grants access
Greenhouse Complex	Historic	Evaluate for NRHP	Cultural Consultant have completed the fieldwork	Results will be submitted to the SHPO, Spring 2002
Rolling Acres 1698 Farm	Historic	Evaluate for NRHP	Needs Evaluation (Maddox 2001)	Scheduled for Spring 2002
All Saints Cemetery	Historic	Evaluate for NRHP	Needs Evaluation (Maddox 2001)	Access denied by landowner, evaluation on hold
Branford Railroad	Historic	Evaluate for NRHP	Needs Evaluation (Maddox 2001)	Scheduled for Spring 2002
Gould Lane Gatepost	Historic	Evaluate for NRHP	Needs Evaluation and SHPO consultation (Maddox 2001)	Scheduled for Spring 2002
Key Span Site	Prehistoric	Evaluate for NRHP	Needs Evaluation and additional SHPO consultation (Mackey 2001)	Will be scheduled following SHPO review
NEW YORK SITES				
Suffolk County Cemetery	Historic	Evaluate for NRHP	Needs Evaluation and SHPO consultation (Mackey 2001)	Scheduled for Spring 2002
Calverton Cemetery	Historic	Evaluate for NRHP	Needs Evaluation and SHPO consultation (Mackey 2001)	Scheduled for Spring 2002
Historic Structures	Architectural	Intensive Architectural Survey	Additional survey needed	Scheduled for Spring 2002
a/	As recommended by consultants.			
b/	SHPO comments.			
c/	Results have not been filed with the Commission.			

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In summary, construction and operation of the proposed pipelines and associated facilities could potentially affect historic properties. Project impacts could be direct or indirect. Direct impacts could include the physical destruction or damage to all or a portion of a site, or alteration or removal of a historic property. Indirect impacts could include the introduction of visual, atmospheric, or audible elements that diminish the integrity of the site or alter settings associated with historic properties.

Both direct and indirect project impacts on historic properties can usually be mitigated to less than significant levels. Mitigation measures range from data recovery, including the scientific excavation of archaeological sites; to detailed documentation, including architectural drawings of historic buildings. Other measures can include the use of landscaping techniques to screen visual intrusions and maintain site settings. We would require Islander East to produce treatment plans indicating how impacts on historic properties would be reduced or mitigated. We will consult with the New York and Connecticut SHPOs, the ACHP, and other parties, if appropriate, on the adequacy of these plans. After consultation, implementation of the treatment plan would occur only after the FERC issues a Certificate for the proposed project, and provides written notification to proceed.

The fieldwork to assist with compliance with Section 106 of the NHPA has not been completed for all elements of the Algonquin and Islander East Pipeline Project. While the majority of the project area has been inventoried for cultural resources, there are still locations, such as where survey access has been denied, the submerged anchor spread, and shallow offshore areas where remote sensing was not possible that have not been surveyed, or where the SHPO has not yet commented about potential effects on historic properties. Table 3.9-2 lists the elements where studies or consultations still need to be completed.

**TABLE 3.9-2
Cultural Resources Investigations or Reviews Still Needed for the Islander East Pipeline Project**

Facility	Item Not Yet Completed	Status
Algonquin Retest Section	Survey not yet conducted	Consultation meeting with the CT SHPO and state archaeologist scheduled for Spring 2002
Onshore segments	Survey of additional work areas and additional testing where preliminary access was restricted	Surveys and testing in progress, fieldwork will be completed by Spring-Summer 2002
Onshore segments	Evaluation reports for the 11 sites that may be NRHP eligible	Scheduled for Spring 2002 for sites where access was granted
Onshore segments	Architectural/Historic building survey	Fieldwork will be completed by Spring-Summer 2002
Offshore segments	Anchor spread area survey, shallow area survey, additional evaluations or site avoidance plans	Fieldwork will be completed by Spring-Summer 2002

To ensure that all project components are properly studied for cultural resources, we recommend that:

- **Islander East and Algonquin should defer construction and use of the proposed project facilities together with the use of related ancillary areas for staging, storage, and temporary work areas and new or to-be-improved access roads, until:**
 - a. **Islander East and Algonquin file with the Secretary all additional required cultural resources inventory and evaluation reports, and any necessary treatment plans;**
 - b. **Islander East and Algonquin file the appropriate SHPO and any other appropriate parties' comments on all cultural resources requests, investigation reports, and plans;**
 - c. **The ACHP has been given an opportunity to comment if any historic properties would be affected; and**
 - d. **The Director of OEP reviews and approves all cultural resources reports and plans, and notifies Islander East and Algonquin in writing that they may proceed with mitigation programs or construction.**

All material filed with the Secretary containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: "CONTAINS PRIVILEGED INFORMATION - DO NOT RELEASE."

Islander East and Algonquin have filed acceptable plans for unanticipated discovery of archaeological materials or human remains during construction for both New York and Connecticut.

Native American Consultation

Section 101(d)(6) of the NHPA requires Federal agencies, as part of their responsibilities under Section 106, to consult with Indian tribes to identify properties of traditional religious and cultural importance which may be affected by a project. Islander East and Algonquin's consultant contacted the Indian Affairs Coordinator for the State of Connecticut, and initiated consultation with the Shinnecock Nation of New York. To date, the Native American representatives have not requested further consultation with Islander East and Algonquin's cultural resource consultants, and no traditional cultural properties have been identified.

3.10 SOCIOECONOMICS

3.10.1 Region of Influence

The Islander East Pipeline Project would involve the construction of about 10.2 miles of new pipeline in New Haven County, Connecticut, and 17.6 miles of new pipeline in Suffolk County, New York. Approximately 22.6 miles of new pipeline would be constructed offshore in Sound. About 11.0 miles would be in Connecticut waters and the other 11.6 would be in New York waters. An additional 27.5 miles of pipeline and pipeline loop in New Haven County would be retested and inspected. Three new meter stations, one compressor station, and five valves would also be constructed; the compressor station, one meter station, and two valves in New Haven County and two meter stations and three valves in Suffolk County. In addition, an existing set of launchers in New Haven County would be relocated to the new compressor station. Table 3.10.1-1 summarizes selected socioeconomic statistics for the project area.

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TABLE 3.10.1-1
Existing Socioeconomic Conditions in the Project Area

State/County	Population 2000	Density (People/Square Mile)	Per Capita Income 1999	Rental Vacancy Rate 1990	Civilian Labor Force July 2001	Unemployment Rate July 2001	Major Industry
CONNECTICUT	3,405,565 ^{a/}	702.9 ^{d/}	\$38,506 ^{b/}	6.9 ^{e/}	1,756,866 ^{h/}	3.4 ^{d/}	Services, Retail ^{d/}
New Haven	824,008 ^{a/}	1,359.7 ^{d/}	\$33,201 ^{b/}	7.5 ^{e/}	424,652 ^{h/}	3.9 ^{d/}	Services, Retail ^{d/}
NEW YORK	18,976,457 ^{a/}	401.9 ^{d/}	\$33,901 ^{b/}	4.9 ^{e/}	9,096,000 ^{h/}	4.5 ^{d/}	Services, Retail ^{d/}
Suffolk	1,419,369 ^{a/}	1,556.3 ^{d/}	\$33,803 ^{b/}	7.0 ^{e/}	747,300 ^{h/}	3.8 ^{d/}	Services, Retail ^{d/}

Sources:

a/	Census 2000a	d/	CTDOL 2001	h/	Census 2000b
b/	BEA 1999a	e/	BEA 1997	i/	NYDOL 2001a
c/	Census 1990a	f/	BEA 1999b	j/	Census 1990b
		g/	Duke 2001a	k/	NYDOL 2001b

3.10.2 Population and Housing

The population of New Haven and Suffolk Counties increased by 2.5 percent and 7.5 percent, respectively, over the past decade (Census, 2000a; Census, 2000b). Population density, an indicator of the extent of development, is very high in the project area, with both New Haven and Suffolk Counties having over 1,300 persons per square mile. The population density of each county is significantly higher than the population density of their respective states. Both counties are part of the greater New York City Metropolitan Area. The Islander East Pipeline Project would pass through highly developed areas of New Haven County but only moderate to-low developed areas of Suffolk County. The more developed areas of Suffolk County are to the west of the project location.

A large supply of housing is available in the project area, as shown in Table 3.10.1-2. Though the rental vacancy rates for New Haven and Suffolk Counties are 7.5 percent and 7.0 percent respectively, a large number of rental units are available to provide temporary housing. Over 12,000 rental units are available in New Haven County and over 9,000 are available in Suffolk County. The tourist base of these two counties also contributes a large supply of hotel and motel rooms for temporary housing.

