



ISLANDER EAST PIPELINE PROJECT

Connecticut Department of Environmental Protection 401 Water Quality Certificate #200300937

Response to the CTDEP May 5, 2003 Request for Additional Information

Volume 1 of 2

PREPARED BY



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8. The Thimble Islands region is generally considered to be an area of exceptional marine habitat diversity. Please provide the Department with a thorough evaluation of the short and long-term impacts, both direct and indirect, of constructing and operating a pipeline in this unique area of the Sound.

Although the Thimbles Islands region may be an area of exceptional marine habitat diversity, it would be incorrect to characterize the areas that are crossed by the pipeline route as such. The pipeline route was selected to avoid highly sensitive or exceptional habitats. Islander East has completed and filed with the CTDEP numerous studies along the pipeline route to characterize the existing environment, including: side scan sonar surveys, vibratory coring, diver surveys, grab sampling, and video survey. Based on the results of these studies, the pipeline route can be characterized as crossing primarily soft sediments. Video and grab sampling analysis conducted for the project indicate that the organisms inhabiting these soft sediments are fairly typical and common throughout Long Island Sound. As described in the report entitled *Analysis of Video Records of Sea Floor Features Collect by Remotely Operated Vehicle Along the Proposed Islander East Gas Pipeline Corridor in Long Island Sound* (Zajac, July 2002), provided to the CTDEP on September 10, 2002, the video results indicate that there is a greater diversity of biologically generated sediment surface features in the nearshore area where disturbances are more common but a higher density of total features in deeper waters. As presented in the report entitled *Macrobenthic Community Structure Along the Proposed Islander East Gas Pipeline Route in Long Island Sound* (Pellegrino January 2002), which was provided to the CTDEP on February 13, 2002 and July 11, 2002, grab sampling conducted for the project revealed similar number of taxa between nearshore and offshore sample stations, an average of 18.7 vs. 17.6 per sample, respectively. However, nearshore samples had nearly double the number of individuals compared to offshore samples, an average of 155 versus 88 per sample, respectively. These soft-bottom sediment results can be interpreted as indicative of disturbed areas where organisms with rapid reproduction and high population numbers (r-selected species) dominate over slower-growing, larger organisms with lower reproductive rates (k-selected species).

Direct impacts on the dredged trench section will be limited to the excavated trench because sediment excavated from the trench will be placed on barges. The use of dredging with spud moored barges will avoid direct impacts to rocky reefs between MP 10.9 and MP 12.0, such as Dick Rocks (which is located approximately 1,000 feet east of the pipeline route). In waters deeper than 20 feet where the subsea plow will be used, direct impacts would occur in the area encompassing the trench, the temporary spoil pile generated by the plow, and the areas disturbed by anchor strikes and cable sweeps. If Browns, Wheaton, and East Reefs are considered to be part of the Thimble Islands area, the route was adjusted to the west to avoid them and hence plowing does not really affect the Thimble Islands area.

Finfish and other mobile species will be minimally affected by the project because they will largely avoid the construction area during trenching, pipelaying, and backfilling operations. Some individuals inhabiting the seabed in the direct path of the plow may experience mortality or injury, however, since the species represented by these individuals are common, these losses will not be significant. Additionally, the potential losses will be temporary and restoration will begin during the next reproductive season

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after construction through the recruitment of planktonic larva and the colonization of the disturbed areas by organisms moving from adjacent locations (Newell *et al.*, 1998).

Direct impacts associated with the anchoring process will also be temporary and essentially outside or further offshore of the Thimble Islands area. Anchor strikes will generally result in scattered small (100 to 500 square feet), shallow (1 to 3 feet) depressions that will result in seafloor relief diversity. Because the anchors will be lifted out upside down (from a pennant wire off their bottom rather than the anchor shank), the areas affected by the anchors will mostly be filled during anchor retrieval. Cumulatively for the project, the area impacted by the anchors is small compared to the area of Long Island Sound. Additionally because of the non-contiguous and small footprint of the strikes they will be rapidly colonized by larval recruitment and colonization by organisms from adjacent areas (Newell *et al.*, 1998). The NW Reef, located at the eastern edge of the anchor corridor at MP 12.5, will be avoided because its low tide water depths prevent access by the anchor handling tugs.

