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February 17, 2006

CERTIFICATE OF THE SECRETARY OF ENVIRONMENTAL AFFAIRS
ON THE
FINAL ENVIRONMENTAL IMPACT REPORT

PROJECT NAME : Winthrop Shores Reservation
Restoration Program
PROJECT MUNICIPALITY : Winthrop
PROJECT WATERSHED : Boston Harbor
EOEA NUMBER : 10113
PROJECT PROPONENT : Department of Conservation and Recreation
(formerly Metropolitan District Commission)
DATE NOTICED IN MONITOR : January 11, 2006

As Secretary of Environmental Affairs, I hereby determine that the Final Environmental Impact Report (FEIR) submitted on this project **adequately and properly complies** with the Massachusetts Environmental Policy Act (G. L. c. 30, ss. 61-62H) and with its implementing regulations (301 CMR 11.00). The project may proceed to permitting.

Introduction

This project consists of a major beach nourishment project to provide critical storm protection to Winthrop Beach and restoration of historic parkways at Winthrop Beach and Short Beach. This project is part of the Department of Conservation and Recreation's (DCR) "Back to the Beaches" program to enhance and preserve the future of Boston Harbor beaches. The cost of the beach nourishment project and associated mitigation is estimated at \$11.3 to \$11.7 million and the cost of the parkway restoration is estimated at \$8 million.

The Town of Winthrop is a two square mile peninsula that includes a mile-long beach

exposed to the open ocean and subject to damage from northeast storms. Short Beach is located just north of Winthrop Beach. It is a state-designated barrier beach, approximately 1,500 feet long, and it is armored with a vertical seawall. Approximately 4,500 people, or 25% of the town's population, live in the immediate vicinity of Winthrop Beach. More than 100 homes are located on Winthrop Shore Drive and the entire neighborhood is densely developed. Winthrop Beach provides important recreational opportunities to urban residents and it is accessible by public transportation, by bike and by foot. Winthrop Beach, Winthrop Shore Drive, and its neighborhoods are subject to significant flooding and storm damage during northeast storms that cause ongoing erosion and overtopping of the seawall. The December 1992 storm caused a collapse of a portion of the seawall and washout of a section of Winthrop Shore Drive. No major efforts to restore storm protection have been made since the 1950's. Prior efforts employed hard structures, such as groins, breakwaters and revetments that contributed to its erosion. From the 1950's to 1999, a portion of the beach lowered by four to eight feet. Since 1999, the beach has eroded an additional three feet. The integrity of the seawall is threatened from storm wave scour and, in December of 2005, a sinkhole developed revealing an undermined portion of seawall.

The beach nourishment project requires 500,000 cubic yards (cy) of sand and gravel material, reconstruction and redesign of the groin system and a maintenance and monitoring plan to ensure its long-term effectiveness. Material will be placed in two areas of Winthrop Beach and will cover approximately 37 acres. DCR has proposed mining of materials from an offshore borrow site (referred to as NOMES I) and beach placement by a hopper dredge. The borrow site is located in Massachusetts Bay, 8 miles offshore and 80 – 90 feet below the surface of the ocean. The 50-acre site lies within critical habitat for cod spawning, settlement, and juvenile development and is also identified as important habitat for lobster (particularly during the autumn migration to offshore) and winter flounder. The site is located within the "Cod Conservation Zone" (CCZ), which was established by the Division of Marine Fisheries (DMF) in December 2005 to encompass locations and span critical times when cod are known to aggregate in Massachusetts Bay prior to and during spawning.

I have received comments from DMF, National Marine Fisheries Service (NMFS), and the US Environmental Protection Agency (EPA) that express significant concern with the potential short and long-term impacts associated with dredging the NOMES I site. I also note comments from the Department of Environmental Protection (DEP) questioning whether the proposed activity would violate applicable water quality standards (314 CMR 4.00), particularly the anti-degradation provisions that require that "existing uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." While significant issues clearly remain to be addressed, they are largely questions about the application of regulatory standards to the body of information that has been developed through the MEPA process, and are appropriate to address in the permitting process.