TABLE 3.10.1-2
Housing Characteristics of the Project Area

County	Total Number of Housing Units	Number of Owner-Occupied Units	Owner-Occupied Vacancy Rates	Median Value	Number of Occupied Rental Units	Rental Vacancy Rates	Median Monthly Contract Rent
New Haven	327,079	191,497	1.8	\$165,200	113,233	7.5	\$493
Suffolk	481,317	340,253	1.9	\$165,900	84,466	7.0	\$696

Source: Census, 1990c; Census, 1990d.

There are many communities in the vicinity of the pipeline route. These communities support government and public services such as police, fire protection, medical services, and schools (see table 3.10.1-3).

TABLE 3.10.1-3
Community Statistics of the Project Area

County	Health Services	1992 General Revenue Expenditures	Major Towns Near Pipeline Route	Total Square Miles in the County
New Haven	3,246 doctors 8 hospitals 2,268 hospital beds	\$1,715,100,000	New Haven, East Haven, Branford	606
Suffolk	3,649 doctors 13 hospitals 4,236 hospital beds	\$4,379,400,000	Brookhaven, Riverhead	912

Source: Duke, 2001a.

Construction of the Islander East Pipeline Project would result in a temporary increase in population within the project area. Construction personnel that would be hired from outside the project area would include construction specialists, supervisory personnel, and inspectors, accounting for approximately 50 to 70 percent of the workforce. These individuals would need to move into the project area on a temporary basis. Non-local workers would generally reside in the vicinity of the project for relatively short periods of time and, typically, few workers are accompanied by family members.

Most non-local workers are likely to use temporary housing such as hotels, motels, and apartments within commuting distance of the project area. Temporary housing is typically used because the construction period for the project is relatively short, and because most non-local workers generally would not bring family members due to the relatively short-term nature of the relocations. Construction crews would not have difficulty locating temporary housing.

3.10.3 Employment and Income

Employment in the project area is concentrated in the service and retail sectors. Unemployment is relatively low in both counties. Of the two counties, Suffolk County has the large civilian labor force.

In 1999, the per capita income of New Haven and Suffolk Counties were almost equivalent. New Haven County was well below the average for Connecticut while Suffolk County was almost equivalent to the average for New York.

Employment and income impacts are addressed in terms of direct and indirect impacts. Direct impacts are those changes that can be directly attributed to the proposed project, such as changes in employment and expenditures from the construction and operation of the proposed compressor station. Indirect impacts to the project area occur based on the direct impacts from the proposed project. Two factors, (1) the changes in site purchase and non-payroll expenditures from the construction and operation phases of the project, and (2) the changes in payroll spending by construction employees, indirectly lead to changes in employment levels and income in other economic sectors throughout the project area (i.e., housing, entertainment). The total economic impact is the sum of the direct and indirect impacts. For this analysis, the term direct jobs refers to the employment created by the project and direct income refers to project workers' salaries. The term indirect jobs refers to the employment created in other economic sectors as an indirect result of new employment at the construction site, and indirect income refers to the income generated by the new indirect employment.

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Table 3.10.2-1 shows the total employment and income effects from each facility of the Islander East Pipeline Project. The project would require 1,000 construction workers to build the facilities and would generate an additional 960 jobs in other employment sectors in New Haven and Suffolk Counties. The Islander East Pipeline Project would benefit the local economies of both counties by generating approximately \$55.5 million in new income during the 14-month construction period. Algonquin and Islander East, through their construction contractors and subcontractors, would attempt to hire local skilled construction workers. Approximately 30 to 50 percent of the construction workers per spread and for the construction of the compressor station would be local hires. The majority of inspectors would be non-local due to the specialized knowledge required for the position. Since the offshore and onshore construction would not happen concurrently, the majority of the 200 workers required for offshore construction could also work in the onshore spreads, thus filling approximately 25 percent of the 800 onshore construction jobs.

Operation of the facilities would require minimal employment onsite as the aboveground facilities are designed for remote control operation. Two employees would staff the compressor station and inspectors and maintenance crews would be employed on an as-needed basis. The minor increase in employment during the operation of the proposed facilities would not lead to any significant employment or income effects.

Local Economy and Tax Revenues

During construction of the facilities, some portion of the direct income would be spent locally for the purchase of temporary housing, food, gasoline, entertainment, and luxury items. The amount spent in a given area would depend on the number of construction workers and the duration of their stay. Some portion of the construction materials would also be purchased locally. These expenditures would stimulate the growth of the indirect jobs detailed above. These expenditures would also generate revenue for state and county governments through the payment of sales taxes on the purchases.

The tax revenue impacts of operating the pipeline would be more long-term. During operation, the pipeline facilities would be subject to state, county, and local property taxes. State, county, and local governments would benefit from the increased revenue and their respective annual budgets would increase. Table 3.10.2-2 presents a breakdown of expenses and tax revenue for the first 3 years of facility operation. Approximately \$60 million in tax revenues, interest payments, and operation and maintenance costs would be generated during the first 3 years of operation of the facilities.

Community Services

Given the relatively high population density of the project area, the socioeconomic impacts associated with incremental increases in demand for community services and facilities are not expected to be significant. Community services, such as police, fire protection, and medical facilities, would experience minor and short-term impacts. Demands for local government agency action would experience a short-term increase as permit applications are filed and permits are issued.

Police, fire, medical, and government services, as well as local schools, would benefit from the increased tax revenue and expenditures resulting from the Islander East Pipeline Project.

**TABLE 3.10.2-1
Employment and Income Generated by the Islander East Pipeline Project**

Facility	County, State	Duration (Months)	Estimated Workforce	Indirect Employment Generated	Total Employment Created	Direct Income Generated ^{a/}	Indirect Income Generated	Total Income Generated
Algonquin								
AGT Pipelines Retest, Anomaly Inspections, & Launcher Relocations	New Haven, CT	3	30	29	59	\$413,000	\$345,000	\$758,000
Islander East								
Cheshire Compressor Station	New Haven, CT	6	100	96	196	\$2,750,000	\$2,300,000	\$5,050,000
Connecticut Onshore								
Connecticut Onshore to Offshore HDD	New Haven, CT	8	200	192	392	\$7,350,000	\$6,140,000	\$13,490,000
Islander East/North Haven Meter Station	New Haven, CT	5	75	72	147	\$1,720,000	\$1,440,000	\$3,160,000
Long Island Sound Offshore	New Haven, CT & Suffolk, NY	5	45	43	88	\$1,030,000	\$864,000	\$1,894,000
New York Onshore	Suffolk, NY	5	200	192	392	\$4,700,000	\$3,930,000	\$8,630,000
KeySpan Energy Delivery and ANP Brookhaven Meter Station	Suffolk, NY	8	250	240	490	\$9,790,000	\$8,190,000	\$17,980,000
AES Calverton Meter Station	Suffolk, NY	5	55	53	108	\$1,350,000	\$1,130,000	\$2,480,000
Total		14^{b/}	1,000	960	1,960	\$30,203,000	\$25,260,000	\$55,463,000

a/ Direct Income was determined by using the average salary for Heavy Construction Workers as listed in the County Business Patterns.

b/ The total construction schedule is estimated at 14 months. Offshore construction would occur between November 2002 and April 2003 and all onshore construction would occur in various phases between April 2003 and December 2003.

Sources: Duke, 2001a; CBP, 1999a; CBP, 1999b.

TABLE 3.10.2-2
Local Expenses and Tax Revenue for Facility Operation

Project Expense	2003	2004	2005
Operation and Maintenance	\$5,785,149	\$5,424,474	\$5,448,854
Taxes Other than Income	\$3,299,715	\$3,332,828	\$3,366,274
Total Operating Expense	\$9,084,864	\$8,757,302	\$8,815,128
Federal Income Tax	\$3,424,245	\$3,246,539	\$3,045,488
State Income Tax	\$825,375	\$782,541	\$734,080
Total Income Taxes	\$4,249,620	\$4,029,080	\$3,779,568
Interest Expense	\$8,378,720	\$7,820,139	\$7,261,557
Total Expenses and Tax Revenue	\$21,713,204	\$20,606,521	\$19,856,253

Source: Duke, 2001a.

During operation, Algonquin and Islander East would be required by the DOT to establish and maintain communications with appropriate fire, police, and public officials. The company would institute procedures that would be followed to coordinate and respond to gas pipeline emergencies (see section 3.12, Safety and Reliability).

Transportation

Road and Rail Traffic

A highly developed system of local-, county-, and state-maintained roads exists in the project area. These roads would provide access to the project area. Major roads that would be crossed by the pipeline route in Connecticut include Highway 80, U.S. Route 1, and Interstate 95. Major roads that would be crossed by the pipeline route in New York include the Long Island Expressway (Interstate 495), State Route 25 and 25A, and the William Floyd Parkway (Suffolk County Route 46).

