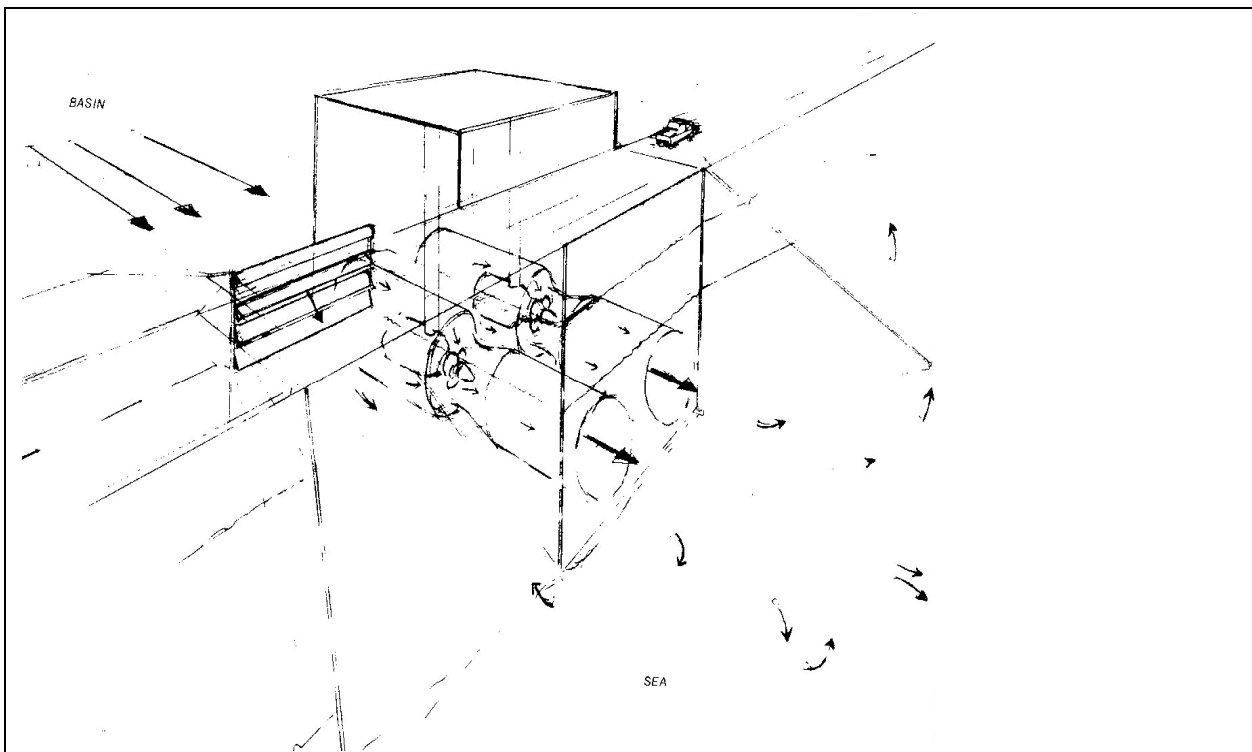


§ 5.6 (d)(3)(ix) Aesthetic Resources

(ix) Aesthetic resources. *A description of the visual characteristics of the lands and waters affected by the project. Components of this description include a description of the dam, natural water features, and other scenic attractions of the project and surrounding vicinity. Potential applicants are encouraged to supplement the text description with visual aids.*

The impacts on the aesthetic character of Half-Moon Cove are focused at the entrance to the tidal basin. The dam will be a permanent structure which will have greater exposure at low tide. The figure below is a conceptual view of the dam with two bulb turbines located in mid-channel in a position below lowest low tide. Flap gates are depicted for the purpose of illustration since a decision has not been on type of devices which will be used as filling / emptying gates. If a tidal wall is installed instead of a rockfill dam, the view will be dramatically different than the rockfill structure as previously noted.