MEPA Review

The Back to the Beaches plan sets forth a multitude of projects that vary greatly in complexity, cost, and the potential for environmental impacts, some of which have proceeded without MEPA review. On July 25, 2001, a Notice of Project Change (NPC) was filed for this project because DCR proposed use of an offshore borrow site to supply sand and gravel for beach

nourishment. A Secretary's Certificate on the NPC was issued on August 31, 2001 requiring an Environmental Impact Report (EIR) and establishing the scope of the review. A Draft EIR (DEIR) was submitted in 2003 and a Secretary's Certificate on the DEIR was issued on January 30, 2003. Review of the DEIR determined that the Preferred Alternative for providing shore protection is a major beach nourishment project; however, the source of sand and gravel and related impacts did not benefit from such consensus.

The FEIR was submitted in October, 2005 and was subsequently withdrawn by the project proponent to provide additional information on issues raised during the review, particularly the need to analyze whether lifting of time-of-year restrictions on beach placement would increase the feasibility of upland source alternatives. Supplemental material was developed to address these issues and the FEIR was resubmitted in January, 2006.

The proposed work exceeds Mandatory EIR thresholds at Section 11.03 (1)(a)(1) of the MEPA regulations because it will alter 50 or more acres of land, and Section 11.03 (3)(a)(1)(b) because it will alter ten or more acres of any other wetlands. The project requires a Chapter 91 License and Water Quality Certification from DEP, a NPDES permit from EPA, a Section 404 permit from the US Army Corps of Engineers (ACOE), a Section 106 Review by the Massachusetts Historical Commission (MHC), and an Order of Conditions from the Winthrop Conservation Commission (and hence a superseding Order from DEP if the Order were appealed). The project will be subject to Federal Consistency Review by Coastal Zone Management (CZM). Because this work is being undertaken by a state agency, MEPA jurisdiction extends to all significant environmental impacts potentially resulting from the project.

Public participation for the entire project has been conducted through a number of public meetings and consultation with a Citizens Advisory Committee (CAC). Interagency coordination has been facilitated through the MEPA Technical Advisory Committee (MEPA TAC), established as part of the "Back to the Beaches" program, and the Pre-Application Review Committee (PRC), under the aegis of the ACOE in preparation for the Section 404 application process.

Review of the FEIR

The Certificate on the DEIR required the following: further study of the baseline conditions (physical and biological) at the borrow site and the nourishment site; additional detailed analysis for upland and offshore sources of sediment and sediment placement alternatives; more information on the necessity and design of the terminal groin; and further analysis of stormwater management. In addition, it required development of additional efforts to avoid, minimize and mitigate impacts, including monitoring for recovery of the borrow site and monitoring and maintenance plans for the beach renourishment.

The FEIR provides additional analysis of baseline conditions at the borrow site and the nourishment site including species presence, habitat function and ecological value. This information was developed through re-analysis of existing DMF stock assessment data, ichthyoplankton, trawl and benthic surveys, video transects and field observations. As required, a draft Essential Fish Habitat Assessment (EFH) for the borrow site and the nourishment site was included in the FEIR and incorporated relevant information from the surveys. The NOMES I site

is characterized as important habitat for a diversity of species, juvenile cod, winter flounder and lobster (particularly during the autumn migration to offshore).

The FEIR includes a more detailed analysis of three alternatives: the NOMES I Site (the Preferred Alternative), the Rail to Hopper Dredge Alternative and the Ocean Going Barge Alternative.¹ It provides significantly more detailed information on delivery options and logistics, including the impact of lifting time-of-year restrictions on beach placement. The FEIR indicates that the Preferred Alternative provides the shortest timeframe for beach placement of compatible material (two months) and at a significantly lower cost than other alternatives. The beach nourishment project could be completed within one year and is estimated to cost \$11.3 to \$11.7 million. DCR has asserted that the impacts of this Alternative will be temporary, with full recovery within two to three years, and that the majority of impacts can be avoided, minimized and mitigated through appropriate project design and a monitoring and maintenance program. In addition, it suggests that the habitat is not unique in Massachusetts Bay and, based on the design of the project, review of relevant literature, and experience elsewhere (including Long Island, NY) that its impacts will be reversible and the area will recover to pre-dredging conditions within two to three years. The FEIR states that this alternative, consisting of a relatively simple delivery and placement approach, minimizes the potential for increases to cost and schedule.