Short-term impacts on the transportation network would result from construction of the pipeline across roads, movement of construction equipment and material to and from work areas, and daily commuting of the construction workforce to the work area. The impacts would not be significant.

Islander East would install the pipeline under several high-volume paved roadways and railroads using the horizontal boring method, thereby avoiding disruption of traffic flows. Low-volume roads and unpaved roads would be crossed using conventional upland construction procedures with modifications as needed. These procedures would require closing the road or driveway and posting signs identifying construction areas and detours if they exist. Pipeline installation at road crossings would typically be completed in less than 24 hours and roads would be restored to a condition similar to preconstruction immediately following installation. In some cases, a temporary bridge or bypass may be established on small roads and driveways, or one lane may be closed at a time with traffic diverted to other lanes. Road closings during peak traffic hours would be avoided to the extent possible.

To maintain safe conditions, Algonquin and Islander East would require their construction contractors to comply with applicable vehicle weight and width restrictions, and to remove soil that is left on the road surface by the crossing of construction equipment. When it is necessary for

equipment to move across paved roads, mats or other appropriate measures would be used to prevent damage to the road surface.

The transportation network would experience a short-term incremental increase due to the additional commute traffic from construction workers between home and work. Several construction-related trips may be made each day (to and from the job site) on each spread. This level of traffic will remain fairly constant throughout the construction period, and would typically occur at early morning hours and evening hours. Road congestion is common in New Haven and Suffolk Counties and the additional traffic from construction workers commuting to work would not significantly alter current conditions. Pipeline construction work is generally scheduled to take maximum advantage of daylight hours so that most workers would commute to and from the sites in off-peak hours. Construction workers typically leave a number of personal vehicles at a contractor yard and share rides with other workers or are bused to the construction right-of-way with other workers, thereby reducing overall traffic. Furthermore, workers would be dispersed along the length of the construction spread, which tends to reduce the impact on traffic at any one location.

The movement of construction equipment and materials from contractor and pipe storage yards to the construction work area would result in an additional short-term impact on the transportation network. Truck traffic associated with transporting construction equipment and pipe to the pipeline route may increase the workload of local police due to monitoring of vehicle weight and width restrictions. Also, detours or obstructions in traffic flow due to the large vehicles or construction of pipeline road crossings may require short-term assistance from local police in limited instances. Project-related demands on local police workloads are not expected to be significant.

Vessel Traffic

Commercial shipping, ferry service, sightseeing tours, and recreational boating contribute to vessel traffic on the Sound. Construction of the offshore portion of the Islander East Pipeline Project would also generate marine vessel traffic. These vessels, when added to the existing vessel traffic, could increase competition for berth space and berthing costs and increase the potential for vessel collisions, harbor congestion, and disturbance from noise or vessel wakes. Navigation regulations and precautions would be followed so as not to impede vessel traffic during the period required for pipeline installation. Also, the large channel area of the Sound should provide adequate alternate routes for vessels.

In addition, Islander East would coordinate with the U.S. Coast Guard. Notice to Mariners would be issued with installation details. Communication would also be ongoing with vessels in the vicinity of the installation activities. The offshore areas allow for movement from one area to another so that the commercial shipping would continue as the project installation moves across the Sound. Neither of the two local ferry routes are in the vicinity of the proposed project location and no impact on service is expected.

A number of tour companies offer sightseeing tours in and around the Sound. A popular area for sightseeing in the vicinity of the pipeline route is the Thimble Islands on the Connecticut side of the Sound. Guided boat tours operate from mid-May through Columbus Day in October and depart from the Stony Creek town docks (approximately 0.6 mile east of the pipeline route). Although construction vessels would be visible from shore in this area, little or no impacts on the operations of sightseeing tours or recreational boating are expected during construction because construction would occur during winter, when tour boats are inactive.

Property Values and Land Issues

During scoping, a number of local residents expressed concern about the devaluation of their property once the property is encumbered by a pipeline easement. Appraisal methods used to estimate land values are based on objective characteristics of the property and any improvements. The impact that a pipeline or the presence of a nearby aboveground facility may have on the value of the land depends on many factors including size, existence of other pipelines, the current value of the land, its location, and current land use. A potential purchaser of a property would make a decision to purchase based on the planned use (such as agricultural, future subdivision, or home) of the property in question. If the presence of a pipeline renders the planned use infeasible, or if the presence of an aboveground facility disrupts the visual aesthetics, a potential purchaser may decide not to purchase the property. However, each potential purchaser has a different goal and ability to purchase land.

The effects that a pipeline easement may have on property values could be negotiated between the parties during the easement acquisition process. The easement acquisition process is designed to provide fair compensation to the landowner for the right to use the property for pipeline construction and operation. The easement agreement between the company and the landowner typically specifies compensation for loss of use during construction, loss of non-renewable or other resources, and allowable uses of the permanent right-of-way after construction.

If an easement cannot be negotiated with the landowner and the project has been certificated by the Commission, the company may use the right of eminent domain granted to it under section 7(h) of the NGA and the procedure set forth under the Federal Rules of Civil Procedure (Rule 71A) to obtain the right-of-way and extra workspace areas. The company would still be required to compensate the landowner for the right-of-way, and for any damages incurred during construction. However, the level of compensation would be determined by a court according to state law once the FERC issues a certificate. In either case, Islander East would compensate landowners for the use of the land.

Property taxes for a parcel of land are generally based on the actual use of the land. The majority of the pipeline would follow existing rights-of-way to minimize impacts to land use and vegetation cover. Impacts to these resources would still occur, however, the majority of the impacts would be located along the Calverton Lateral. These impacts are addressed in sections 3.5, Vegetation, and 3.8, Land Use. Installation of the pipeline would preclude construction of aboveground structures on the permanent right-of-way for the life of the project. Any landowner who feels that the presence of the pipeline easement reduces the value of their land, resulting in an overpayment of property taxes, may appeal the assessment/taxation issue to the local property tax agency.

Residents were also concerned that the presence of the pipeline would lead to further utility construction, such as pipelines and transmission lines, on adjoining lands. They also felt that the presence of the right-of-way would lead to the increased use of off-road vehicles along the route. These issues are addressed in section 3.8.2.2. A number of residents in Suffolk County are also concerned about the proposed route passing through CPAs of the Pine Barrens Region. This issue is addressed in section 3.8.3.2.

Environmental Justice

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, provides that "each Federal agency shall make achieving

environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations." In addition to considering environmental effects, Federal agencies should identify mitigation measures that address significant and adverse environmental effects of proposed actions on minority populations, low-income populations, and Indian tribes as part of a NEPA analysis (CEQ, 1997).

Under Executive Order 12898, each Federal agency must ensure that public documents, notices, and hearings are readily available to the public. The mailing distribution list for this EIS was initiated when the NOI was first issued, and has been continuously updated during the EIS. The original mailing list included all affected property owners along the proposed route, as identified by Algonquin and Islander East, without any distinction based on minority or income status. The mailing list also included Native American groups identified as having an interest in the project area.

Since early 2001, Algonquin and Islander East have been in contact with Federal, state, and local officials, non-governmental groups, and landowners in each county traversed by the project to solicit input on the route and provide information on the project. Open houses, public scoping meetings, and the project site visit provided property owners, municipalities, counties, special interest groups, and state and Federal regulatory agencies an opportunity to comment on the project. Section 1.3 describes the public notification process and participation process, which includes interested parties without regard to minority status.

We require that an applicant initially identify all residences within 50 feet of the construction work area. From this information, we analyze the pipeline route with respect to: (1) how close in feet the proposed right-of-way is to the residence, and (2) other engineering constraints that may affect construction and the safety and welfare of residents. Special construction procedures, techniques, and/or site-specific mitigation measures are then identified to minimize impact on residences potentially affected by construction, regardless of the income or minority status of the resident. Algonquin and Islander East have prepared site specific plans and proposed several mitigation measures to minimize construction impact on 54 residential and commercial buildings located within 50 feet of the construction work area. The plans and mitigation measures are discussed in more detail in section 3.8.2.2.

We have not identified any disproportionately high and adverse human health or environmental effects on minority and low-income communities or Native American groups.

3.11 AIR QUALITY AND NOISE

3.11.1 Air Quality

Air quality can be affected by both pipeline construction and operation of compressor stations. Algonquin and Islander East propose to construct or uprate about 78 miles of natural gas pipeline in Connecticut and New York. In addition, Algonquin proposes to construct the Cheshire Compressor Station in Connecticut.

During operation, the compressor station would emit various quantities of regulated air pollutants, including carbon monoxide (CO), nitrogen oxides (NO_x), volatile organic compounds (VOCs), sulfur dioxide (SO₂), and particulate matter. NO_x emissions are a combination of nitric oxide (NO) and nitrogen dioxide (NO₂). The pollutants emitted in greatest quantities would be CO

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and NO_x. Preliminary estimates indicate that all pollutant emissions from the proposed compressor station would be below Federal major source quantity thresholds.