FIGURE HMC-26: SCHEMATIC VIEW OF POWER HOUSE WITH ROCKFILL DAM



PLAN OF BASIN SHOWING THE WATER LEVELS THROUGH TIDE CYCLE



**FIGURE HMC-27: VIEW OF HALF-MOON DURING A TIDAL CYCLE
[DIFFERENT SHADES REPRESENT TIDE LEVEL UNDER NORMAL
CONDITIONS]**

The following section was written in the early 1980s when the tidal range reduction within the impoundment would have been 2-3 times greater than the present reduction of 2-3 feet. The aesthetic quality of Half-Moon Cove has not changed significantly except for the construction of a few new houses around the perimeter of the tidal basin. During the 1990s, a wastewater treatment plant was installed in Quoddy Village, lower right section of Half-Moon Cove, which now discharges into Passamaquoddy Bay. The wastewater plant greatly reduces the risk of contamination into Half-Moon Cove.

Historically, a covered bridge was located at the site of the proposed dam and roadways to the entrance are still maintained on both sides of the entrance. The project has been designed to allow tourist to visit the facility in the same way that the Annapolis Royal Tidal Project (Nova Scotia) attracts nearly 30,000 visitors annually.

(8) REPORT OF AESTHETIC RESOURCES

- i. description of area: Half-Moon Cove is a tidal basin which has 505 acres of intertidal zone and 795 acres of water surface at mean high tide. This feature of the proposed impoundment best characterizes the aesthetic nature of the affected region. The vast expanse of mud flats is flooded and emptied approximately twice a day with an average tidal range of 18.1 feet.

The land surrounding the proposed dam site is dominated by Old State Highway 190 which previously connected Perry to Eastport when a wooden toll bridge was in existence. The site of the proposed tidal plant is the prior location of the wooden toll bridge. The Eastport side of the dam site is primarily a wooded landscape. The Perry side has an open field on one side of the road and a small residential house on the opposite side. An electrical transmission line crosses over the proposed dam site; i.e., at the entrance to Half-Moon Cove.

In general, the area surrounding the proposed project is ruggedly and naturally beautiful, a characteristic feature of the Passamaquoddy Bay and Cobscook Bay region. The only substantial alteration to the natural environment of Half-Moon Cove is the causeway/dike system constructed during 1935-36 and improved by the Department of Transportation in the mid-1950's. The two rockfill dams prevented Passamaquoddy Bay waters from filling into Half-Moon Cove, but have also served as the only transportation route to Eastport.

- ii. anticipated impacts: The most noticeable effect of project development refers to the reduction in the tidal range within the impoundment. The average tidal range will be reduced from 18.1 feet down to 6.3 feet. The high tide level will remain unchanged, but the low tide level will be increased in accordance with the tidal range reduction. This modification translates into a loss of 381 acres of intertidal zone. The vast expanse of mud flats will no longer dominate the basin's features.

The dam structure will resemble the two existing rockfill dikes except for the powerhouse section and the resulting turbulent flow during power production. Integration with the public utility will be made at the project site. The roadway will once again connect Perry and Eastport via Old State Highway 190.

The material used for the rockfill dam will come from local pits and quarries which have not been identified at this time. The disposal site for excavated material is similarly undetermined. The exact procedure for excavation and dredging will be defined with the submittal of a section 404 permit with the Corps of Engineers.

E.8-2

iii. mitigative measures

The project's design was made with an awareness of aesthetic considerations. The decision to select the prescribed mode of operation was based on environmental, engineering, and economic factors. Project specifications were made in compliance with federal and Maine guidelines. The placement of a roadway over the dam represents a combination of practical considerations for the conceptual design of a project with multiple benefits to the region.



