

For Office Use Only
 Executive Office of Environmental Affairs

EOEA No.: **12937**
 MEPA Analyst: **Arthur Pugsley**
 Phone: 617-626-**1029**

ENF Environmental Notification Form

The information requested on this form must be completed to begin MEPA Review in accordance with the provisions of the Massachusetts Environmental Policy Act, 301 CMR 11.00.

Project Name: Ellisville Inlet Relocation		
Street: Barrier Beach Fronting 201 Ellisville Road		
Municipality: Plymouth	Watershed: South Coastal	
Universal Transverse Mercator Coordinates: 372509E, 4633182N	Latitude: 41°50'25" Longitude: 70°32'08"	
Estimated commencement date: Feb 2003	Estimated completion date: 12/2003	
Approximate cost: \$20,000	Status of project design: 100 %complete	
Proponent: Vlad Hruby		
Street: 486 Quinobequin Road		
Municipality: Waban	State: MA	Zip Code: 02468
Name of Contact Person From Whom Copies of this ENF May Be Obtained: John Ramsey		
Firm/Agency: Applied Coastal	Street: 776 Falmouth Road, Suite A-1	
Municipality: Mashpee	State: MA	Zip Code: 02649
Phone: 508-539-3737	Fax: 508-539-3739	E-mail: jramsey@appliedcoastal.com

- Does this project meet or exceed a mandatory EIR threshold (see 301 CMR 11.03)?
 Yes No
- Has this project been filed with MEPA before?
 Yes (EOEA No. _____) No
- Has any project on this site been filed with MEPA before?
 Yes (EOEA No. _____) No
- Is this an Expanded ENF (see 301 CMR 11.05(7)) requesting:
- a Single EIR? (see 301 CMR 11.06(8)) Yes No
 - a Special Review Procedure? (see 301 CMR 11.09) Yes No
 - a Waiver of mandatory EIR? (see 301 CMR 11.11) Yes No
 - a Phase I Waiver? (see 301 CMR 11.11) Yes No

Identify any financial assistance or land transfer from an agency of the Commonwealth, including the agency name and the amount of funding or land area (in acres): N/A

Are you requesting coordinated review with any other federal, state, regional, or local agency?
 Yes (Specify _____) No

List Local or Federal Permits and Approvals: Plymouth Conservation Commission Order of Conditions, 401 Water Quality Certification, Chapter 91

Which ENF or EIR review threshold(s) does the project meet or exceed (see 301 CMR 11.03):

- | | | |
|------------------------------------------|--------------------------------------------------|----------------------------------------------------------------------|
| <input type="checkbox"/> Land | <input checked="" type="checkbox"/> Rare Species | <input checked="" type="checkbox"/> Wetlands, Waterways, & Tidelands |
| <input type="checkbox"/> Water | <input type="checkbox"/> Wastewater | <input type="checkbox"/> Transportation |
| <input type="checkbox"/> Energy | <input type="checkbox"/> Air | <input type="checkbox"/> Solid & Hazardous Waste |
| <input checked="" type="checkbox"/> ACEC | <input type="checkbox"/> Regulations | <input type="checkbox"/> Historical & Archaeological Resources |

Summary of Project Size & Environmental Impacts	Existing	Change	Total	State Permits & Approvals
LAND				<input checked="" type="checkbox"/> Order of Conditions <input type="checkbox"/> Superseding Order of Conditions <input checked="" type="checkbox"/> Chapter 91 License <input checked="" type="checkbox"/> 401 Water Quality Certification <input type="checkbox"/> MHD or MDC Access Permit <input type="checkbox"/> Water Management Act Permit <input type="checkbox"/> New Source Approval <input type="checkbox"/> DEP or MWRA Sewer Connection/ Extension Permit <input type="checkbox"/> Other Permits <i>(including Legislative Approvals) – Specify:</i>
Total site acreage	0.6			
New acres of land altered		0		
Acres of impervious area	0	0		
Square feet of new bordering vegetated wetlands alteration		0		
Square feet of new other wetland alteration		26,500		
Acres of new non-water dependent use of tidelands or waterways		0		
STRUCTURES				
Gross square footage				
Number of housing units				
Maximum height (in feet)				
TRANSPORTATION				
Vehicle trips per day				
Parking spaces				
WATER/WASTEWATER				
Gallons/day (GPD) of water use				
GPD water withdrawal				
GPD wastewater generation/ treatment				
Length of water/sewer mains (in miles)				

CONSERVATION LAND: Will the project involve the conversion of public parkland or other Article 97 public natural resources to any purpose not in accordance with Article 97?