Regulatory Requirements

The Federal CAA provides the basis for most Federal and state air quality management programs and regulations. The EPA has adopted National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants: CO, NO_x, SO₂, ozone (O₃), inhalable particulate matter (PM₁₀), and lead. Individual states can establish additional air quality standards or standards for criteria pollutants which are more stringent than the NAAQS, and also can establish standards for pollutants not covered by the NAAQS. The air pollutants of greatest concern in the project area are O₃, CO, and PM₁₀. Ozone is not emitted directly, but forms through chemical reactions in the atmosphere from emissions of VOCs and NO_x.

States and EPA classify areas as nonattainment (violating a NAAQS), attainment (better than a NAAQS), or unclassified. Unclassified areas are treated as attainment areas for most regulatory purposes. Areas that have been reclassified from nonattainment to attainment of Federal air quality standards are automatically considered "maintenance areas". States are required to develop and implement State Implementation Plans (SIPs) to achieve and maintain the NAAQS.

Emissions from stationary sources such as the proposed Cheshire Compressor Station are subject to state and Federal air quality permit program requirements. Federal preconstruction program requirements include new source review (NSR) for sources in nonattainment areas, prevention of significant deterioration (PSD) for sources in attainment areas, and new source performance standards (NSPS) for selected categories of industrial sources. In addition to preconstruction permit reviews, facility operating permits (Title V permits under 40 CFR part 70) are required if the annual potential to emit would exceed various thresholds for criteria and hazardous air pollutants. NSR permit requirements include requirements for best available control technology (BACT) and emission offsets. PSD permit requirements include BACT requirements, evaluation of emission impacts on vegetation and soils, and dispersion modeling analyses to demonstrate that facility emissions will not cause ambient NO_x, SO₂, or PM₁₀ increment limits to be exceeded. Additional modeling analyses may be required to assess impacts on visibility in certain national park and wilderness areas.

Federal NSPS emission limits have been established for stationary gas turbines in 40 CFR Part 60 Subpart GG. These regulations limit NO_x emissions in the exhaust from large stationary gas turbines. Most new gas turbine engines easily meet the prescribed emission limits.

In Connecticut, the major source thresholds that would trigger Federal NSR requirements are emissions of 50 tons per year or more of either VOC or NO_x. The major source thresholds for Federal PSD requirements are 100 tons per year or more of attainment pollutant emissions (CO, SO₂, NO_x, or PM₁₀). A PSD review also would be triggered if a new source would have annual emissions above the significant emission rate (SER) thresholds of 40 tons per year for NO_x and 100 tons per year for CO. CTDEP regulations (Section 22a-174-3 of the Regulations of the CTDEP) would require BACT for all pollutants emitted in amounts greater than 5 tons per year.

3.11.1.1 Existing Environment

The proposed project includes compressor station facilities in New Haven County, Connecticut plus pipeline facilities in New Haven County, Connecticut and Suffolk County, New

York. Ozone, CO, and PM₁₀ are the air pollutants of greatest concern in the project area. New Haven County, Connecticut is designated as a serious nonattainment area for O₃ and as a maintenance area for carbon monoxide. The city of New Haven, Connecticut is a nonattainment area for PM₁₀. Suffolk County, New York is designated as a severe nonattainment area for O₃. The project study area is an attainment area for all other criteria pollutants.

Emission thresholds that would trigger Federal NSR and PSD review of the Cheshire Compressor Station are 50 tons per year for VOC emissions, 50 tons per year for NO_x emissions, and 100 tons per year for other pollutants (CO, SO_x, and PM₁₀). Although Federal NSR and PSD review of the compressor station is not anticipated, CTDEP regulations (Section 22a-174-3 of the Regulations of the CTDEP) would require a state air quality permit for construction and operation of the facility.

3.11.1.2 Environmental Consequences

Pipeline and compressor station construction would occur over a period of about 1 year. Construction of the Cheshire Compressor Station would require about 6 months. Onshore pipeline construction would occur over a period of about 8 months. Pipeline construction across the Sound would require about 5 months. Installation of meter stations would require about 5 months.

Construction activity at the proposed compressor station site would require various bulldozers, trucks, cranes, forklifts, front-end loaders, concrete mixers, and other construction equipment. Onshore pipeline construction would require bulldozers or graders for corridor preparation; excavators or backhoes for excavation; front-end loaders for managing topsoil and spoil stockpiles; and trucks, forklifts, mobile cranes, and side-boom tractors for pipeline handling. Most ground disturbance would occur during clearing and trenching operations at the start of construction, and during backfilling operations at the end of construction. Less ground disturbance would occur during assembly, inspection, and installation of the pipeline. Offshore pipeline construction would require a directional drill rig on the Connecticut side of the pipeline corridor. Most of the offshore pipeline construction would be done from two barges assisted by tugboats. Other small boats would transport work crews and various supplies. Algonquin would be responsible for construction of the Cheshire Compressor Station and Islander East would be responsible for pipeline construction.

The Cheshire Compressor Station would have a gas turbine compressor system, a small boiler, and a back-up power generator. Although equipment selection has not yet been finalized, preliminary emission estimates have assumed a 12,028 hp Solar Taurus Model 70-T100302S gas turbine, a 1.7 million British thermal units (MMBTU)/hr boiler, and a 200kW Waukesha F18GL generator with a fuel consumption rate of 3.22 MMBTU/HR. The estimated annual emissions from this equipment, assuming continuous operation of the compressor and boiler and 500 hours per year of generator use, are shown in table 3.11.1-1. State permit review will ensure that the Cheshire Compressor Station meets BACT requirements. Greenhouse gas emissions from the Cheshire Compressor Station are estimated to be 43,544 tons per year of carbon dioxide (CO₂), 5.20 tons per year of methane (CH₄), and 1.18 tons per year of nitrous oxide (N₂O). No Federal or state emission limits would be exceeded by these emissions, and no significant ambient air quality impacts are anticipated. Consequently, operation of the Cheshire Compressor Station would not have a significant impact on air quality.

TABLE 3.11.1-1
Estimated Annual Emissions for the Cheshire Compressor Station

Item	Model	Size rating		Hours per year	Annual emissions, tons per year				
		Value	Units		VOC	NO _x	CO	SO _x	PM ₁₀
Turbine	Solar Taurus 70-T10302S	12,028.00	Horsepower	8,760	2.00	35.68	43.44	1.32	2.56
Boiler	not identified	1.7	MMBTU/HR	8,760	0.04	0.715	0.601	0.004	0.05
Generator	Waukesha F18GL	3.22	MMBTU/HR	500	0.103	1.83	2.83	0.0005	0.008
TOTALS					2.14 (50)*	38.22 (50)*	46.87	1.32	2.62

* Federal standards are shown in parentheses for comparison. Standard for CO, SO_x and PM₁₀ is 100 tons per year combined.
Note: MMBTU/HR = Million British thermal units per hour; VOC = Volatile organic compound; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; and PM₁₀ = particulate matter (<10 microns).

3.11.2 Noise

Noise conditions can be affected during construction and operation of pipeline facilities. The ambient sound level of a region is defined by the total noise generated within the specific environment, and is usually comprised of sounds emanating from natural and artificial sources. At any location, both the magnitude and frequency of environmental noise may vary considerably over the course of a day and throughout the week. This variation is caused by changes in noise source activity, changing weather conditions, and the effect of seasonal vegetative cover.

Two measurements commonly used by Federal agencies to relate the time-varying quality of environmental noise to its known effects on people are the equivalent sound level (L_{eq}) and the average day-night sound level (L_{dn}). The L_{eq} is an average A-weighted sound level containing the same sound energy as the varying sound levels measured over a specific period of time. Annoyance from noise levels varies depending on the length of exposure and the time of day. The L_{dn} takes into account the duration and time the noise is encountered. Late night and early morning (10:00 p.m. to 7:00 a.m.) noise exposures are penalized +10 composite decibels (dB) to account for people's greater sensitivity to sound during the nighttime hours. Daytime noise levels (7:00 a.m. to 10:00 p.m.) are not adjusted when computing the 24-hour average L_{dn} value.

In 1974, the EPA published "Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety." This publication evaluates the effects of environmental noise with respect to health and safety. The document provides information for state and local governments to use in developing their own ambient noise standards. The EPA recommended that noise levels should not exceed an L_{dn} of 55 decibels on the A-weighted scale (dBA), the level which protects the public from indoor and outdoor activity interference. An L_{dn} of 55 dBA is equivalent to a continuous noise level of 48.6 dBA. We have adopted the EPA's L_{dn} noise level standard and have used it to evaluate noise impacts.