FIGURE HMC-28: TIDAL CURRENTS MEASUREMENT AT ENTRANCE TO HALF-MOON COVE AT MID TIDE LEVEL [MAY 2008]

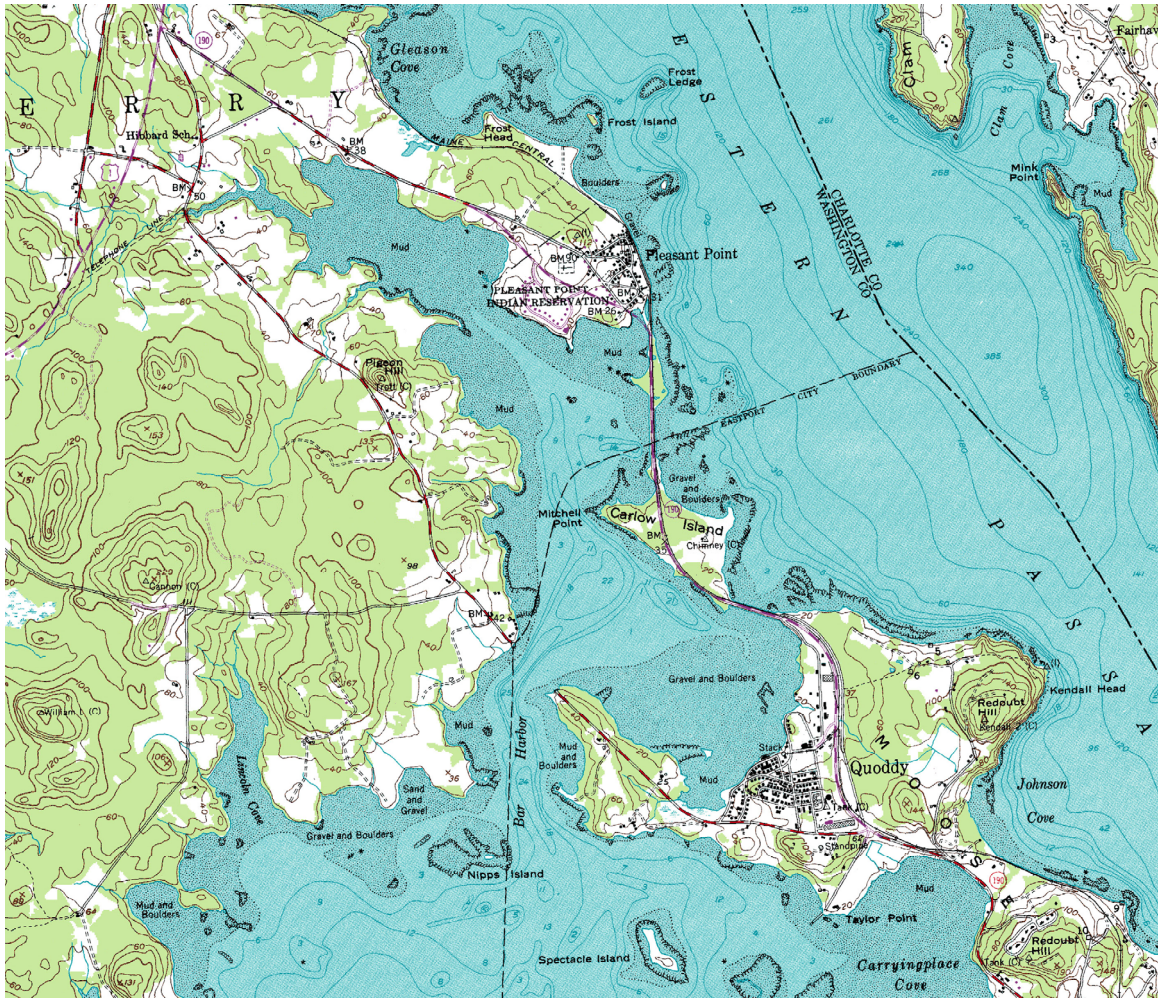


FIGURE HMC-29: TOPOGRAPHIC AND BATHMETRIC MAP OF HALF-MOON COVE [MEAN SEA LEVEL]

The tidal regime of Half-Moon Cove is depicted below for a spring tide. The highest high tide level will not be altered under the proposed mode of development. The illustration notes how the lowest low tide level will be raised only 2-3 feet which mark the other change in the aesthetic character of Half-Moon Cove.



FIGURE HMC-30: PLAN VIEW OF HALF-MOON COVE AT HIGH TIDE & LOW TIDE (NATURAL AND MODIFIED)