The anchoring process could also impact and result in a short-term loss of attached epifauna and macroalgae on the small bedrock/boulder reefs located between MP 12.0 and MP 12.7. However, the fundamental characteristics of these habitats will remain. The loss of epifauna and macroalgae would be temporary as colonization will occur from settlement and recruitment as well as invasion from undisturbed portions of the patch reefs. Many researchers have shown that creation of islands, disturbance events, and creation of habitat patches, result in increases in diversity and some have documented that openings on rock surfaces caused by disturbance are rapidly occupied by opportunistic species and that in shallow water systems this process results in a variety of successional units or patches on rock surfaces. This successional variety imparts species diversity to these habitats.

Indirect impacts associated with offshore activities would include elevated levels of suspended sediments and increased deposition of sediments in the areas immediately adjacent to construction activities and the release of drilling fluid during the pilot hole and pullback phases of the HDD installation. In section 3.3.3.2 of the final EIS, HDD Fluids, the FERC discusses in depth the possibility of an increase in the turbidity of Long Island Sound due to releases of drilling fluids at the HDD exit point. The final EIS concludes that "because most of the drilling fluids would be expected to be more dense than sea water, they would sink to the seafloor and disperse in the transition basin. Therefore, it is expected that impacts to water quality would be short-term in nature and likely confined to the transition basin". However, because Islander East intends to excavate the HDD exit area after the completion of the pilot hole, any drilling fluid that is released during this phase will be recovered when the excavated material from the HDD exit area is placed on barges. Excess drilling fluid released at the HDD exit area will accumulate in the bottom of the excavation approximately 20 feet below the sea floor. Other indirect effects may include a localized increase in the diversity of species in the vicinity of the trench after construction resulting from the successional recolonization of the disturbed seabed by marine organisms.

Depositional effects are expected to be essentially non-existent beyond the immediate proximity of the trench and will not affect the local populations of any marine organisms. Modeling conducted for the project indicates that between MPs 10.9 and 12.0 (areas to

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be dredged), a small amount of sediment will go into suspension and fall out within 50 feet of the trench (Applied Science Associates ("ASA"), 2002a and 2003b). An even smaller fraction of very fine sediments will go into longer term suspension and become indistinguishable from the background levels present in Long Island Sound. Because the dredging will move along the route, organisms inhabiting the seafloor will only be exposed to this localized increase in sediment for a brief time. At the HDD exit area, trenching will result in minimal sediment suspension. Sediment transport modeling has shown that deposition resulting from dredge operations at the exit point will be localized (within a few hundred feet) and of minimal depth (less than a few millimeters). Given the episodic nature of natural storm events that stir up considerable sediment loads in shallow water areas of the Connecticut shoreline, most organisms have adaptive mechanisms to survive and will merely experience the dredged suspended sediments as one more event out of the many experienced over the course of their lifetime.

Based on the construction methods involving dredged spoil placement on barges and offsite disposal, HDD drilling fluid capture, and mechanical plowing, as shown by the most recent sediment transport and deposition modeling performed and reported in ASA, 2002a and 2002b, there are de minimis impacts to the marine resources of the Thimble Islands area outside of the pipeline corridor. In fact, suspended sediments are anticipated to be at elevated levels above background only within short distances from the construction activities, which are essentially outside of the islands. Any localized impacts that do occur as a result of suspended sediments and deposition can be divided into two categories, water column affects and benthic affects. The suspended sediment affects in the water column are temporary in the vicinity of the individual construction activities involving sediment disturbance. The benthic sediment affects will be limited to within 50 to 100 feet of the construction activity. These small area/temporary affects will have minimal impacts on local populations of benthic and pelagic species and their habitats in the Thimble Islands area.