Massachusetts Coastal Infrastructure Inventory and Assessment Project
Coastal Hazards Commission

South Coastal

New Bedford

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Massachusetts Department of Conservation and Recreation
Hingham, Massachusetts

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Franklin, Massachusetts
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Section I

Coastal Hazards Infrastructure and Assessment Program

INTRODUCTION

PURPOSE

DEVELOPMENT OF MassGIS DATABASE ATTRIBUTES

DEVELOPMENT OF REPAIR / RECONSTRUCTION COSTS
Section I – Coastal Hazards Infrastructure and Assessment Program

INTRODUCTION

The Project and Client

The Commonwealth of Massachusetts has initiated a Coastal Hazards Commission (CHC) to identify the vulnerability of the state to coastal hazards. As one of five working groups working under the CHC, the 20-Yr Infrastructure Plan was to establish a prioritization for the repair of coastal structures. The focus areas of the Working Group include:

- Publicly owned infrastructure
- Infrastructure for which State is responsible
- Inventory of public hazards infrastructure
- Evaluation on conditions
- Development for a prioritization of work
- Estimation of capital and maintenance costs

The 20-Yr Infrastructure Working Group is led by Representative Frank Hynes with CZM as the lead State Agency overseeing the management of the project. The Massachusetts coastline has been broken up into 4 major regions consisting of the North Shore, Boston, South Coast, and the Cape and Islands. The South Shore (the Towns of Hull, Cohasset, Seekonk, Hingham, Plymouth, Kingston, Scituate and Duxbury) was previously evaluated by Bourne Consulting Engineering as a demonstration project in 2006.

Consultant Team

The consultant team that performed the demonstration project was led by Bourne Consulting Engineering (BCE) of Franklin, MA who was responsible for overall project management, specified areas of field assessments, and research. Assisting BCE was Applied Coastal Research and Engineering Inc. of Mashpee, MA, Childs Engineering Corporation, of Medfield, MA., and Waterfront Engineer LLC of Stratham, NH.

PURPOSE

Study Purpose

CZM seeks to identify the capacity of Massachusetts coastal structures to resist major coastal storms and prevent storm damage. In working toward this goal, CZM has initiated a program to perform an assessment of Commonwealth owned and/or maintained coastal structures. The first phase of this program was the performance of a demonstration project for coastal structures located on the South Shore. The demonstration project identified existing structures, their general conditions, ability to provide coastal protection and the probable cost for repairs. The information collected and developed has been incorporated into the MassGIS system to allow use for developing a 20 Year Coastal Infrastructure Plan.

The demonstration project served as a basis for the current statewide inventory assessment of all Commonwealth coastal structures and the needs for their maintenance and/or repair.

South Coastal
Goals of Study

The goals of the Massachusetts Coastal Infrastructure Inventory and Assessment Project include:

- To identify all the coastal structures the state either owns or has responsibility to maintain for the 4 regions included within the study.
- Of the structures identified, determine the structure location and characteristics, the structure condition relative to providing coastal protection and the structure importance in relation to what it is protecting.
- To the degree possible, identify the structure elevation and the FIRM mapping flood elevation and category.
- To the degree possible, identify structure owner and available documents from local, state and federal agencies.
- To establish an estimated cost to rehabilitate the coastal structures to provide the level of project established in the structure’s original design.
- Provide the information in a format compatible for incorporation into the MassGIS system.

Limit of Study

Due to the time constraints and the amount of effort necessary to collect, process and compile the information, the following are identified as limitations of the information presented:

- All property ownership was taken as presumed. No legal investigation of ownership was performed during the project. Property ownership is based on town assessor maps. Where structures were located outshore of assessor map defined property lines, it was assumed to be Town land unless other information indicated otherwise. Where structures were located outshore of Mean Low Water, property is assumed to be State owned.

- The structure ownership was based on assessor maps and research at the local, state and federal levels. Where there was indication of public work on a structure on Town land or on private property, the structure was presumed to be Town owned. Where the structure was on state property, the structure was presumed to be state owned. Where ownership of the structure was not clear but was located on private property, the structure ownership was defined as unknown.

- The study included town and state owned structures as it was assumed that most town owned structures received state funding at some level for construction and/or maintenance.
  - Structures that were determined to be private were not included.
  - Undocumented structures considered to be on private land, but having the potential to have been publicly built and/or maintained, were identified as having an “unknown ownership”.

- The prioritizing of structures was based primarily on risk to general infrastructure and density of housing. Infrastructure included was buildings. The study did not consider all infrastructure issues including:
  - No consideration on utility impacts – water, electrical, sewer, gas
  - No consideration of roadway and bridge protection
  - Evacuation routes were not considered within the investigation
  - Location of Emergency Shelters were not included in priority assessments

- Research was performed at the local, state and federal levels. The local research was limited to location and documenting available coastal structure contract drawings. Research at DCR was restricted to available historic construction plans for coastal structures at the MA-DCR Waterways office in Hingham, MA, and MA-DCR Division of Urban Parks and Recreation in
Boston, MA. No investigation of state archives was performed. Research at MA DEP Chapter 91 and USACE was limited to recorded permits and licenses found in their files. No investigation was performed at the Registry of Deeds.

DEVELOPMENT OF MassGIS DATABASE ATTRIBUTES

The specific attributes that would be incorporated into the MassGIS system were developed based on the scope of work and the goals to be achieved. The following was established to standardize the data collection and presentation and to allow total flexibility for sorting by attributes in the final GIS database. The attributes identified below were input into a MS Access database which was used to manage the data from all eight communities within a single file.

Database Attributes
- Attribute Descriptions/Definitions

Structure Number: A unique structure number was given to each coastal structure. The number was based on existing numbering systems that include the State Department of Environmental Protection community number followed by the local community assessor’s parcel numbering system. The last three digits of the number represent the structure within the parcel. Where structures extend over several parcels, the structure is referenced to a parcel that is approximately in the center of the structure. Where Town assessor’s references include letters, those are also included within the structure number. Some communities have block numbering within their numbering system and these are included. Communities without block numbering still have the block numbering included but these are illustrated as all zeros for that specific segment.

Structures that are on Town property, which would otherwise not have a parcel number, are referenced to a parcel that is in the immediate vicinity of the coastal structure.