The Rail to Hopper Dredge and the Rail to Barge alternatives avoid impacts to marine habitat associated with dredging the borrow site by using an upland source for the nourishment material. According to the FEIR, placement of fill could occur in four to five months if time-of-year restrictions on beach placement are lifted; however, the need to manufacture and stockpile material adds time to the schedule and the minimum schedule for these alternatives is two years. The costs associated with these alternatives range from \$29.5 to \$36 million. The FEIR also states that the use of an upland source would entail a more complex delivery, processing, and placement approach, requiring coordination between material suppliers, land transport, stockpiling areas and barge operators, and increasing the likelihood for increases in cost and schedule.

Finally, the FEIR includes additional analysis of the terminal groin, describes why it is appropriate in this location and describes how it is designed to minimize impacts and protect the rocky intertidal area to its north. Also, it includes a revised and improved stormwater management system that should contribute to improved water quality at Winthrop Beach and Lewis Lake.

The majority of comments on the FEIR are related to the beach nourishment project. DMF, NMFS and EPA are particularly concerned with the long-term impacts of the Preferred Alternative on the cod fishery. Based on a lack of data for this particular habitat, these agencies question the assertion that impacts to the borrow site will be temporary and that recovery will occur within two to three years. As noted previously, DEP comments question whether the proposed activity can meet applicable water quality standards (314 CMR 4.00). Most commentators agree that additional compensatory mitigation for unavoidable, adverse effects to marine habitat is required to adequately mitigate the impacts of this project. Agencies have provided conflicting comments regarding the necessity and advisability of time-of-year restrictions.

¹ Trucking of the material would have required 27,000 trips and, along with many other alternatives, was eliminated from consideration during review of the DEIR.

DMF, NMFS and EPA comments indicate that the Rail to Barge Alternative should be considered the Preferred Alternative because it can provide the necessary material without significant impacts to marine habitat and fisheries. The FEIR asserts that this alternative is not practicable given the potential for project delays based on the complex contracting and placement process that would be required, the need to provide storm damage protection to Winthrop Beach as quickly as possible, and the challenge of funding the increased costs associated with this Alternative.

The FEIR documents how the project is designed to avoid, minimize and mitigate potentially significant impacts including time-of-year restrictions and development of a monitoring and mitigation program to track recovery of the borrow site and performance of the beach fill. While many of the resource agencies disagree with the selection of the Preferred Alternative, the FEIR responds adequately to the Scope on the DEIR and the project can proceed to permitting. Additional analysis and technical review will be required during project permitting and, ultimately, will determine whether the project can be permitted. There is a successful framework established to develop additional project mitigation and monitoring (through the MEPA TAC) and significant jurisdiction to address key issues during permitting.

Monitoring and Maintenance

Well-designed, specific monitoring plans and regular maintenance and renourishment of the beach fill will be required to preserve the significant financial investment in this project, to maintain its long-term effectiveness and to understand the temporary and long-term impacts on the borrow site. The FEIR includes more detailed monitoring plans for the borrow site and monitoring and maintenance plans for the nourishment site. DCR has proposed 10 - 12 years of post-construction monitoring to assess recovery of the borrow site. This monitoring will include side SWATH bathymetry and side scan surveys to assess changes in topography. Biological monitoring is designed to monitor the recovery of the borrow site and will include pre- and post-construction monitoring of finfish, shellfish and benthic resources for a minimum of five years and up to twelve years, if required. Benthic organisms will be used as a primary indicator of recovery.

Monitoring of the beach fill will be designed to assess the following: percent fill remaining within the design template; accretion or erosion along adjacent beaches; longshore variability in beach width; performance of the terminal groin; and future nourishment needs to maintain storm damage protection. The FEIR includes a proposed monitoring protocol that will be reviewed and developed further based on comments from resource agencies during permitting. DCR has indicated it is committed to maintain the nourishment and the storm protection it provides and proposed trigger conditions for renourishment. Biological monitoring to assess recovery of nearshore resources is not proposed; however, DEP has indicated that it may be required during permitting.