The State of Connecticut has established noise standards that set property line noise limits based on three general land use categories (Class A for noise sensitive uses, Class B for commercial uses, and Class C for industrial uses). Daytime and nighttime noise limits are set based on the land use category for the noise source and the land use category for the area affected by the noise source.

For an industrial (Class C) noise source affecting a residential (Class A) land use, the noise limits are 61 dBA during daytime hours and 51 dBA during nighttime hours.

New York does not have any state noise standards that would apply to pipeline construction activities. The Town of Brookhaven has a noise standard (Chapter 50 of the Brookhaven Code). Noise levels due to construction activities are exempt, but the standard prohibits construction activity between the hours of 10:00 p.m. and 7:00 a.m. on weekdays, and all hours on weekends and legal holidays. The Town of Riverhead has a noise ordinance which prohibits construction activities before 7:00 a.m. and after 8:00 p.m.

3.11.2.1 Existing Environment

Rural and agricultural areas typically have background noise conditions with an L_{dn} of 40 to 45 dBA. Background L_{dn} levels are often 45-55 dBA near roadways with moderate traffic volumes, but often exceed an L_{dn} of 60 dBA near major highways and interstates.

A noise monitoring study was conducted in the vicinity of the Cheshire Compressor Station on April 26 and April 27, 2001. Daytime and nighttime noise measurements were conducted for 20-minute periods at five noise sensitive areas (NSAs) near the compressor station site. Traffic noise from Interstate 691 and Route 84 were the dominant sources of ambient noise. Noise levels near the Cheshire Compressor Station are summarized in table 3.11.2-1.

TABLE 3.11.2-1
Existing Ambient Noise Levels Near the Proposed Cheshire Compressor Station

NSA	Distance/Direction From NSA	Daytime L_{eq}	Nighttime L_{eq}	Estimated L_{dn}
1. Diana Court	1,400 feet S	61	50	61
2. Johnson Avenue, SE of Site	1,200 feet SE	49	45	52
3. Brownstone Drive	4,200 feet SE	54	54	60
4. Birch Drive	1,200 feet N	56	49	57
5. Route 10, NW of Site	2,500 feet NW	66	55	66
6. Route 10 & Johnson Avenue, SW of Site	2,400 feet SW	61	50	61

Notes: noise conditions at location 6 assumed to be the same as at location 1.

N = North; S = South; SE = Southeast; SW = Southwest; NW = Northwest

Source: Islander East Pipeline Company. 2001. Cheshire Compressor Station Noise Technical Report. Prepared By TRC Environmental Corporation.

3.11.2.2 Environmental Consequences

Construction activity at the proposed Cheshire Compressor Station would last about 6 months. The noise level could vary considerably, depending upon the components being worked on. However, assuming a typical mix of construction equipment, onsite construction noise levels would be expected to vary between 80 and 90 dBA about 50 feet from the primary construction activity. The closest NSAs are about 1,200 feet from the compressor station site. At that distance, construction site noise levels would be reduced to about 60 dBA. This noise level would be about the same as existing daytime ambient noise levels. Construction activity would be limited to

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daytime periods, further reducing the disturbance potential from station construction. Compressor station construction noise impacts are not considered significant.

The Cheshire Compressor Station would be designed to minimize noise impacts on nearby properties. The gas turbine and compressor equipment would be housed in an acoustically treated structure, with noise silencers provided on both the exhaust stack and the air inlet. Operation of the Cheshire Compressor Station would produce small noise level increases at some of the closest NSAs. Table 3.11.2-2 summarizes the expected impact on noise levels near the Cheshire Compressor Station.

As indicated in table 3.11.2-2, NSA #2 would experience a 3 dBA increase in L_{dn} levels and NSA # 4 would experience a 1 dBA increase in L_{dn} levels. There would be no noticeable increase in noise levels at the other NSAs. In all cases, the incremental L_{dn} level attributable to the Cheshire Compressor Station would be less than the FERC guideline of 55 dBA. In addition, the hourly average noise levels produced by the Cheshire Compressor Station would be less than the 51 dBA limit set by the state noise standards. Consequently, noise impacts from operation of the Cheshire Compressor Station are not considered significant.

TABLE 3.11.2-2
Projected Ambient Noise Levels Near the Proposed Cheshire Compressor Station

NSA	Distance/Direction From NSA	Existing L_{dn}	Station L_{dn}	Total L_{dn}	Increase in L_{dn}
1. Diana Court	1,400 feet S	61	50	61	0
2. Johnson Avenue, SE of Site	1,200 feet SE	52	52	55	3
3. Brownstone Drive	4,200 feet SE	60	40	60	0
4. Birch Drive	1,200 feet N	57	52	58	1
5. Route 10, NW of Site	2,500 feet NW	66	44	66	0
6. Route 10 & Johnson Avenue, SW of Site	2,400 feet SW	61	45	61	0

Note: N=North, S=South, SE=Southeast, SW=Southwest, NW=Northwest

Source: Islander East Pipeline Company, 2001; Cheshire Compressor Station Noise Technical Report, Prepared by TRC Environmental Corporation.

However, in order to verify that noise levels from operation of the Cheshire Compressor Station are within our guidelines, we recommend that:

Algonquin should file a noise survey with the Secretary no later than 60 days after placing the Cheshire Compressor Station in service. If the noise attributable to the operation of the station at full load exceeds an L_{dn} of 55 dBA at any nearby NSAs, Algonquin should install additional noise controls to meet the level within 1 year of the in-service date. Algonquin should confirm compliance with this requirement by filing a second noise survey with the Secretary no later than 60 days after it installs the additional noise controls.

Meter stations and other aboveground facilities would be located at the Cheshire Compressor Station of in areas of open space and forested land use. Consequently, no significant noise impacts would be attributable to these facilities.

Pipeline construction would cause temporary increases in local noise levels due to equipment operation and pipeline testing activities. The noisiest stages of construction activity would be clearing and trenching of the pipeline corridor, and later backfilling of the pipeline trench. In between, assembly, inspection, and installation of the pipeline should generate lower noise levels. Construction activities normally would be limited to daytime hours, and the noisiest stages of construction activity would typically last no more than one week at any given location.

During the noisier stages of construction, average construction activity noise levels would probably exceed 70 dBA for locations within 300 feet of the construction site, and would be about 80 dBA for locations 100 feet from the active construction area. Construction activity noise levels should drop below 60 dBA at distances of 800 feet or more. There are 39 residential buildings and 15 commercial buildings within 50 feet of the pipeline construction work areas. Pipeline construction would result in short periods of high daytime noise levels at these properties. Because of the short duration of construction activities at any one location and because construction plans would be coordinated with individual property owners, pipeline construction noise impacts are not considered significant.

It is not yet clear whether any construction blasting would be required for pipeline construction in Connecticut. Some portions of the proposed pipeline corridor have rock outcrops or a shallow depth to bedrock. If normal construction equipment cannot clear, grade, and trench in these areas, then limited construction blasting may be necessary. Any blasting activity would adhere to all local, state, and Federal regulations, including noise requirements. Because the blasts would be small charges placed in drilled holes in the sub surface (i.e. bedrock), it is expected that noise generation from blasting would be minimal. Other potential impacts from blasting are discussed in section 3.1.1.2.

3.12 RELIABILITY AND SAFETY

The transportation of natural gas by pipeline involves some risk to the public in the event of an accident and subsequent release of gas. The greatest hazard is a fire or explosion following a major pipeline rupture.

Methane, the primary component of natural gas, is colorless, odorless, and tasteless. It is not toxic, but is classified as a simple asphyxiate, possessing a slight inhalation hazard. If breathed in high concentration, oxygen deficiency can result in serious injury or death. Mercaptan is added to natural gas for safety so that it can be detected by smell.

Methane has an ignition temperature of 1,000 degrees Fahrenheit and is flammable at concentrations between 5.0 percent and 15.0 percent in air. Unconfined mixtures of methane in air are not explosive. However, a flammable concentration within an enclosed space in the presence of an ignition source can explode. It is buoyant at atmospheric temperatures and disperses rapidly in air.

3.12.1 Safety Standards

The DOT is mandated to provide pipeline safety under Title 49, USC Chapter 601. The Research and Special Programs Administration's, Office of Pipeline Safety, administers the national regulatory program to ensure the safe transportation of natural gas and other hazardous materials by pipeline. It develops safety regulations and other approaches to risk management that ensure safety in the design, construction, testing, operation, maintenance, and emergency response of pipeline

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facilities. Many of the regulations are written as performance standards which set the level of safety to be attained and allow the pipeline operator to use various technologies to achieve safety. Research and Special Programs Administration ensures that people and the environment are protected from the risk of pipeline incidents. This work is shared with state agency partners and others at the Federal, state, and local level. Section 5(a) of the Natural Gas Pipeline Safety Act provides for a state agency to assume all aspects of the safety program for intrastate facilities by adopting and enforcing the Federal standards, while section 5(b) permits a state agency that does not qualify under section 5(a) to perform certain inspection and monitoring functions. A state may also act as DOT's agent to inspect interstate facilities within its boundaries; however, the DOT is responsible for enforcement action. The majority of the states have either 5(a) certifications or 5(b) agreements, while nine states act as interstate agents.