On this basis, the following is the general numbering convention:

CCC-MMM-BBB-PPP-SSS

Where:
- CCC DEP Community Number
- MMM Community Map Number
- BBB Block Number (000 if no block numbering system)
- PPP Community Parcel Number
- SSS Structure Number

Property Ownership: All property ownership was on a “presumed” basis as no legal verification of ownership was performed. The ownership of the property was classified under four basic areas which were private ownership (Private), Town ownership (Local), Commonwealth of Massachusetts ownership (State), federal government ownership (Federal) or unknown. Property ownership was based on Town assessor’s maps. Where the location was located above Mean Low Water, and not within a defined parcel, the property ownership was presumed to be the Town unless documentation was found to indicate otherwise. Where a structure was located offshore of Mean Low Water, the property ownership was presumed to be federal.

Structure Ownership: The ownership of all structures is presumed as no verification of ownership was performed. Ownership of the structure was determined by research into historic state and federal...
permits and the entity indicated on the permits as the applicant. Where no other information was found, the following was utilized:

- Structures located on private land but appearing to be significant structures were identified as owned by the Town or as “Unknown”. Unknown was used were there was a question of local or private ownership.
- Structures on Town property were assumed to be owned by the Town
- Structures that were located off-shore were presumed to be federally owned
- Structures that were identified as being privately owned were eliminated from the database

**Basis of Ownership:** The basis of structure ownership was provided to give rationale to the structure ownership and identified the research resource that identified the ownership or the methodology otherwise used. The responses utilized were limited to the following:

- DPW – DPW Employee Interview
- DCR - Contract Drawings
- DEP – Ch 91 License
- USACE – Permits
- Property Ownership
- Offshore Structure

**Structure Owner’s Name:** Ownerships names reflect the presumed owner of publicly owned structures. As this was for public structures only, the ownership was restricted to the community name, the state agency or the federal agency.

**Earliest Structure Record:** The year of the oldest document located for the structure. The information is determined from the document research performed on the structure from local, state and federal agencies. If no documents could be found than this entry is denoted as “Unknown”. Where documentation of the structure could be found, the date from the oldest document was utilized.

**Primary Structure / Secondary Structure:** Many of the coastal structures consisted of combined structures which were rated separately. It was typically found that one structure was significantly more predominant (Ex. Bulkhead/Seawall) and was therefore identified as the Primary Structure while a smaller structure might exist in front (ex. Revetment) of it. The type, height and material of each structure are identified separately. The condition of each structure was based on the Primary Structure. Where there was no secondary structure, the fields were left blank.

**Structure Type:** The structure type was categorized into five basic coastal structure categories which were Bulkhead/Seawall, Revetment, Coastal Beach, Coastal Dune, and Jetty/Groin.

**Structure Material:** The identification of the coastal structure’s material of construction was performed and represents the primary material. Stone structures consisted of both mortared and non-mortared conditions.

**Structure Height:** Each type of structure was categorized by its visible height in feet which was broken into four specific ranges which are:

- < 5 feet
- 5 to 10 feet
- 10 to 15 feet
- > 15 feet

**Structure Condition:** A preliminary assessment of the condition for each structure was performed by the field teams. This was by visual observation only and no detailed investigation was performed. The condition assessments were based on a predefined five level rating system that ranged from Rating A for Excellent Condition to Rating F for Critical Condition. A detailed listing of the conditions and their definitions can be seen in Exhibit A.
Priority Rating: In order to account for the need for protection at any one site, a five level priority rating system was established. This allowed for consideration of public infrastructure protection, density of residential housing for development of structure overall importance for coastal protection. The ratings range from Level 1 for no infrastructure or residence protection to Level 5 for critical inshore infrastructure protection and/or high density residential. The detailed listing and definitions for the priority categories can be seen in Exhibit B.

Structure Repair / Reconstruction Cost: A preliminary estimation of construction costs to maintain or repair structures was made based on the preliminary field assessment of the structures. A Repair Cost Matrix was developed based on structure type, condition, height and material and can be seen in Exhibit C. Once each structure's type, height, and material classifications were determined, the cost per foot for the structure was determine from the Repair Cost Matrix and multiplied by the length of the structure to obtain the estimated repair/restoration cost. The cost matrix repair costs include a 20 percent construction cost contingency as well as 10 percent costs for engineering and permitting.

Structure Length: The length of each structure is provided and utilized in the development of the repair/reconstruction costs. The lengths are given to the nearest foot and taken as the linear distance along the structure, as determined by the GPS location, which takes into account structure angles and curvature.

Structure Elevation: The elevation of structures was determined in feet from existing information where available. The datum used is NAVD 88 and elevations are to the nearest foot. From a previous study much of the south shore coastal structures had elevations defined based on LIDAR mapping data. Where available structure documentation with elevations was found, in areas with no LIDAR data, the information was included within the structure information. Where there was no LIDAR information or existing documentation, the item has been left blank.

LIDAR (Light Detection and Ranging) is technology that is currently being used for high-resolution topographic mapping by mounting a LIDAR sensor, integrated with Global Positioning System (GPS) and inertial measurement unit (IMU) technology, to the bottom of aircraft and measuring the pulse return rate to determine surface elevations.

FEMA Zone and Elevation: For each structure the FEMA Flood Insurance Rate Maps (FIRM) were researched for their Flood Zone designation and their Base Flood Elevation from the most recent FIRM maps for the specific Town. The elevations are provided in feet on the same datum as the FIRM maps (NGVD) with no adjustments or conversions.

Structure Comments: The engineering team provided a brief description and comment on the structure at the time of the field assessments which is provided in support of the condition rating that was given for the structure.

Pictures: At the time of the field assessments, digital photographs were taken to provide a general overview of the structure. The number of pictures was limited to a maximum of six. The first photograph for each structure is shown on the Structure Assessment Form. The list of all photographs is provided on the form.

Town Documents: Town documents represent the structure information that could be found in the Town’s DPW/Engineering Department records. Where particular records could be found, a table of document information was developed and included within the database with limited descriptions.
MA - DCR Documents: MA-DCR documents represent the structure information that could be found within DCR – Waterways office in Hingham. Where particular records could be found, a table of document information was developed and included within the database with limited descriptions.

MA - DEP Chp. 91 Licenses: MA-DEP Chapter 91 license documents represent the structure information that could be found within MA-DEP Chp 91 records in Boston. Where particular records could be found, they were scanned as pdf files and attached to the structure through the GIS database information. In addition, a table of license document information was developed and included within the database with limited descriptions.