DCR should continue coordination with state and federal resource agencies, through the TAC, to ensure that the monitoring and mitigation program is adequate and to present results of monitoring and analysis for review. In addition, DCR should consider the detailed comments on monitoring provided by CZM.

Groin Construction and Reconstruction

The FEIR describes why a terminal groin (as opposed to a permeable groin or placement of cobble) is included in the project design and describes design features intended to minimize environmental impacts. The groin will be located over 400 feet south of the rocky intertidal habitat, its length is limited to 250 feet, it will be designed to allow transport of sediments over the top of the structure during storms and to allow some transport to the north of the groin, and it will be designed with a 1:2 (vertical to horizontal) side slope on the north side of the terminal groin to reduce wave reflection. To further mitigate impacts, the Coral Avenue groin will be removed. The revised stormwater management plan eliminates the need to reconstruct the remaining groins over stormwater discharge pipes.

Based on the design of the terminal groin and analysis provided in the FEIR, CZM indicates that the terminal groin is appropriate for this project; however, CZM continues to question the whether the shore-parallel section of the proposed groin is necessary and DEP has indicated that a sand bypass system or a commitment to place sand to the south periodically may be required. DCR will be required to provide additional information during permitting to demonstrate that the groin is consistent with regulatory standards, that the shore-parallel portion of this structure has been designed to minimize adverse impacts to adjacent resources and to assess the need for additional mitigation.

Parkway Reconstruction and Stormwater Management

Parkway reconstruction includes full-depth roadway reconstruction, provision of wider sidewalks, revised stormwater management system, new lighting and other amenities. The FEIR provides detailed information on these elements. It describes how the boardwalk has been designed to safely accommodate pedestrians, cyclists and other users and how it provides links to existing and proposed trail systems. Since the filing of the DEIR, Winthrop Shores Drive was listed in the National Register of Historic Places as part of the Metropolitan Parks System of Greater Boston, Multiple Properties Listing. Winthrop Parkway, associated with Short Beach, is considered eligible for listing in the National Register. DCR has committed to using the *Guidelines for Parkway Preservation*, which is being developed by the Historic Parkway Initiative, as a guide during final design.

Comments on the DEIR identified significant concerns with the proposed stormwater management system for Winthrop Shore Drive including its ability to alleviate local flooding problems and the need to protect the discharge pipes from storm damage. Based on these concerns, DCR provided an analysis of alternative stormwater management systems and associated environment impacts in the FEIR. Based on this analysis, DCR has proposed to redirect stormwater from Winthrop Shore Drive to Lewis Lake to the west (Alternative SD-4). This proposal includes related improvements to the culvert connecting Upper and Lower Lewis Lake and the existing tidegate structure underneath Washington Avenue connecting Lewis Lake with Crystal Cove.

Comments on the FEIR are generally supportive of the revised stormwater management plan because it could have significant water quality benefits at Winthrop Beach and Lewis Lake

and it does not require reconstruction or extension of the existing groins to protect outfall pipes; however, these comments are based on a conceptual plan. Further analysis and design revisions should be required during permitting. This analysis should include consideration of the feasibility and advisability of incorporating recharge areas. The final plan should be designed to minimize impacts to Lewis Lake and surrounding properties. DMF has recommended, and DEP will require, that DCR meet performance standards for stormwater discharges to critical areas to protect shellfish harvest areas in Crystal Cove. DCR should coordinate closely with the Winthrop Department of Public Works and the Winthrop Conservation Commission during its development.

Other comments regarding parkway reconstruction include CZM's recommendation that all new or substantially reconstructed access stairs and ramps seaward of the seawall be pile-supported and a request for sand accessible wheelchairs by the Town of Winthrop's Commission on Disabilities. DCR should consider these comments as the project design is finalized.