- Yes (Specify _____) No

Will it involve the release of any conservation restriction, preservation restriction, agricultural preservation restriction, or watershed preservation restriction?

- Yes (Specify _____) No

RARE SPECIES: Does the project site include Estimated Habitat of Rare Species, Vernal Pools, Priority Sites of Rare Species, or Exemplary Natural Communities?

- Yes (Specify Piping Plover Habitat (Rare Species)) No

HISTORICAL /ARCHAEOLOGICAL RESOURCES: Does the project site include any structure, site or district listed in the State Register of Historic Place or the inventory of Historic and Archaeological Assets of the Commonwealth?
Yes (Specify _____) No

If yes, does the project involve any demolition or destruction of any listed or inventoried historic or archaeological resources?
Yes (Specify _____) No

AREAS OF CRITICAL ENVIRONMENTAL CONCERN: Is the project in or adjacent to an Area of Critical Environmental Concern?
Yes (Specify Ellisville Harbor) No

PROJECT DESCRIPTION: The project description should include (a) a description of the project site, (b) a description of both on-site and off-site alternatives and the impacts associated with each alternative, and (c) potential on-site and off-site mitigation measures for each alternative (*You may attach one additional page, if necessary.*)

Project Purpose: To address the on-going severe coastal bank erosion along the west side of the Ellisville Harbor entrance channel. This episodic coastal erosion has been occurring at an average rate of between 19 and 29 feet per year. Since April 2000, the inlet channel has continued migrating landward in the vicinity of the Hruby property and the remains of the coastal dune system have disappeared. Based on observations made during October 2002, at least 10-to-20 feet of the coastal bank has eroded over the past year, causing the loss of several cedar trees estimated to be more than 100 years old.

Existing Conditions: During April 2000, the configuration of the Inlet was causing erosion of the beach and dune at the shoreline along Lookout Point Road. Following the Summer of 2000, the curvature of the inlet channel began eroding the coastal bank materials (i.e. the erosion extended beyond the unconsolidated dune deposit and into the consolidated glacial deposit of the coastal bank). This erosion is confined to a stretch of shoreline between the termination of Salt Marsh Road and the first groin south of the inlet. The groin defines the southern edge of the Inlet entrance, and prevents the inlet from migrating further south. Growth of the barrier spit has lengthened the tidal inlet, and forced it to run alongshore approximately 1400 feet. In addition to the southward migration of the inlet entrance, the inlet channel is slowly migrating landward. Periodic over-washing from surge and waves during storms causes the landward migration of the barrier spit and the associated movement of the inlet channel. As of April 2000, tidal currents in the inlet channel had cut away at the beach/dune system, resulting in a substantial dune scarp (~10 feet from dune crest to base) along this part of the beach.

Based on the limited information presented in this discussion, as well as the general unpredictable behavior of natural inlets, the future natural evolution of Ellisville Harbor Inlet is unclear. It is possible that a significant storm event, such as a Northeaster, could cause a breach of the barrier spit and open a new inlet updrift (north) of the present location. However, for the reasons stated above, recent structural modifications within the littoral system inhibit the return of the inlet to its historic position. It is anticipated that without an episodic breaching of the barrier spit, the channel will continue to migrate landward causing gradual erosion of the dune and coastal bank. In addition, storm events will continue to cause the observed episodic bank erosion (e.g. loss of well-established trees during the March 2001 and November 2002 storm events).

Shore Protection Alternatives: The most viable alternatives for the project site are listed below. A more complete alternatives analysis is attached to the ENF:

- 1) Do nothing
- 2) Construction of a revetment to stabilize the bank along the affected length of shoreline
- 3) Removal of the groin south of the Hruby property
- 4) Assisted relocation of the inlet to the pre-1991 position

Due to the rapid and unpredictable rate of erosion at the site, *Alternative 1* appears inappropriate. If the erosion continues at its past-year average, at least three dwellings along Lookout Point Road will be in jeopardy within the next two years. It is possible that a significant storm event, such as a Northeaster, could cause a breach of the barrier spit and open a new inlet updrift (north) of the present location. However, the original jetty north of the historic inlet and the groin to the south of the Hruby property have interrupted the natural littoral drift, as well as the morphology of the inlet. Therefore, it is unclear whether the existing littoral system will allow a natural breaching of the inlet. Since the "do-nothing" alternative would not preserve the dwellings along Lookout Point Road, this alternative was deemed unacceptable.

