

Summary Scope for Town of Mattapoisett Work in Eel Pond.

The Town of Mattapoisett will develop engineering designs, site plans, and prepare permit applications for improvements to the drainage culvert and channel forming the eastern entrance to Eel Pond in the Town of Mattapoisett. This channel and culvert has become increasingly restricted with accumulating sediments. Water quality in this coastal embayment is degraded from excessive nitrogen from human sources. The planned improvements to the channel will increase tidal flushing in Eel Pond, and is expected to improve water quality there. Because changes to the eastern channel to Eel Pond must account for conditions at a western channel to Eel Pond (which formed in the 1960s), and because the town's municipal force main sewer line is sited under the western channel, conditions of the western channel must be evaluated for permit applications.

Tasks expected to be completed include:

Task 1. Prepare engineer stamped site plans stamped by a Massachusetts Registered Professional Engineer of the eastern channel entrance from the railroad bridge culvert to the entrance of Eel Pond in Mattapoisett Harbor, and the western channel entrance, and barrier beach areas along the sewer line (refer to attached locus map of area). Site plans must include wetland boundary delineations (wetland boundaries will be flagged by the Buzzards Bay Project), elevation contours shall be in 1-foot contours, channel elevations should be evaluated to one-tenth of a foot. The datum shall be NGVD and benchmarks identified on the plans. The location of sewer lines, and all other utilities and significant features must be included on these plans (horizontal and vertical location). The plans must include culvert dimensions and invert elevations. The sewer location should be based on actual on the ground verification and not just from record drawings due to the importance of this feature.

Task 2. Evaluate the degree of dredging required in the eastern channel, including elevations, size, and design of new culverts, necessary to improve flushing will be evaluated by appropriate hydrographical computer models, and inclusion of proposed channel dredging and potential additional culverts in the plans of Task 1.

Task 3. Prepare detailed cost estimates of installing any culverts and channel dredging identified in the plans developed in Tasks 1 and 2, and identification of specific permit requirements needed.

Task 4. Conduct an analysis of expected impacts of activities proposed in the Eastern Channel specified in Tasks 1 and 2 and 1) any projected changes in erosion rates and tidal flow on the western channel, 2) expected increases in flushing resulting from the proposed designs and projected improvement of water quality, 3) potential changes in tidal range and low and high water elevations in Eel Pond that may result from the proposed work, and 4) any alternatives analysis if required pursuant to any permit application. Several of these task will incorporate an evaluation of the impacts of any modifications to the eastern channel on the entire circulation pattern of Eel Pond, and a quantitative assessment of contaminants transport to see if improvements in water quality will be realized and to what degree. This latter effort may utilize relevant findings from the Massachusetts Estuaries Project.

Task 5. Conduct a shellfish survey, in consultation with the Massachusetts Division of Marine Fisheries, at the proposed site of dredging activity and construction, to locate and evaluate shellfish resources in Eel Pond East Channel, and prepare any reports or maps shellfish resources at reasonable scale necessary for required permit applications.

Task 6. Conduct a sediment analysis of the area to be dredged to help identify potential costs of dredging and dredged material disposal. The proposed sediment sampling plan should be filed with DEP and the Army Corps prior to sampling. The results of the sediment analysis must be provided to the Buzzards Bay Project for review before plan development. [Note: high silt and clay composition could require additional chemical analysis.]

Task 7. Prepare plans and permit applications based on the above tasks, and submit these permit applications to the appropriate state, local, and federal regulatory agencies by June 30, 2005.