USACE Permits: USACE Permits represent the structure information that could be found within the Army Corp of Engineers regulatory office in Concord, MA. Where particular records could be found, they were scanned as pdf files and attached to the structure through the GIS database information. In addition, a table of license document information was developed and included within the database with limited descriptions.

DEVELOPMENT OF REPAIR / RECONSTRUCTION COSTS

A matrix to be used within the database has been developed to assess likely rehabilitation/repair costs to restore the coastal structures to their original design condition. No attempt was made to assess the level of exposure and associated level of protection that might be required to meet current design standards for these structures. These costs are only an estimation to bring these structures back to their original design intent based on 2006 construction costs.

The development of the cost matrix is based on the following:

Structure Condition Ratings – The condition of the coastal structures was determined in the field by the survey crew which was led by an engineer with waterfront structure assessment and design experience. The definitions of the rating criteria utilized for the assessments are presented elsewhere.

The cost implications for each rating condition are as follows:

- **A Rating**: Structures not requiring any maintenance, repair or rehabilitation cost and would not be expected to experience damage if subject to a major coastal storm event.

- **B Rating**: Structures requiring limited or no repair and would be expected to experience only minor damage if subject to a major coastal storm event. The value of these maintenance costs is assumed to be 10 percent of the construction cost.

- **C Rating**: Structures requiring moderate to significant level of repair or reconstruction and would be expected to experience significant damage if subject to a major coastal storm event. The structure is presumed to be effective under a major storm event. The value of the repair costs is assumed to be 50 percent of the construction cost.

- **D Rating**: Structures requiring significant level of rehabilitation or total reconstruction and would be expected to experience significant damage or possibly fail if subject to a major coastal storm event. The value of the repair costs is assumed to be 100 percent of the construction cost.
• F Rating  Structures requiring complete reconstruction and would expect to provide little or no protection from a major coastal storm event. The value of the repair costs is assumed to be 100 percent of the construction cost plus a cost for removal/disposal of the original structure.

**Height of Structure** – Height of a structure is a major factor in the structure cost and therefore was identified as a significant factor in assessing rehabilitation/repair construction costs. The structures were broken down into four major categories which were:

- < 5’  Structures that were less than five feet in height
- 5’-10’  Structures five to 10 feet in height
- 10’-15’  Structures over 10 feet to 15 feet in height
- > 15’  Structures greater than 15 feet in height – assumed 20 feet typical

**Length of Structure** – Length is based on field GPS location with measurements rounded to the nearest foot.

**Bulkhead / Seawall Structures** – These structures are assumed to be constructed out of concrete, steel, stone or wood with each having its own criteria for establishing costs. For each structure type the following was assumed:

- Concrete Seawalls – These walls were assumed to be gravity structures with the volume of concrete used based on the bottom width being one-half of the structure height. Costs of construction were based on a per cubic yard estimate that varied from $350 to $630 per cubic yard depending on the structure height. Values for excavation and demolition of existing structure were also included.

- Stone Seawalls - These walls were treated the same as concrete seawalls and assumed to be gravity structures with the volume of the structure based on the bottom width being one-half of the structure height. Costs of construction were based on a per cubic yard estimate that varied from $350 to $630 per cubic yard depending on the structure height. Values for excavation and demolition of existing structure were also included.

- Steel Bulkheads – Steel bulkheads were presumed to be constructed with steel sheet piling. Tie back systems were presumed for structures 10 feet or greater in height. Shorter walls were assumed to have a cantilever design. The total depth of sheeting was presumed to be two times the exposed height. The cost for construction varied from $40 per square foot to $60 per square foot plus the cost of excavation and demolition.

- Timber Bulkheads – Timber bulkheads were presumed to be constructed with timber piles at eight foot on center, horizontal wales and vertical four inch sheathing. The unit costs for installed materials used were $1,500 per pile and $7.50 per bfm.

**Revetment Structures** – Revetment structures were presumed to be constructed of dry placed (no concrete) stone with a two on one slope and a horizontal toe and crown equal to the thickness layer established for each height condition. The total thickness of the revetment layers varied from six to ten feet with the cost of armor and under-layer stone assumed to be $50 per ton and the crushed stone base to be $15 per ton.
**Groins and Jetties** – Groins and jetties were assumed to be the same materials and construction as the revetment structures but would have two sides and therefore double the quantities.

**Coastal Beaches** – Costs for restoration of Coastal beaches presumed the placement of beach renourishment sands at a 1-on-20 slope over the existing beach conditions. The cost for deposition of sand assumed relatively close source of material and utilized $20 per cubic yard for the material installed.

**Coastal Dunes** – Restoration of coastal dunes assumed a cross section of renourished sand with a one-on-four slope on one side of a 25 foot width at the defined dune height. The cost for deposition of sand assumed relatively close source of material and utilized $20 per cubic yard for the material installed.

**Contingency** – A contingency of 20 percent was added to all costs to reflect the unknowns associated with this level of rehabilitation/repair estimating.

**Engineering and Regulatory Approvals** – A ten percent increase to the cost matrix prices was assessed to represent the engineering design and regulatory approval requirements for the restoration of these structures.
**EXHIBIT A**

**Structure Condition Table – 5 Level Rating System**

<table>
<thead>
<tr>
<th>Preliminary Condition Assessment</th>
<th>Definition Based Upon Perceived Immediacy of Action and Potential to Cause Damage if Not Corrected</th>
<th>Level of Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>A Excellent</td>
<td>Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm</td>
<td>None</td>
</tr>
<tr>
<td>B Good</td>
<td>Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure</td>
<td>Minor</td>
</tr>
<tr>
<td>C Fair</td>
<td>Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide additional material for full protection and extended life</td>
<td>Moderate</td>
</tr>
<tr>
<td>D Poor</td>
<td>Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.</td>
<td>Major</td>
</tr>
<tr>
<td>F Critical</td>
<td>Conditions of structure/landform may warrant emergency stabilization as failure may result in potential loss of property and/or life. Landform eroded, loss of integrity. Structure exhibits critical levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure provides little or no protection from a major coastal storm. Actions taken to totally reconstruct structure to regain full capacity. Landform stability is severely compromised, rate of erosion/material loss may be increasing, and landform does not provide adequate protection from a major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.</td>
<td>Immediate</td>
</tr>
</tbody>
</table>
### EXHIBIT B