The DOT pipeline standards are published in Parts 190-199 of Title 49 of the CFR. Part 192 of 49 CFR specifically addresses natural gas pipeline safety issues. It does not, however, address other issues like siting and routing, bond issues, etc. These items, in part, are a matter of private negotiation between pipeline companies, landowners, and/or local government zoning boards. The Federal statutes which govern DOT's authority do not authorize DOT to regulate those activities. The FERC takes the Federal lead on issues regarding environmental impacts (which often affect siting and routing), financing, tariffs, etc.

Under a Memorandum of Understanding on Natural Gas Transportation Facilities (Memorandum) dated January 15, 1993 between the DOT and the FERC, the DOT has the exclusive authority to promulgate Federal safety standards used in the transportation of natural gas. Section 157.14(a)(9)(vi) of the FERC's regulations require that an applicant certify that it will design, install, inspect, test, construct, operate, replace, and maintain the facility for which a certificate is requested in accordance with Federal safety standards and plans for maintenance and inspection, or shall certify that it has been granted a waiver of the requirements of the safety standards by the DOT in accordance with section 3(e) of the Natural Gas Pipeline Safety Act. The FERC accepts this certification and does not impose additional safety standards other than the DOT standards. If the Commission becomes aware of an existing or potential safety problem, there is a provision in the Memorandum to promptly alert DOT. The Memorandum also provides for referring complaints and inquiries made by state and local governments and the general public involving safety matters related to pipeline under the Commission's jurisdiction.

The FERC also participates as a member of the DOT's Technical Pipeline Safety Standards Committee which determines if proposed safety regulations are reasonable, feasible, and practicable.

We received several comments regarding the safety of the pipeline system both onshore and offshore, and more specifically the proximity of the pipe to the schools, communities, and the railroad. The pipeline and aboveground facilities associated with the Islander East Pipeline Project must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR Part 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion.

Pipelines are built in areas of varying population density throughout the United States. Because avoidance of populated areas is not always possible, the standards in the Federal regulations become more stringent as the human population density increases.

Part 192 also defines area classifications, based on population density in the vicinity of the pipeline, and specifies more rigorous safety requirements for populated areas. The class location unit is an area that extends 220 yards on either side of the centerline of any continuous one mile length of pipeline. The four area classifications are defined as follows:

- Class 1: Location with 10 or fewer buildings intended for human occupancy.
- Class 2: Location with more than 10 but less than 46 buildings intended for human occupancy.
- Class 3: Location with 46 or more buildings intended for human occupancy or where the pipeline lies within 100 yards of any building, or small well-defined outside area occupied by 20 or more people during normal use.
- Class 4: Location where buildings with four or more stories aboveground are prevalent.

Class locations representing more populated areas require higher safety factors in pipeline design, testing, and operation. Pipelines constructed on land in Class 1 locations must be installed with a minimum depth of cover of 30 inches in normal soil and 18 inches in consolidated rock. All pipelines installed in navigable rivers, streams, and harbors must have a minimum cover of 48 inches in soil or 24 inches in consolidated rock. Offshore pipelines constructed in less than 12 feet of water, as measured from the mean low tide, must have a minimum cover of 36 inches in soil and 18 inches in consolidated rock. Offshore pipelines constructed in 12 to 200 feet of water, as measured from the mean low tide, must be installed so that the top of the pipe is below the natural bottom unless the pipeline is protected by some other means such as a heavy concrete coating.

Class 2, 3, and 4 locations, as well as drainage ditches of public roads and railroad crossings, require a minimum cover of 36 inches in normal soil and 24 inches in consolidated rock. Class locations also specify the maximum distance to a sectionalizing block valve (e.g., 10.0 miles in Class 1, 7.5 miles in Class 2, 4.0 miles in Class 3, and 2.5 miles in Class 4). Pipe wall thickness and pipeline design pressures, hydrostatic test pressures, maximum allowable operating pressure, inspection and testing of welds, and frequency of pipeline patrols and leak surveys must also conform to higher standards in more populated areas. Preliminary class locations for the Islander East Pipeline Project would be available once the pipeline design has been undertaken to determine the pipeline centerline with respect to other structures or manmade features.

Part 192 prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under section 192.615, each pipeline operator must also establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for:

- Receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- Establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;
- Emergency shutdown of system and safe restoration of service;

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- Making personnel, equipment, tools, and materials available at the scene of an emergency; and
- Protecting people first and then property, and making them safe from actual or potential hazards.

Part 192 requires that each operator must establish and maintain liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials. Algonquin and Islander East would provide the appropriate training to local emergency service personnel before the pipeline is placed in service. No additional specialized local fire protection equipment would be required to handle pipeline emergencies.

3.12.2 Pipeline Accident Data

Several commentors were concerned about the possibility of occurrence of a catastrophic event such as an explosion. Since February 9, 1970, 49 CFR Part 191 has required all operators of transmission and gathering systems to notify the DOT of any reportable incident and to submit a report on form F7100.2 within 20 days. Reportable incidents are defined as any leaks that:

- Caused a death or personal injury requiring hospitalization;
- Required taking any segment of transmission line out of service;
- Resulted in gas ignition;
- Caused estimated damage to the property of the operator, or others, or both, of a total of \$5,000 or more;
- Required immediate repair on a transmission line;
- Occurred while testing with gas or another medium; or
- In the judgment of the operator was significant, even though it did not meet the above criteria.

The DOT changed reporting requirements after June 1984 to reduce the amount of data collected. Since that date, operators must only report incidents that involve property damage of more than \$50,000, injury, death, release of gas, or that are otherwise considered significant by the operator. Table 3.12.2-1 presents a summary of incident data for the 1970 to 1984 period, as well as more recent incident data for 1991 through 2000, recognizing the difference in reporting requirements. The 14.5-year period from 1970 through June 1984, which provides a larger universe of data and more basic report information than subsequent years, has been subject to detailed analysis, as discussed in the following sections.^{1/}

^{1/} Jones, D.J., G.S. Kramer, D.N. Gideon, and R.J. Eiber, 1986. "An Analysis of Reportable Incidents for Natural Gas Transportation and Gathering Lines 1970 Through June 1984." NG-18 Report No. 158, Pipeline Research Committee of the American Gas Association.

During the 14.5-year period, 5,862 service incidents were reported over the more than 300,000 total miles of natural gas transmission and gathering systems nationwide. Service incidents, defined as failures that occur during pipeline operation, have remained fairly constant over this period with no clear upward or downward trend in annual totals. In addition, 2,013 test failures were reported. Correction of test failures removed defects from the pipeline before operation.

Additional insight into the nature of service incidents may be found by examining the primary factors that caused the failures. Table 3.12.2-1 provides a percentage distribution of the causal factors as well as the annual frequency of each factor per 1,000 miles of pipeline in service.

The dominant incident cause is outside forces, constituting 53.5 percent of all service incidents from 1970 through June 1984. Outside force incidents result from the encroachment of mechanical equipment such as bulldozers and backhoes; earth movements due to soil settlement, washouts, or geologic hazards; weather effects such as winds, storms, and thermal strains; and willful damage.

Landowners in the Juniper Point, Connecticut community have indicated that barges at the Tilcon Inc. site have overturned and dumped their loads of rock several times in the last few years, including one sunken barge in the area. The landowners are concerned that an overturned barge would damage the pipeline, causing a rupture. Using the HDD construction method to install the pipeline in the area, the pipeline will be located at a minimum depth of over 80 feet below sea floor at the Tilcon Channel crossing. At this depth, the pipe would be located well within sub sea bedrock throughout the channel crossing area providing more than adequate protection over the pipeline in the event of an overturned barge or dumped rock in the area.