Historic and Archaeological Resources

The Board of Underwater Archaeologists (BUAR) and MHC suggest that potentially historically and archaeologically significant sites may be encountered at the NOMES I site. They have recommended that an archaeological reconnaissance survey be conducted for the site using a cesium magnetometer and that previously collected vibrocore data be re-examined for the presence/absence of intact paleosols. DCR has indicated that the completed survey provides little evidence of historic shipwrecks and that the existence of construction debris would interfere with use of a cesium magnetometer. This survey was not requested when the Scope for the FEIR was developed and will not be required at this stage of the MEPA review. The need for an archaeological survey at the borrow site can be addressed during permitting.

Mitigation

As noted previously, the FEIR includes more detailed monitoring and maintenance plans. In addition, specific mitigation has been provided including a comprehensive construction mitigation plan to minimize impacts on the neighborhood from around the clock beach nourishment. Additional, compensatory mitigation for impacts to marine habitat will be required during project permitting.

The FEIR includes draft Section 61 Findings and a commitment to implement the following mitigation measures:

- seasonal restrictions on dredging and placement of beach fill;
- dredging in furrows to leave undredged areas to support recolonization of the site;
- use of a hopper dredge to create long, shallow trenches;
- post-construction monitoring to assess impacts on the borrow site;
- pre- and post-construction monitoring of finfish, shellfish and benthic resources at borrow site for a minimum of five years and up to 12 years, if required
- post-construction SWATH bathymetry and side scan surveys of borrow site will be conducted immediately after dredging and five years later;
- monitoring plan methodology will be developed prior to dredging and placement;

- design of terminal groin to minimize potential impacts (as described in terminal groin section of this Certificate) ;
- removal of Coral Avenue groin;
- monitoring and maintenance of beach renourishment project;
- beach surveys will be conducted quarterly the first year and monitoring reports will be provided 1, 3, 5, 7 and 10 years post-construction
- beach surveys will include 30 to 35 transect locations every 200 feet;
- pre-construction shellfish survey at Winthrop Beach and pre-construction transplanting or reseeding as required;
- analysis and reporting of physical and biological surveys and monitoring results;
- turbidity controls and monitoring at the beach nourishment site;
- filter cloth or hay bales at catch basins, siltation and hay bales to protect wetlands and siltation curtains at Lewis Lake;
- participation in DEP's Clean Air Construction Initiative (CACI) to retrofit all on-site diesel-powered equipment with after-engine emission controls and use of Low Sulfur Diesel Fuel;
- use of dust control during earthwork, mufflers on construction equipment and use of pneumatic exhaust silencers on air-powered equipment to reduce noise impacts;
- controls on work area and equipment lighting to minimize impacts to nearby residential areas.

This list represents the minimum mitigation and monitoring requirements for this project. Additional mitigation will be developed during permitting. All mitigation commitments should be codified in the project's Section 61 Findings, copies of which shall be provided to MEPA.

February 17, 2006
Date


Stephen R. Pritchard

Comments received on the October, 2005 submittal:

11/23/05	Division of Marine Fisheries (DMF)
11/27/05	Coastal Zone Management (CZM)
11/23/05	Department of Environmental Protection (DEP)
11/18/05	Division of Fisheries and Wildlife/Natural Heritage and Endangered Species Program (NHESP)
11/10/05	Massachusetts Historical Commission (MHC)
11/18/05	Board of Underwater Archaeological Resources (BUAR)
11/23/05	US Environmental Protection Agency (EPA)
11/23/05	National Oceanic and Atmospheric Administration (NOAA)/National Marine Fisheries Service Northeast Region (NMFS)

11/22/05	State Representative Robert A. DeLeo
11/22/05	Town of Winthrop/Board of Selectmen
11/23/05	Linda Calla, Councilwoman Precinct 6
11/1/05	Town of Winthrop/Commission on Disabilities
11/23/05	The Boston Harbor Association
11/23/05	Dottie D'Onofrio
11/23/05	Joe Ferrino
11/22/05	Anita L. Martin
11/23/05	Cheryl Tobey

Comments received on the FEIR:

2/10/06	DMF
2/7/06	CZM
2/10/06	DEP
2/3/06	MHC
2/7/06	BUAR
2/9/06	Oceana
2/10/06	Daniel DiBiase
2/9/06	Anita L. Martin

SRP/CDB/cdb