**Priority Rating System - 5 Level Rating System**

<table>
<thead>
<tr>
<th>Preliminary Priority Level Assessment</th>
<th>Level Based Upon Perceived Immediacy of Action and Presence of Potential Risk to Inshore Structures if Not Corrected</th>
<th>Level of Action Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>No Inshore Structures or Residential Dwelling Units Present</td>
<td>Long Term Planning Considerations</td>
</tr>
<tr>
<td>II</td>
<td>Inshore Structures Present with Limited potential for Significant Infrastructure Damage</td>
<td>Future Project Consideration</td>
</tr>
<tr>
<td>III</td>
<td>Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings ( &lt;1 dwelling impacted / 100 feet of shoreline)</td>
<td>Consider for Active Project Improvement Listing</td>
</tr>
<tr>
<td>IV</td>
<td>High Value Inshore Structures with Potential for Infrastructure Damage and/or Moderate Density Residential Dwellings (1-10 dwellings impacted / 100 feet of shoreline)</td>
<td>Consider for Next Project Construction Listing</td>
</tr>
<tr>
<td>V</td>
<td>Critical Inshore Structures Present with Potential for Infrastructure Damage and/or High Density Residential Dwellings Conditions of structure may warrant emergency stabilization as failure may result in potential loss of property and/or life. ( &gt;10 dwellings impacted / 100 feet of shoreline)</td>
<td>Consider For Immediate Action Due to Public Safety and Welfare Issues</td>
</tr>
</tbody>
</table>
## EXHIBIT C

**REPAIR / REHABILITATION COSTING DATA**

*September 14, 2006*

Cost per linear foot of structure

<table>
<thead>
<tr>
<th>STRUCTURE TYPE</th>
<th>STRUCTURE MATERIALS</th>
<th>STRUCTURE HEIGHT</th>
<th>STRUCTURE HEIGHT</th>
<th>STRUCTURE CONDITION RATING</th>
</tr>
</thead>
<tbody>
<tr>
<td>BULKHEAD/SEAWALL</td>
<td>CONCRETE</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$84</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 To 10 Feet</td>
<td>$0</td>
<td>$152</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 To 15 Feet</td>
<td>$0</td>
<td>$251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$396</td>
</tr>
<tr>
<td></td>
<td>STEEL</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$54</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 To 10 Feet</td>
<td>$0</td>
<td>$165</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 To 15 Feet</td>
<td>$0</td>
<td>$251</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$343</td>
</tr>
<tr>
<td></td>
<td>STONE</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$84</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 To 10 Feet</td>
<td>$0</td>
<td>$152</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 To 15 Feet</td>
<td>$0</td>
<td>$251</td>
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<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$396</td>
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<tr>
<td></td>
<td>WOOD</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$84</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 To 10 Feet</td>
<td>$0</td>
<td>$127</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 To 15 Feet</td>
<td>$0</td>
<td>$181</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$202</td>
</tr>
<tr>
<td>COASTAL BEACH</td>
<td>SAND</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$28</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 To 10 Feet</td>
<td>$0</td>
<td>$127</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10 To 15 Feet</td>
<td>$0</td>
<td>$224</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$396</td>
</tr>
<tr>
<td>COASTAL DUNE</td>
<td>SAND</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$127</td>
</tr>
<tr>
<td></td>
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<td>10 To 15 Feet</td>
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<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$396</td>
</tr>
<tr>
<td>REVETMENT</td>
<td>STONE</td>
<td>Under 5 Feet</td>
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<td>$66</td>
</tr>
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<td></td>
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<td>5 To 10 Feet</td>
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<td>10 To 15 Feet</td>
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<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
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<td>$247</td>
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<td>GROIN</td>
<td>STONE</td>
<td>Under 5 Feet</td>
<td>$0</td>
<td>$132</td>
</tr>
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<td></td>
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<td>5 To 10 Feet</td>
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<td>$240</td>
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<td>10 To 15 Feet</td>
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<td>$314</td>
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<tr>
<td></td>
<td></td>
<td>Over 15 Feet</td>
<td>$0</td>
<td>$404</td>
</tr>
</tbody>
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**NOTE:** Repair / Rehabilitation Costs include 10% for engineering and regulatory approvals and 20% construction contingency.
Section II

New Bedford
Section II – Community Findings – City of New Bedford

COMMUNITY DESCRIPTION

The City of New Bedford consists of a land area of 20.14 square miles out of a total area of 24.04 square miles and had a population of 93,768 in the 2000 census. The City is located on the south coast of Massachusetts and its location can be seen on this report’s cover. The estimated length of shoreline that is directly exposed to open ocean waves is 5.7 miles with the remaining shoreline semi-protected by offshore structures or landforms. The City is protected from major coastal storms by both natural and man-made shoreline structures that require maintenance to insure the long term protection of its coastline. The man-made and publicly owned structures that protect the City were investigated for their ability to provide adequate protection from major coastal storms. Structures have been identified as publicly owned, including coastal dunes and beaches, based on evidence of investment of public funds made to create/enhance/maintain these structures. The assessment did not include floating or pile supported structures as they are assumed not to provide any significant coastal protection from major storm events.

STRUCTURE INVENTORY

Within the City of New Bedford, there were 37 structures which had public or unknown ownership which provide significant coastal protection. The location of the structures can be seen in Sheets 1 through Sheet 8 in Section II-B of this report. The structures were categorized by their type and by their structural condition based on a preliminary field assessment. The distribution of structures by type and condition can be seen in the following table:

<table>
<thead>
<tr>
<th>Primary Structure (1)</th>
<th>Total Structures</th>
<th>Structure Condition Rating</th>
<th>Total Length</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>A</td>
<td>B</td>
</tr>
<tr>
<td>Bulkhead / Seawall</td>
<td>20</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Revetment</td>
<td>8</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td>Breakwater</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groin / Jetty</td>
<td>9</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Coastal Dune</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Beach</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>37</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

Within the above table, the total length of each type of structure is also provided. The structures are listed by the type which is providing the primary coastal protection. Many sites have multiple structure types at the same location (i.e. revetment in front of seawall). These secondary structures, although not identified within these tables, are included in the development of repair/rehabilitation costs.