TABLE 3.12.2-1
Natural Gas Service Incidents by Cause

Cause	Incidents per 1,000 Miles of Pipeline (percentage)	
	1970-1984	1991-2000
Outside force	0.70 (53.5)	0.10 (39.3)
Corrosion	0.22 (16.6)	0.06 (23.25)
Construction or material defect	0.27 (21.7)	0.03 (12.7)
Other	0.11 (8.2)	0.06 (24.2)
TOTAL	1.30	0.25

We received a comment from a resident of Branford, Connecticut, stating that his family business entails the use of large equipment and excavators at the location of the proposed pipeline. He was concerned about his safety and his ability to continue using his land for his business. The useable portion of the land owner's property is limited to a thin strip of land located between the railroad and a large wetland area. In accordance with permit restrictions on the use of this land, a 1.5 to 2-foot berm has been placed along the usable area, approximately 20 feet from the edge of the wetland, to minimize runoff and sedimentation into the wetland. Islander East is proposing a minor variation to place the proposed pipeline under this berm to minimize any impacts to the future use of the property. This is acceptable since the land owner is restricted from excavating or operating equipment on or west of the berm. Therefore, there should be no safety implications from the landowner's continued use of the property.

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Table 3.12.2-2 shows that human error in equipment usage was responsible for approximately 75 percent of outside forces incidents. Since April 1982, operators have been required to participate in "One Call" public utility programs in populated areas to minimize unauthorized excavation activities in the vicinity of pipelines. The "One Call" program is a service used by public utilities and some private sector companies (e.g., oil pipelines and cable television) to provide preconstruction information to contractors or other maintenance workers on the underground location of pipes, cables, and culverts. Data from 1991 through 2000 show that the portion of incidents caused by outside forces has decreased to 39.3 percent.

TABLE 3.12.2-2
Outside Forces Incidents by Cause (1970-1984)

Cause	Percent
Equipment operated by outside party	67.1
Equipment operated by or for operator	7.3
Earth movement	13.3
Weather	10.8
Other	1.5

The pipelines included in the data set in table 3.12.2-1 vary widely in terms of age, pipe diameter, and level of corrosion control. Each variable influences the incident frequency that may be expected for a specific segment of pipeline.

The frequency of service incidents is strongly dependent on pipeline age. While pipelines installed since 1950 exhibit a fairly constant level of service incident frequency, pipelines installed before that time have a significantly higher rate, partially due to corrosion. Older pipelines have a higher frequency of corrosion incidents, since corrosion is a time-dependent process. Further, new pipe generally uses more advanced coatings and cathodic protection to reduce corrosion potential.

Older pipelines have a higher frequency of outside forces incidents partly because their location may be less well known and less well marked than newer lines. In addition, the older pipelines contain a disproportionate number of smaller diameter pipelines, which have a greater rate of outside forces incidents. Small diameter pipelines are more easily crushed or broken by mechanical equipment or earth movements.

Table 3.12.2-3 clearly demonstrates the effectiveness of corrosion control in reducing the incidence of failures caused by external corrosion. The use of both an external protective coating and a cathodic protection system, required on all pipelines installed after July 1971, has significantly reduced the rate of failure compared to unprotected or partially protected pipe. The data shows that bare, cathodically protected pipe actually has a higher corrosion rate than unprotected pipe. This anomaly reflects the retrofitting of cathodic protection to actively corroding spots on pipes.

We received a comment from the Connecticut Seafood Council voicing their concern about potential environmental impacts in Sound resulting from cathodic protection systems similar to those that have been reported from the electromagnetic fields (EMF) generated by electric transmission lines. We are not aware of, nor anticipate, any health hazards from the low-power, direct current output of cathodic systems. We are aware of media reports regarding the health effects of EMF which relate to alternating-current power transmission systems, not direct-current systems. Electric power transmission lines transmit alternating current. The transmission of alternating current

generates fluctuating EMF. Direct-current systems do not generate fluctuating EMF. Also, the elements (ground beds and rectifiers) of the cathodic protection system would be designed and located to control the cathodic protection direct-current so that the effect on any other buried metallic structures and the marine environment would be negligible.

TABLE 3.12.2-3
External Corrosion by Level of Control (1970-1984)

Corrosion Control	Incidents per 1,000 miles per Year
None-bare pipe	0.42
Cathodic protection only	0.97
Coated only	0.40
Coated and cathodic protection	0.11

3.12.3 Impact on Public Safety

The service incident data summarized in table 3.12.2-1 include pipeline failures of all magnitudes with widely varying consequences. Approximately two-thirds of the incidents were classified as leaks, and the remaining third classified as ruptures, implying a more serious failure. Fatalities or injuries occurred in 4 percent of the service incidents reported in the 14.5 year period from 1970 through June 1984.

Table 3.12.3-1 presents the average annual fatalities that occurred on natural gas transmission and gathering lines from 1970 to 2000. Fatalities between 1970 and June 1984 have been separated into employees and nonemployees, to better identify a fatality rate experienced by the general public. Of the total 5.0 nationwide average, fatalities among the public averaged 2.6 per year over this period. The simplified reporting requirements in effect after June 1984 do not differentiate between employees and nonemployees. However, the data show that the total annual average for the period 1984 through 2000 decreased to 4.2 fatalities per year. Subtracting two major offshore incidents in 1989, which do not reflect the risk to the onshore public, yields a total annual rate of 3.1 fatalities per year for this period.

The nationwide totals of accidental fatalities from various manmade and natural hazards are listed in table 3.12.3-2 in order to provide a relative measure of the industry-wide safety of natural gas pipelines. Direct comparisons between accident categories should be made cautiously, since individual exposures to hazards are not uniform among all categories. Nevertheless, the average 3.1 public fatalities per year is relatively small considering the more than 300,000 miles of transmission and gathering lines in service nationwide. Furthermore, the fatality rate is approximately two orders of magnitude (100 times) lower than the fatalities from natural hazards such as lightning, tornados, floods, earthquakes, etc.

The available data show that natural gas pipelines continue to be a safe, reliable means of energy transportation. Based on approximately 311,000 miles in service, the rate of public fatalities for the nationwide mix of transmission and gathering lines in service is 0.01 per year per 1,000 miles of pipeline. Using this rate, the Islander East Pipeline Project would result in a public fatality about every 2,204 years. Considering that 22.8 miles of the total 50.4 miles of the pipeline is located offshore, the onshore portion alone might result in a fatality every 4,026 years. This would represent a slight increase in risk to the nearby public.

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**TABLE 3.12.3-1
Annual Average Fatalities - Natural Gas Transmission and Gathering Systems ^{a/, b/}**

Year	Employees	Nonemployees	Total
1970-June 1984	2.4	2.6	5.0
1984-2000 ^{c/}	-	-	4.2
1984-2000 ^{c/}	-	-	3.1 ^{d/}

^{a/} 1970 through June 1984 - American Gas Association, 1986.
^{b/} DOT Hazardous Materials Information System.
^{c/} Employee/nonemployee breakdown not available after June 1984.
^{d/} Without 18 offshore fatalities occurring in 1989 - 11 fatalities resulted from a fishing vessel striking an offshore pipeline and 7 fatalities resulted from explosion on an offshore production platform.

**TABLE 3.12.3-2
Nationwide Accidental Deaths ^{a/}**

Type of Accident	Fatalities
All accidents	90,523
Motor vehicles	43,649
Falls	14,985
Drowning	3,488
Poisoning	9,510
Fires and burns	3,791
Suffocation by ingested object	3,206
Tornado, flood, earthquake, etc. (1984-93 average)	181
All liquid and gas pipelines (1978-87 average) ^{b/}	27
Gas transmission and gathering lines Nonemployees only (1970-84 average) ^{c/}	2.6

^{a/} All data, unless otherwise noted, reflects 1996 statistics from the U.S. Department of Commerce, Bureau of the Census, "Statistical Abstract of the United States 118th Edition."
^{b/} U.S. Department of Transportation, "Annual Report on Pipeline Safety - Calendar Year 1987."
^{c/} American Gas Association, 1986.

3.13 CUMULATIVE IMPACTS

Cumulative impacts may result when the environmental effects associated with a proposed project are superimposed on, or added to, either temporary (construction related) or permanent (operation related) impacts associated with past, present, or reasonably foreseeable future projects. Although the individual impact of each separate project might not be significant, the additive or synergistic effects of multiple projects could be significant.

Existing conditions in the vicinity of both the onshore and offshore portions of the proposed Islander East Pipeline Project reflect the extensive changes brought about by long-term human occupancy and use of the project area. For example, onshore native vegetation communities in New Haven and Suffolk Counties have been substantially altered from their pre-Euro-American settlement condition by timber harvest, agricultural practices, introduction of non-native species, and commercial/industrial and residential developments, while offshore fisheries have been affected by commercial harvest and physical alteration of onshore rivers and streams used by anadromous species.

Table 3.13-1 lists present or reasonably foreseeable future projects or activities that may cumulatively or additively impact resources that would be affected by construction and operation of the Islander East Pipeline Project. Projects and activities included in this analysis are primarily those located near areas directly affected by construction of the Islander East Pipeline Project. Nonjurisdictional electric generation facilities that would be built due, at least in part, to construction of the Islander East Pipeline Project are also included in our analysis because the pollutants emitted from these facilities could potentially have a cumulative effect on the region's air quality. Although several of these projects are in response to the growing demand for energy and industrial services, not all of the projects are likely to be constructed.

