



ATTACHMENT 1A

Wetland Delineation Summary

Inter-Tidal Wetland Impact Area

The inter-tidal wetland impact area is located within the lower limits of the Penobscot river estuary prior to discharge into Penobscot Bay. The intertidal wetlands were identified within this area as the area between the high tide elevation and the low tide elevation. Riverbanks are very steep in the project area and no significant tidal marsh areas were noted.

The river would be classified as a high energy channel in the project area and typical upper, mid, and lower intertidal zones were noted. Substratum in the project area consists of boulder beach, mixed coarse and fines as well as ledge. A visual epifauna survey of the project area identified salt marsh grasses and legumes in the upper zone as well as evidence of filamentous green algae and possible cyanobacteria. The mid and lower zones were dominated by brown and red seaweed.

Areas upstream and down stream of the historic rock fill area were also found to include significant areas of mixed coarse and fines beach areas devoid of vegetation.

In-River Impact Area

The in-river impact areas of the project include disturbances to the river bottom sediments. Boring investigations in these areas determined that the bottom sediments consist of deep marine deposits and organic matter. Due to water depths it is not believed that these areas contain significant vegetation.

Freshwater Wetland Impact Area

Freshwater wetlands on the project site were mapped in accordance with the 1987 Federal Manual for mapping wetlands as published by the US Army Corps of Engineers. Wetland classification is based on the Cowardin classification system.

Identified wetlands are seasonally saturated, palustrine, forested, deciduous and coniferous wetlands (PFO1&4) with portions that are scrub/shrub wetlands (PSS1) that are dominated by red maple, black spruce, gray birch, balsam fir, sensitive fern, interrupted fern, blue joint, sarsaparilla and sphagnum moss. Soils in the wetlands consisted of sandy loams and silt loams with a mottled and depleted substratum and met the F3, *Depleted Matrix, Hydric Soil Indicator*. Indicators of hydrology in the wetlands were a combination of surface water, saturation and drainage.