The development of repair costs has been included by structure type and by condition. In the City of New Bedford’s case there are a total of 35 structures which would require approximately $ 17.2 million to bring all the coastal structures to “A” Rating. Most critical will be the structures in the “D” and “F” classifications as those are assumed to undergo some level of damage or failure during the next major coastal storm event. To reconstruct these structures, identified in the preliminary survey as being in poor condition, an estimated $ 5.2 million would be required to upgrade the City’s coastal protection.
STRUCTURE REPAIR / RECONSTRUCTION COST - City of New Bedford

<table>
<thead>
<tr>
<th>Primary Structure (1)</th>
<th>Total Structures</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulkhead / Seawall</td>
<td>20</td>
<td>$2,606,880</td>
<td>$7,070,250</td>
<td>$2,322,540</td>
<td></td>
<td></td>
<td>$12,199,770</td>
</tr>
<tr>
<td>Revetment</td>
<td>9</td>
<td>$489,133</td>
<td>$636,728</td>
<td>$2,222,220</td>
<td></td>
<td></td>
<td>$3,348,081</td>
</tr>
<tr>
<td>Breakwater</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Groin / Jetty</td>
<td>8</td>
<td>$420,000</td>
<td>$660,660</td>
<td>$612,612</td>
<td></td>
<td></td>
<td>$1,693,272</td>
</tr>
<tr>
<td>Coastal Dune</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coastal Beach</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
<td>$3,716,113</td>
<td>$8,367,638</td>
<td>$5,157,372</td>
<td></td>
<td></td>
<td>$17,241,123</td>
</tr>
</tbody>
</table>

Based on the limited research within the scope of this project research, the presumed ownership of the structures was established on an initial basis and would be subject to more intense review in future tasks. Structures identified as being owned privately were excluded from further consideration. Although ownership of the land on which the structure was located was a factor, the structure ownership was treated as a separate issue from land ownership. For the City of New Bedford the breakdown of structures by assumed ownership is as follows:

STRUCTURE OWNERSHIP / REPAIR COST - City of New Bedford

<table>
<thead>
<tr>
<th>Primary Structure (1)</th>
<th>Total Structures</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
<th>Total Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Town Owned</td>
<td>32</td>
<td>$3,639,049</td>
<td>$6,351,968</td>
<td>$5,157,372</td>
<td></td>
<td></td>
<td>$15,149,319</td>
</tr>
<tr>
<td>Commonwealth of Mass.</td>
<td>5</td>
<td>$78,164</td>
<td>$2,015,840</td>
<td></td>
<td></td>
<td></td>
<td>$2,091,904</td>
</tr>
<tr>
<td>Federal Government</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unknown Ownership</td>
<td>$</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>37</td>
<td>$3,716,113</td>
<td>$8,367,638</td>
<td>$5,157,372</td>
<td></td>
<td></td>
<td>$17,241,123</td>
</tr>
</tbody>
</table>

The identification of presumed ownership was not based on the investigation of legal documents but relied on property ownership and from construction and regulatory documents that were found. A more detailed investigation of legal documents and agreements would be required where structure ownership is disputed. A more detailed identification of structure type, length, condition and location can be found in Section II-B which contains Structure Assessment Reports for each individual structure found.

SUMMARY

The enclosed reports and associated documents reflects the City of New Bedford’s coastal structure information that will eventually be input into a state-wide GIS database and will be accessible through MassGIS. This data, when compiled state-wide, will be critical in the development of both short term and long term planning for maintaining and improving Massachusetts coastal protection.

This database will also provide relatively quick access to identify available documentation for these structures as well as the ability to be updated as coastal structure improvements are made.
Section II - New Bedford

Part B

Structure Assessment Reports
**CZM Coastal Infrastructure Inventory and Assessment**

**Structure Assessment Form**

**Property Owner:** Local

**Presumed Structure Owner:** Local

**Owner Name:** New Bedford

**Location:** Fort Rodman

**Based On Comment:**

**Earliest Structure Record:** 1967

**Estimated Reconstruction/Repair Cost:** $413,457.00

**Date:** 7/19/2007

**Length:** 1675 Feet

**Top Elevation:** 88 Feet NAVD 88

**FIRM Map Zone:** v9

**FIRM Map Elevation:** 25 Feet NGVD

**Primary Type:** Revetment

**Primary Material:** Stone

**Primary Height:** Over 15 Feet

**Secondary Type:**

**Secondary Material:**

**Secondary Height:**

### Structure Summary:
The place stone revetment has stones that are approximately 6 feet by 6 feet by 3 feet in size. The stones are on a 1 to 1 slope. The stones are not placed tightly together. Understones are visible in many areas. The crest is 15 feet wide. There is no visible scour.

<table>
<thead>
<tr>
<th>Condition Rating</th>
<th>Priority Rating</th>
<th>Level of Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>B</strong> Good</td>
<td><strong>II</strong> Low Priority</td>
<td>Inshore Structures Present with Limited potential for Significant Infrastructure Damage</td>
</tr>
</tbody>
</table>

**Condition Rating Description:** Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

### Structure Images:
- 049-002-000-003-100-PHO1A.JPG
- 049-002-000-003-100-PHO1B.JPG

### Structure Documents:
- **USACE** May 1969 Proposed Seawall 049-002-000-003-100-COE1A
- **DEP** July 1967 Plan Accompanying 049-002-000-003-100-LIC1A
- **DEP** September 1 Plan Accompanying 049-002-000-003-100-LIC1B
- **DEP** March 1992 Plan Accompanying 049-002-000-003-100-LIC1C

Prepared By: Bourne Consulting Engineering
**CZM Coastal Infrastructure Inventory and Assessment**

**Structure Assessment Form**

**Property Owner:**
- Local

**Presumed Structure Owner:**
- Local

**Owner Name:**
- New Bedford

**Location:**
- Fort Rodman

**Based On Comment:**

**Earliest Structure Record:**
- 1992

**Estimated Reconstruction/Repair Cost:**
- $39,940.00

**Length:**
- 330 Feet
- 98.5 Feet NAVD 88

**Top Elevation:**
- 19 Feet NGVD

**FIRM Map Zone:**
- V14

**FIRM Map Elevation:**
- 19 Feet NGVD

**Primary Type:**
- Revetment

**Primary Material:**
- Stone

**Primary Height:**
- 5 to 10 Feet

**Secondary Type:**

**Secondary Material:**

**Secondary Height:**

**Structure Summary:**
The placed stone revetment is at a 1 on 2 slope. The stones are average 3 feet by 2 feet by 2 feet in size. There is minor stone settling and movement. There is no visible scour. There is a small park behind the revetment.

