

Wood Island Feasibility Study

Part Three: Recommended Alternatives

May 2009

Completed for the Town of Kittery, Maine in cooperation with the University of New Hampshire and
Appledore Engineering, Inc.

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Preface

The following report is the work of students completed under the guidance and supervision of professional engineers. This report should only be used by the reader for the purpose of conveying general information regarding Wood Island, Kittery, ME. The information in this document is based on several sources regarding the history of the site. These written and photographic sources are cited and credit is given for their reference and use.



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Recommended Options

Three preliminary options were determined as possible courses of actions for the Town of Kittery. Each of these options combines alternatives from Part 2 of the 2009 Wood Island Feasibility Study.

Option A includes station stabilization & restoration with minimal seawall removal. The primary goal of this option is to immediately reduce existing hazards on the island. Implementation of this option could span over a period of time dictated by the availability of funding. This option protects the station structure from wind, rain, and wildlife. However, this option does not protect the building from flooding and wave action.

The total estimated cost for this option is approximately \$145,600. This figure includes the installation of a modular dock with solar lighting. The estimate does not include the fees associated with hazardous material inspection, testing and abatement.

Option B includes station stabilization & restoration with complete seawall reconstruction. The goal of this option is to provide all the benefits of Option A and protection of the building from sea storm conditions.

The total estimated cost for this option is approximately \$865,600. This figure includes the installation of a modular dock with solar lighting. The estimate does not include the fees associated with hazardous material inspection, testing and abatement.

Option C includes complete station demolition & steel frame replacement with seawall demolition. This option is designed to eliminate all current and potential hazards on the island. No seawall is required because the steel frame could be designed for wave action.

The total estimated cost for this option is approximately \$342,600. This figure includes the installation of a modular dock with solar lighting. The estimate does not include the fees associated with hazardous material inspection, testing and abatement. The estimate also does not include an environmental study to determine the possible deterioration of zinc coated structural steel expose to low pH bird excrement combined with ocean water spray.

Making the Decision

Several options are possible to engage the Kittery residents in the Wood Island alternative discussion.

Public awareness options include:

- Town Hall meetings
- Informational mailings
- Town website posting
- Local Access Cable television airing of the Feasibility Study presentation.

These options should effectively present the findings of the feasibility study regarding the issues and conflicts associated with the Wood Island site.

Decision Process

Once the public is well informed, the best alternative must be chosen. An effective method to make a decision is to use a decision matrix. In a Pugh Matrix, each alternative is rated in several different categories. An example is shown below.

Example: Modified Pugh Matrix

| Option | Cost | Constructability | Longevity | Maintenance | Historical/Cultural Value | Aesthetic Value | Total |
|--------|------|------------------|-----------|-------------|---------------------------|-----------------|-------|
| A | 1 | 1 | 3 | 3 | 2 | 1 | 11 |
| B | 3 | 3 | 2 | 2 | 1 | 2 | 13 |
| C | 2 | 2 | 1 | 1 | 3 | 3 | 12 |

The Wood Island Feasibility Study has determined the ratings of each option for categories like cost, constructability on the island, structural longevity, etc. However, the study has not determined each options ratings for subjective criteria like historical and cultural value or aesthetic value. The public's opinion could be determined on these subjective categories. The best alternative could then be determined based on its overall rating.

An optimal way to determine the public opinion would be using a town wide survey. The survey would be done by in-person ballot or on the Town's website.

Alternatively, a town vote could be conducted to directly choose the best option.