harbor could provide incidental storm damage reduction benefits. In addition, prudent disposal of large boulders in the project footprint could provide additional protection to areas not within the structure's shadow. Opportunities generated by this project could include:

- Reduced maintenance and damage to buildings, equipment, machinery, and personal property;
- Reduced rate of deterioration of existing buildings; and,
- Eliminating repair and/or replacement of equipment and structure damage, thereby freeing discretionary funds for higher priority community projects and/or needs.

6.2.3 Development of Local Material Source

Preliminary geotechnical investigations have indicated that the island could be a suitable source of construction materials for a rubblemound structure. Unit prices for rock from the Nome quarry have been as much as $600 per ton for armor stone; therefore, development of a local material source could be a cost effective alternative. In addition to the Corps project, the Alaska Department of Transportation and Public Facilities (ADOT&PF) is investigating the feasibility of constructing a runway at Little Diomede. Opportunities of developing a local material source could include:

- Lower construction costs;
- A collaborative project resulting in a year-round airport;
- Creation of new building sites; and,
- A future business venture for the community.

6.3 PROJECT OBJECTIVES

The primary objectives of the study are:

6.3.1 Improve Navigation

- Supply of goods and services
- Transportation of people
    - State ferry possibility
    - Private ferry based in Teller
    - City owned ferry
    - Secure lighterage for barges
    - Secure landing for local boats
    - Secure lighterage for cruise passengers
    - Fisheries development
    - Potential Quarry development
    - Subsistence gathering
    - Harbor of refuge
    - Improve ability to build houses [lower transportation costs, type of structures, location of building sites]
    - Co-location of Airport and harbor facilities for economical movement of materials and exports.

The lack of storm damage reduction would result in a continued deterioration of existing structures, property, and equipment. Due to the steep hillside, most structures are partially pile supported and would continue to be subject to collapse if the piling is damaged or undermined by wave action or floating debris. Heavy equipment would continue to be subject to damage by storm tossed debris. Salt spray would continue to result in corrosion of metal components.

Steep slopes would continue to limit new housing construction, resulting in increasing overcrowding and other health and social issues.

8.0 ASSUMPTIONS AND CONSTRAINTS

8.1 ASSUMPTIONS

The feasibility study will be conducted in accordance with the ER 1105-2 100 as to plan formulation, evaluation, coordination, and reporting, and the assumptions and constraints listed below. It is anticipated that the study will not require any deviations from normal study requirements as outlined in ER 1105-2-100.

8.1.1 Plan Formulation.

The plan formulation process will identify measures that could be implemented, considering both structural and any non-structural measures, which are identified. Each alternative will be evaluated under the criteria outlined in *Principles and Guidelines*: completeness, efficiency, effectiveness, and acceptability. Specific activities will be conducted during the study as defined in the Project Management Plan (PMP).

8.1.2 Evaluation.

Alternative plans will be evaluated by measuring the differences between each plan and the without-project condition, considering the economic, environmental, regional, and social effects of each alternative. The evaluation of costs and benefits will be based on the price level and Federal discount rate applicable at the time of the analysis, which will use a 50-year period for analysis.

8.1.3 Coordination.

The study will be coordinated with the local sponsor and Federal and State agencies as required by law and policy.

8.1.4 Reporting.

The study will result in a report that is a complete decision document, including appropriate environmental analysis required under the National Environmental Policy Act (NEPA). The report will present study analysis, results, and findings so that readers and decision makers at all levels can reach their conclusions regarding the reasonableness of report recommendations.

9.2 EVALUATION OF MANAGEMENT MEASURES

9.2.1 Protected Barge Landing

This measure meets the planning objective to provide reduced transportation costs for delivery of bulk goods and supplies. It would provide for increased income to the community by facilitating more frequent cruise ship passenger visits. It also would allow more access for marine subsistence harvest by expanding the conditions under which launching boats can occur. This alternative provides some incidental shore protection.

9.2.2 Protected Harbor

This measure meets the planning objective to provide reduced transportation costs for delivery of bulk goods and supplies. It would provide for increased income to the community by facilitating more frequent cruise ship passenger visits. It also would allow extended in-water boat storage and access for marine subsistence harvest by expanding the conditions under which launching boats can occur. This alternative also provides a harbor of refuge. And this alternative provides increased incidental shore protection.