**Condition Rating**
- B: Good

**Level of Action Description**
- Minor

Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

**Priority Rating Action Description**
- Priority: 1
- Rating: None
- Action: Long Term Planning Considerations
- Description: No Inshore Structures or Residential Dwelling Units Present

**Structure Images:**
- 049-002-000-004-100-PHO1A.JPG

**Structure Documents:**
- DEP
- March 1992
- Plan Accompanying
- 049-002-000-004-100-LIC1A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local

Location: Fort Rodman

Based On Comment:

Earliest Structure Record: 1958

Estimated Reconstruction/Repair Cost: $300,250.00

Length: 250 Feet

Top Elevation: 88 Feet NAVD

FIRM Map Zone: V14

FIRM Map Elevation: 19 Feet NGVD

Primary Type: Groin/ Jetty

Primary Material: Stone

Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material:

Secondary Height:

Structure Summary:
The dumped stone groin is submerge at mean high water. The stones are approximately 4 feet by 2 feet by 3 feet in size. The stones were not placed tightly and there are signs of stone movement.

Condition Rating
C

Priority Rating
None

Level of Action
Moderate

Action Description
Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Structure Images:
049-002-000-004-200-PHO2A.JPG

Structure Documents:
MA-DCR September 1 Proposed Shore 049-002-000-004-200-DCR2A
DEP March 1992 Plan Accompanying 049-002-000-004-200-LIC2A

Prepared By: Bourne Consulting Engineering
## CZM Coastal Infrastructure Inventory and Assessment
### Structure Assessment Form

<table>
<thead>
<tr>
<th>Property Owner:</th>
<th>Location:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>Merchant Mariner Memorial Walkway</td>
<td>8/2/2007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presumed Structure Owner:</th>
<th>Based On Comment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Owner Name:</th>
<th>Earliest Structure Record:</th>
<th>Estimated Reconstruction/Repair Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Bedford</td>
<td>1955</td>
<td>$0.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length:</th>
<th>Top Elevation:</th>
<th>FIRM Map Zone:</th>
<th>FIRM Map Elevation:</th>
</tr>
</thead>
<tbody>
<tr>
<td>740 Feet</td>
<td>Feet NAVD 88</td>
<td></td>
<td>Feet NGVD</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Type:</th>
<th>Primary Material:</th>
<th>Primary Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groin/Jetty</td>
<td>Stone</td>
<td>10 to 15 Feet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Type:</th>
<th>Secondary Material:</th>
<th>Secondary Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Structure Summary:

The stone blocks have a cast in place walkway on top of them. The walkway is approximately 15 feet high. The stones are well set. There is no visible scour or stone movement.

<table>
<thead>
<tr>
<th>Condition Rating</th>
<th>Priority Rating</th>
<th>Level of Action</th>
<th>Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>I</td>
<td>None</td>
<td>None</td>
</tr>
</tbody>
</table>

**Long Term Planning Considerations**

- No Inshore Structures or Residential Dwellings Present

### Structure Images:

- 049-002-000-004-300-PHO3A.JPG
- 049-002-000-004-300-PHO3B.JPG

### Structure Documents:

- USACE: September 2, City of New Bedford, 049-002-000-004-300-COE3A
- MA-DCR: May 1955, Proposed Hurricane, 049-002-000-004-300-DCR3A
- MA-DCR: June 1956, Proposed Hurricane, 049-002-000-004-300-DCR3B

Prepared By: Bourne Consulting Engineering
Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: Fort Rodman
Based On Comment:

Earliest Structure Record: 1956
Estimated Reconstruction/Repair Cost: $612,612.00

Date: 8/2/2007

Length: 255 Feet NAVD 88
Top Elevation: 19 Feet NGVD
FIRM Map Zone: V14
FIRM Map Elevation:

Primary Type: Groin/ Jetty
Primary Material: Stone
Primary Height: 5 to 10 Feet
Secondary Type: Secondary Material:
Secondary Height:

Structure Summary:
The set of 2 dumped stone groins have stones that are approximately 4 feet by 3 feet by 3 feet in size. There are also pieces of concrete and granite block. There are signs of stone movement and section loss.

Condition Rating: Poor
Level of Action Description: Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.

Priority Rating: None
Action Description: Long Term Planning Considerations

Structure Images:
049-002-000-004-400-PHO4A.JPG

Structure Documents:
MA-DCR June 1956 Proposed Hurricane 049-002-000-004-400-DCR4A
MA-DCR January 195 Proposed Shore 049-002-000-004-400-DCR4B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford
Location: East Rodney French Boulevard
Based On Comment: 
Earliest Structure Record: 1958
Estimated Reconstruction/Repair Cost: $92,928.00
Date: 7/19/2007

Length: 1100 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: Feet NGVD 17

Primary Type: Bulkhead/Seawall
Primary Material: Concrete
Primary Height: Under 5 Feet
Secondary Type: Secondary Material: Secondary Height: 

Structure Summary:
The cast in place wall is 1 foot wide. There is minor cracking and spalling. There is a sidewalk, road, and parking lot located behind it and a sandy beach in front of it. There is no visible scour.

Condition B
Rating Good
Level of Action Minor
Description Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

Priority II
Rating Low Priority
Action Future Project Consideration
Description Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
049-004-000-002-100-PH01A.JPG

Structure Documents:
MA-DCR January 1955 Proposed Shore 049-004-000-002-100-DCR1A
MA-DCR March 1966 Proposed Shore 049-004-000-002-100-DCR1B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: East Rodney French Boulevard
Based On Comment: 
Earliest Structure Record: Unknown
Estimated Reconstruction/Repair Cost: $180,576.00

Date: 7/19/2007

Length: 720 Feet NAVD 88
Top Elevation: 14 Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: 17 Feet NGVD

Primary Type: Bulkhead/Seawall
Primary Material: Stone
Primary Height: 10 to 15 Feet

Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary: The stone block seawall with cast in place cap has stones that are approximately 5 feet by 2 feet. They are mortared together. There is no sign of scour or stone movement. Above the wall is a park. The cap has minor cracks and spalling.