Alternative 2 is a very effective and long-term (order of 50 years) solution for coastal erosion, and is consistent with the requirements of the State Wetlands Regulations; however, Ellisville Harbor is a designated Area of Critical Environmental Concern (ACEC) and generally, structural improvements of this type are prohibited. Although the intent of the ACEC designation was to protect Ellisville Harbor and the fronting barrier beach system, it is unclear whether the ACEC designation considered the impacts associated with recent inlet migration. The revetment could cause potentially negative environmental impacts, including increased wave reflection and scouring of the beach in front of the wall. Since *Alternative 2* would potentially cause negative environmental impacts to the littoral system and would not solve the regional coastal erosion problem, this alternative was deemed unacceptable.

Alternative 3 involves removal of a shore-perpendicular coastal engineering structure that has influenced regional littoral drift. Removal of the groin south of the Hruby property would allow continued southerly migration of the inlet channel. This action might provide temporary relief of erosion along the Hruby property; however, erosion rates to the south of the existing groin would accelerate rapidly. It is unclear whether removal of the jetty would have a direct impact on reducing the coastal erosion problem. Since *Alternative 3* would not directly control erosion at the site and potentially could cause adverse downdrift impacts, this alternative was deemed unacceptable.

Alternative 4 involves assisted relocation of the inlet channel to either its pre-1991 condition. For *Alternative 4*, a trench would be dug at the new location of the inlet, almost completely through the width of the barrier spit. Material from the excavation would be used as beach nourishment on the barrier beach to the south and new beach compatible material would be brought in to plug the existing channel to partially block the existing inlet channel to the south. The inlet relocation alternative would cause the downdrift portion of the barrier to weld onto the mainland shoreline. Impacts associated with this procedure would be similar to the episodic storm-induced breaching of the barrier that must occur as the channel becomes more hydraulically inefficient. These impacts include gradual movement of the existing barrier beach landward until it joins the beach system landward of the present channel, with no anticipated loss of beach area. Potential benefits of this approach would be the return of a beach and dune system to the region immediately south of the artificial breach.

Selected Alternative and Potential Project Impacts: Breaching of the inlet at the pre-1991 location would provide the most appropriate solution to provide the needed erosion protection, without adversely affecting the environmental resources. Since relocation of the inlet channel will return the system to the condition described in the late 1980's, it is anticipated that the barrier will gradually elongate to the south of the jetty structure. It is anticipated that this process would be monitored on an annual basis to determine future project needs. As indicated on the enclosed plans, the proposed relocation of the inlet will require two project components: plugging of the existing inlet channel and excavation of the channel at a location consistent with the pre-1990 channel. The inlet "plug" will consist of beach compatible fill (from off-site) and temporary concrete barriers. The channel excavation will require a trench approximately 210 feet in length through the barrier beach. As indicated on the project plans, the planned channel excavation is not within the ACEC.

The project will not alter the ability of the coastal beach to provide storm damage prevention, flood control, or protection of wildlife habitat. It is anticipated that natural storm processes will breach the barrier in the near future (5 to 10 years). However, the unknown location of this future inlet, as well as the significant coastal bank erosion that is taking place at this time, indicate that excavation of an inlet in a controlled fashion can provide a more stable system. The project is intended to create the inlet in the most appropriate location (at the location of the historic inlet that existed between the 1700's and 1990. Since the sediment utilized for the inlet plug is being brought in from off-site, no permanent coastal engineering structures are being employed, and excavated sediment from the inlet channel is being redistributed along the barrier beach, there will be no adverse effect to the coastal beach (no increase of erosion or decrease in sediment transport volume to this beach or downdrift beaches).

Through the series of project meetings, concerns were raised regarding the management of Piping Plovers nesting on the barrier beach. Since vehicular access has been historically allowed to the beach behind the barrier via Salt Marsh Lane, a return of the system to pre-1990 conditions potentially would allow vehicular access to Plover nesting areas. To prevent this potential impact to Piping Plover habitat, the Lookout Point Association has agreed to implement an access restriction and beach management plan. A draft version of this plan is included with this submittal.