9.2.3 Shore Protection

This measure meets the planning objective to reduce the storm generated damage and erosion to public and private facilities and equipment currently suffered by the community. This is not envisioned to be a stand alone measure, but would be combined with one of the measures previously discussed.

9.2.4 Development of a Rock Source

This measure would be constructed with any of the other measures to reduce the cost of a Federal project. This measure could also result in additional land being available to the community once the project construction is complete.

9.2.5 Construction of an Off-Shore Runway

This measure would be constructed by the ADOT&PF. Due to project timing, it is likely that a Federal navigation project would be constructed first and then incorporated into the runway fill, however, if the timing were right, it could eliminate the need for a Federal navigation project.

9.2.6 Relocation of the Community

This measure could meet all planning objectives through careful siting of a new community. However, this measure is several orders of magnitude beyond any navigation project, and is outside of current Administration policy, both in scope and Fe4deral interest. This measure would be constructed by a variety of State and Federal agencies, each having jurisdiction over elements of the relocation.

9.3 DESIGN CRITERIA

9.3.1 General.

Due to the remoteness and physical characteristics of Little Diomede, the alternatives for providing navigation improvements are limited. Previous studies have consistently identified construction of protective works to provide a protected mooring area for barges and local boats. This analysis expands the range of alternatives to include shore protection and

FIGURE 3 ALTERNATIVE 1A (NO SHORE PROTECTION)

FIGURE 4 ALTERNATIVE 1B (NO SHORE PROTECTION)

FIGURE 6 ALTERNATIVE 1D (W/ SHORE PROTECTION)

FIGURE 7 ALTERNATIVE 2A (NO SHORE PROTECTION)

FIGURE 9 ALTERNATIVE 2C (W/SHORE PROTECTION)

FIGURE 10 ALTERNATIVE 2D (W/SHORE PROTECTION)

utilized. Cultural resource investigations are pending. Fishery studies should be pursued to determine if a potential to develop a new commercial activity exists. Independent Technical Review of the 905(b) directed that a detailed analysis be conducted of benefits related to cruse ships. This analysis will be conducted during the Feasibility study. ADOT&PF needs to refine runway alternatives and a decision to continue, or not continue, with a project must be made by that agency.

9.6 ALTERNATIVES BY OTHERS

9.6.1 ADOT&PF Runway Alternative

As discussed above, ADOT&PF is investigating construction of a runway at Little Diomede. Preliminary investigations favor a runway location on the northern side of the community. Figure 12 shows a potential location for this runway and incorporates a boat harbor. When ADOT&PF has refined their alternative, the Corps' navigation project will be developed. An associated shore protection project on the south side of the helipad could complete the possible runway alternative.

FIGURE 12 CONCEPT ADOT&PF RUNWAY WITH HARBOR

Provided by Alaska Department of Transportation & Public Facilities

10.0 COORDINATION

Key stakeholders in this project are the city and native village of Diomede, Kawerak, Norton Sound Economic Development ~~Agency~~ Corp (NSEDC), Bering Straits Native ~~Association~~ Corp (BSNC), and, the Alaska Department of Transportation and Public Facilities. Kawerak, the regional non-profit corporation, has signed the FCSA and is the local sponsor. Kawerak and the community are involved in the planning process, and Kawerak is obtaining wave and wind data. NSEDC will provide an analysis of commercial fishing opportunity.

Conduct FSM	05/16/08
Receive FSM Program Guidance Memo (PGM)	06/17/08
Begin ITR Alternative Formulation Briefing (AFB)	11/27/09
Submit AFB Package to POD/HQUSACE	02/03/10
Conduct AFB	05/28/10
Receive AFB PGM	06/25/10
Begin Public Review	07/01/10
Conduct Public Meeting	07/30/10
DE Signs Draft Report	12/17/10
Submit Draft Report to POD	12/24/10

FSM

Fledermaus
iView3D
97
400.0
200.0
26
100.0
100.0