The potential impacts associated with these projects that are most likely to be cumulatively significant are related to water quality, vegetation and wildlife (including federally and state-listed endangered and threatened species), marine resources, land use, visual resources, socioeconomics, air quality, and noise.

Water Quality

Increasing human population densities and changes in land use would be expected to continue to contribute to the long-term trend of watershed and water quality degradation. For example, wetlands have been drained or otherwise modified; stormwater runoff may carry sediments, fertilizers, pesticides, oils, greases or other chemicals; and shallow groundwater may be contaminated from surface infiltration as well as septic tank and greywater leakages from residential sites. In comparison, water quality impacts from pipeline construction would be temporary until restoration was completed. The geographic extent and duration of disturbances caused by construction of the Islander East Pipeline Project would be insignificant in magnitude compared to the cumulative degradation associated with present and foreseeable future land-use activities (e.g., commercial/industrial/residential development and agricultural activities).

Vegetation and Wildlife

When projects are constructed at the same time or close to the same time, they would have a cumulative impact on vegetation and wildlife living in the area where the projects would be built. Several of the projects listed in table 3.13-1 would have an effect on the vegetation and wildlife depending on the amount of land disturbed by the projects. Onshore vegetation communities/wildlife habitats have already been substantially altered in the vicinity of the proposed Islander East Pipeline Project. The projects listed above would continue the long-term change in land use in the area from historically forested, to primarily agricultural, to increasingly urban/suburban and commercial/industrial uses. Reduction and fragmentation of native vegetation communities would be expected to continue into the future. However, the magnitude of the contribution to this impact by the Islander East Pipeline Project would be minimal because the project would be primarily located in a corridor supporting other pipeline, transmission line or transportation facilities. Of the approximately 513 acres disturbed during construction of the onshore portion of the Islander East Pipeline Project, about 195 acres would remain in a permanent right-of-way. About 132 acres of woodland, of which 74 acres would be permanent right-of-way, would be affected for the long term, and only the permanent right-of-way would be maintained in an herbaceous condition for the life of the project.

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**TABLE 3.13-1
Resource Areas Most Likely to be Cumulatively Affected by Ongoing and Reasonably
Foreseeable Future Projects**

Ongoing Activities	Description	Primary Environmental Attributes						
		Water Quality	Vegetation & Wildlife	Marine Resources	Land Use	Socio-economics	Air Quality	Noise
Residential/Commercial	Various traffic, schools, local business, and public service activities	X	X		X	X	X	X
Industrial	Operation of industrial facilities e.g., shipping, quarrying, existing utilities	X	X	X	X	X	X	X
Recreational/Commercial Fishing	Boating, biking, hiking, fishing, including shellfisheries, tourism	X		X	X	X		
Agricultural	Practices including management of pastures and cropland (corn, blueberries)	X	X		X	X		
Future Projects	Description							
Brookhaven Energy	580 MW gas fueled power plant in industrial zone on Long Island		X		X	X	X	X
AES Power Plant	500 MW combined-cycle power plant in industrial park on Long Island		X		X	X	X	X
Long Island Lateral	Gas transmission pipeline from Massachusetts to Connecticut to Long Island	X	X	X	X	X	X	X
Eastern Long Island	Gas transmission pipeline from Milford, CT to Shoreham, NY	X	X	X	X	X	X	X
New Haven/Shoreham Cable	24 miles high voltage and fiber optic cable from New Haven, CT to Brookhaven, NY		X	X	X	X		X

Marine Resources

The nearshore marine habitat along Connecticut shore has been identified as one of the most environmentally important portions of the Islander East offshore route. The HDD method would be used to install the pipeline under the active shellfish leases, thus minimizing potential disturbances to this area.

Construction of the Islander East Pipeline Project would be expected to temporarily add to sediment suspension and drift that might also be occurring as a result of activities such as commercial fishing (e.g., bottom trawling). Construction effects would be comparatively short term (a few weeks) compared to seasonal or on-going bottom disturbances such as commercial fishing.

Visual and acoustic disturbances associated with pipeline construction and operation may add to other commercial, public, and recreational vessel disturbances to affect marine mammals, fish, birds, and invertebrates. The magnitude of the impact would probably be insignificant relative to the total marine environment available to, and used by, these species, particularly given the short-term nature of the construction activities.

Land Use

The Islander East Pipeline Project and several of the other foreseeable future projects could result in both temporary and permanent changes to current land uses. As discussed above, much of the land that would be disturbed by construction is adjacent to existing utility or transportation corridors. These disturbed by construction would revert to preconstruction land uses, except for forested areas, shortly after construction is completed. Construction of aboveground facilities (e.g., the Cheshire Compressor Station and other foreseeable projects such as the power plants and the Milford Compressor Station) could cumulatively reduce the amount of forested, agricultural and open lands in those areas.

Socioeconomics

Present and reasonably foreseeable future projects could cumulatively impact socioeconomic conditions in the project area. Employment, housing, infrastructure and public services, and traffic could experience beneficial and detrimental effects.

Employment

The projects considered here would have cumulative effects on employment during construction. Islander East estimates that the onshore and offshore workforce would comprise about 1,000 construction personnel. Although Islander East assumes that most of the construction workers would be the selected from the contractor's existing employee base, some qualified individuals would be hired from local labor pools. The construction of the power plants would additively increase demand for labor in the area.

Permanent employment would increase slightly in the project area as a result of the various planned projects. Other projects such as the two power plants would also result in permanent jobs for people in the area.

Housing

As discussed in section 3.10.2, there is a good supply of housing and temporary accommodations in the project area. Employees that are hired locally would be expected to already have housing, which would reduce the overall demand from the pipeline workforce. Although available housing near the project area would be sufficient to accommodate the expected workforce of the project, the proposed construction schedule for the project could coincide with other demands for housing and temporary accommodations from tourism, seasonal agricultural harvests, and other construction projects. Because the demand (in both numbers and time) from these other users would be influenced by other construction schedules, weather, and economic conditions, such demand would be unpredictable.

Infrastructure and Public Services

The cumulative impact of the Islander East Pipeline Project and other projects and activities on infrastructure and public services would depend on the number of projects under construction at one time. Police, fire, and emergency service personnel may have difficulty in meeting incremental demands from several simultaneous projects. This problem would last for the length of construction and could be mitigated by the projects' various proponents providing their own personnel to augment

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the local capability or by providing funding or training for local personnel. There would be no long-term cumulative effect on infrastructure and public services.

Traffic

Where installation of the Islander East pipeline occurs at road crossings, traffic could be temporarily disrupted or delayed. Islander East would use traffic control measures (e.g., flag persons, signs, lights, and barriers) to ensure safety and to minimize traffic congestion. Indirectly, workers' cars and construction trucks and equipment being added to the regular traffic could contribute to traffic congestion, particularly if several projects are being constructed at the same time in the same locations.

Air Quality and Noise

Most of the reasonably foreseeable future projects and activities would produce noise and air contaminants from heavy equipment engines and dust during construction. These effects could add to the ongoing industrial, residential and agricultural activities as well as traffic in the project area. Because the impact of noise is highly localized and attenuates quickly as the distance from the noise source increases, cumulative impacts associated with construction would be unlikely unless one or more of the projects occur at the same time in the same location. However, even short-term additional noise during construction could, for example, create enough disturbance to nesting birds to constitute a potential adverse impact. The majority of these impacts would be limited to the period of construction.

Over the long term, the Islander East Pipeline Project would directly add little to existing levels of air pollution. The Cheshire Compressor Station is not a major source of air emissions. Emissions from the compressor station operation would be minimized by the implementation of BACT for each air emission unit. Therefore, the Islander East Pipeline Project itself would add little to current air pollution levels. Indirectly, the Islander East Pipeline Project could result in a cumulative impact on the region's air quality by providing natural gas to customers on Long Island. For example, the Brookhaven Energy Project and the AES Endeavor Power Plant would receive natural gas from the Islander East Pipeline Project. The Brookhaven Energy Project is presently under review by New York. The AES Endeavor Power Plant is still in the planning stage.

The burning of natural gas in new power plants could increase ambient pollutant concentrations in the regional airshed. However, the demand for additional power in the project area cannot be met by currently available non-polluting sources of energy. Because natural gas is a relatively clean-burning fuel, the Islander East Pipeline Project could minimize possible impacts on air quality.

United States air quality regulations require new power plants to obtain the appropriate permits. Issuance of the necessary approvals and permits for the new and modified power plants implies that the associated impacts on air quality would be acceptable in the vicinity of the permitted facility. For example, in the United States any major air emission source would have to demonstrate compliance with the NAAQS based on potential emissions.