Condition Rating Level of Action Description
B Good Minor Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority Rating Action Description
II Low Priority Future Project Consideration Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
049-004-000-002-200-PH02A.JPG

Structure Documents:

Prepared By: Bourne Consulting Engineering
**CZM Coastal Infrastructure Inventory and Assessment**

**Structure Assessment Form**

<table>
<thead>
<tr>
<th>Property Owner:</th>
<th>Location:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>East Rodney French Boulevard</td>
<td>7/19/2007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presumed Structure Owner:</th>
<th>Based On Comment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Owner Name:</th>
<th>Earliest Structure Record:</th>
<th>Estimated Reconstruction/Repair Cost:</th>
</tr>
</thead>
<tbody>
<tr>
<td>New Bedford</td>
<td>1958</td>
<td>$60,000.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Length: 250 Feet</th>
<th>Top Elevation: 200 Feet NAVD 88</th>
<th>FIRM Map Zone: V14</th>
<th>FIRM Map Elevation: 19 Feet NGVD</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary Type: Groin/ Jetty</th>
<th>Primary Material: Stone</th>
<th>Primary Height: 5 to 10 Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary Type:</td>
<td>Secondary Material:</td>
<td>Secondary Height:</td>
</tr>
</tbody>
</table>

**Structure Summary:**
The dumped stone groin has a slope of 1 on 2. There is minor stone movement and settling. There is no visible scour.

**Condition Rating**
- **Rating:** Good
- **Level of Action:** Minor
- **Description:** Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

**Priority Rating**
- **Rating:** Low Priority
- **Action:** Future Project Consideration
- **Description:** Inshore Structures Present with Limited potential for Significant Infrastructure Damage

**Structure Images:**
- 049-004-000-002-300-PHO3A.JPG

**Structure Documents:**
- USACE (October 1995)
- Proposed Groin and 049-004-000-002-300-COE3A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: East Rodney French Boulevard
Date: 7/19/2007
Based On Comment:

Earliest Structure Record: 1958
Estimated Reconstruction/Repair Cost: $72,000.00

Length: 300 Feet
Top Elevation: 88 Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: 19 Feet NGVD

Primary Type: Groin/Jetty
Primary Material: Stone
Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material: Secondary Height:

Structure Summary:
The placed stone groin has stones that are approximately 4 feet by 2 feet by 3 feet in size. The crest is one stone wide. There is no sign of scour or stone movement.

Condition B
Rating Good
Level of Action Minor
Description Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

Priority II
Rating Low Priority
Action Future Project Consideration
Description Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
049-004-000-006-100-PHO1A.jpg

Structure Documents:
<table>
<thead>
<tr>
<th>USACE</th>
<th>March 1966</th>
<th>Proposed Shore</th>
<th>049-004-000-006-100-COE1A</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA-DCR</td>
<td>January 1966</td>
<td>Proposed Shore</td>
<td>049-004-000-006-100-DCR1A</td>
</tr>
<tr>
<td>MA-DCR</td>
<td>March 1966</td>
<td>Proposed Shore</td>
<td>049-004-000-006-100-DCR1B</td>
</tr>
</tbody>
</table>

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: West Rodney French Boulevard
Based On Comment: 
Earliest Structure Record: 1956
Estimated Reconstruction/Repair Cost: $2,222,220.00

Date: 7/19/2007

Length: 1850 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: Feet NGVD 18

Primary Type: Revetment
Primary Material: Stone
Primary Height: 5 to 10 Feet

Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary:
The placed stone revetment has stones that are approximately 4 feet by 3 feet by 2 feet in size. The stones are at a 1 on 1 slope. There are areas of stone movement. There is visible erosion and minor scour at the toe of the slope. Boardwalk, road, and houses are located behind the structure.

Condition Rating
D Poor

Level of Action Description
Major
Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.

Priority Rating
III Moderate Priority

Action Description
Consider for Active Project Improvement Listing
Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images: 049-005-000-003-100-PHO1A.JPG
Structure Documents: MA-DCR August 1956 Proposed Hurricane 049-005-000-003-100-DCR1A
MA-DCR November 1 Proposed Sand Fill - 049-005-000-003-100-DCR1B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

<table>
<thead>
<tr>
<th>Property Owner:</th>
<th>Location:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td>East Rodney French Boulevard</td>
<td>7/19/2007</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Presumed Structure Owner:</th>
<th>Based On Comment:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Local</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Owner Name:</th>
<th>Earliest Structure Record:</th>
<th>Estimated Reconstruction/Repair Cost:</th>
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<tbody>
<tr>
<td>New Bedford</td>
<td>Unknown</td>
<td>$540,450.00</td>
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<table>
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<tr>
<th>Length:</th>
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<tbody>
<tr>
<td>450 Feet</td>
<td>Feet NAVD 88</td>
<td>V14</td>
<td>19 Feet NGVD</td>
</tr>
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<table>
<thead>
<tr>
<th>Primary Type:</th>
<th>Primary Material:</th>
<th>Primary Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groin/ Jetty</td>
<td>Stone</td>
<td>5 to 10 Feet</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Secondary Type:</th>
<th>Secondary Material:</th>
<th>Secondary Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
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</tbody>
</table>

Structure Summary:
Three placed stone groins with moderate voids and section loss, but no visible scour. The stones are approximately 4 feet by 2 feet by 2 feet in size.

<table>
<thead>
<tr>
<th>Condition Rating</th>
<th>Priority Rating</th>
<th>Level of Action Description</th>
<th>Future Project Consideration</th>
</tr>
</thead>
<tbody>
<tr>
<td>C Fair</td>
<td>Low Priority</td>
<td>Moderate</td>
<td>Inshore Structures Present with Limited potential for Significant Infrastructure Damage</td>
</tr>
<tr>
<td>Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.</td>
<td></td>
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</table>
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner:
State
Presumed Structure Owner:
State
Owner Name:
MA-DCR

Location:
West Rodney French Boulevard
Based On Comment:

Earliest Structure Record:
1957
Estimated Reconstruction/Repair Cost:
$36,036.00

Date:
7/19/2007

Length: 300 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: Feet NGVD 18

Primary Type: Revetment
Primary Material: Stone
Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material:
Secondary Height:

Structure Summary:
Placed riprap at a 1 on 1 slope against a boat ramp. There is minor stone movement and visible scour. The stones are placed tightly throughout.

Condition Rating
B Good
Level of Action Description
Minor
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority Rating Action Description
II Low Priority Future Project Consideration
Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
049-007-000-112-100-PHO1A.JPG

Structure Documents:
USACE September 1 Proposed Boat 049-007-000-112-100-COE1A
USACE April 1977 Proposed Shore 049-007-000-112-100-COE1B
MA-DCR July 1957 Proposed Boat 049-007-000-112-100-DCR1A
MA-DCR November 1 Proposed Sand Fill - 049-007-000-112-100-DCR1B

Prepared By: Bourne Consulting Engineering
### CZM Coastal Infrastructure Inventory and Assessment

#### Structure Assessment Form

**Town:** New Bedford  
**Structure ID:** 049-007-000-112-200  
**Key:** community-map-block-parcel-structure  

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<tr>
<td>State</td>
<td>West Rodney French Boulevard</td>
<td>7/19/2007</td>
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<table>
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<tr>
<th>Presumed Structure Owner:</th>
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<tr>
<td>State</td>
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<th>Owner Name:</th>
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<tr>
<td>MA-DCR</td>
<td>1957</td>
<td>$20,064.00</td>
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<th>Top Elevation:</th>
<th>FIRM Map Zone:</th>
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<tr>
<td>80 Feet</td>
<td>Feet NAVD 88</td>
<td>V14</td>
<td>18 Feet NGVD</td>
</tr>
</tbody>
</table>

Primary Type: Bulkhead/Seawall  
Primary Material: Stone  
Primary Height: 10 to 15 Feet

Secondary Type: Secondary Material:  
Secondary Height:

#### Structure Summary:

The stone block seawall is mortared. The stones average 2 feet by 1.5 feet by 2 feet in size. The corners are beginning to unravel and there is some settling.

<table>
<thead>
<tr>
<th>Condition Rating</th>
<th>Priority Rating</th>
<th>Level of Action Description</th>
<th>Action Description</th>
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</thead>
<tbody>
<tr>
<td>B Good</td>
<td>II Low Priority</td>
<td>Minor</td>
<td>Inshore Structures Present with Limited potential for Significant Infrastructure Damage</td>
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#### Structure Images:

- [049-007-000-112-200-PHO2A.JPG](#)

#### Structure Documents:

- **USACE**  
  - September 1  
  - Proposed Boat  
  - 049-007-000-112-200-COE2A

- **USACE**  
  - April 1977  
  - Proposed Shore  
  - 049-007-000-112-200-COE2B

- **MA-DCR**  
  - July 1957  
  - Proposed Boat  
  - 049-007-000-112-200-DCR2A

- **MA-DCR**  
  - November 1  
  - Proposed Sand Fill -  
  - 049-007-000-112-200-DCR2B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: State
Presumed Structure Owner: State
Owner Name: MA-DCR

Location: West Rodney French Boulevard
Based On Comment:

Earliest Structure Record: 1956
Estimated Reconstruction/Repair Cost: $180,180.00

Date: 7/19/2007

Length: 300 Feet
Top Elevation: 18 Feet
FIRM Map Zone: V14
FIRM Map Elevation: Feet NAVD 88
Feet NGVD

Primary Type: Revetment
Primary Material: Stone
Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material:
Secondary Height:

Structure Summary:
Placed stone revetment is at a 1 on 1 slope. The stones are approximately 4 feet by 3 feet in size. There are areas of erosion and stone movement. The crest is one stone length wide.

Condition Rating: C
Level of Action: Moderate
Description: Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority Rating: II
Action Description: Low Priority
Future Project Consideration: Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
[049-007-000-112-300-PHO3A.JPG]

Structure Documents:
<table>
<thead>
<tr>
<th>USACE</th>
<th>September 1</th>
<th>Proposed Boat</th>
<th>049-007-000-112-300-COE3A</th>
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<tbody>
<tr>
<td>USACE</td>
<td>April 1977</td>
<td>Proposed Shore</td>
<td>049-007-000-112-300-COE3B</td>
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<tr>
<td>MA-DCR</td>
<td>August 1956</td>
<td>Proposed Hurricane</td>
<td>049-007-000-112-300-DCR3A</td>
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<tr>
<td>MA-DCR</td>
<td>November 1</td>
<td>Proposed Sand Fill</td>
<td>049-007-000-112-300-DCR3B</td>
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</tbody>
</table>

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner:
State

Presumed Structure Owner:
State

Owner Name:
MA-DCR

Location:
West Rodney French Boulevard

Based On Comment:

Earliest Structure Record:
1956

Estimated Reconstruction/Repair Cost:
$20,064.00

Length: 80 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: Feet NGVD 18

Primary Type: Bulkhead/Seawall
Primary Material: Stone
Primary Height: 10 to 15 Feet

Secondary Type: Secondary Material:
Secondary Height:

Structure Summary:
The stone block seawall is mortared. The stones average 2 feet by 1.5 feet by 2 feet in size. The corners are beginning to unravel and there is some stone settling.

Condition Rating
B Good

Level of Action Description
Minor
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

Priority Rating Action Description
II Low Priority Future Project Consideration Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
[049-007-000-112-400-PHO4A.JPG]

Structure Documents:
MA-DCR August 1956 Proposed Hurricane 049-007-000-112-400-DCR4A
MA-DCR November 1 Proposed Sand Fill - 049-007-000-112-400-DCR4B

Prepared By: Bourne Consulting Engineering
### CZM Coastal Infrastructure Inventory and Assessment

**Structure Assessment Form**

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<th>Location:</th>
<th>Date:</th>
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<tbody>
<tr>
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<td>7/19/2007</td>
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<table>
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<tr>
<th>Presumed Structure Owner:</th>
<th>Based On Comment:</th>
<th>Earliest Structure Record:</th>
<th>Estimated Reconstruction/Repair Cost:</th>
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<td>Local</td>
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<td>1977</td>
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<tbody>
<tr>
<td>2490 Feet</td>
<td>Feet NAVD 88</td>
<td>V14</td>
<td>18 Feet NGVD</td>
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</table>

<table>
<thead>
<tr>
<th>Primary Type:</th>
<th>Primary Material:</th>
<th>Primary Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulkhead/Seawall</td>
<td>Concrete</td>
<td>5 to 10 Feet</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Secondary Type:</th>
<th>Secondary Material:</th>
<th>Secondary Height:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revetment</td>
<td>Stone</td>
<td>Under 5 Feet</td>
</tr>
</tbody>
</table>

**Structure Summary:**
The cast in place wall is 2 feet wide. There is a walkway, road, and houses located behind it. There is no visible scour. There is minor cracking and spalling. Areas of the wall has riprap set at a 1 on 2 slope with stones that are approximately 3 feet by 2 feet by 1 foot in size.

<table>
<thead>
<tr>
<th>Condition Rating</th>
<th>Priority Rating</th>
<th>Level of Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Good</td>
<td>III Moderate Priority</td>
<td>Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.</td>
</tr>
</tbody>
</table>

**Structure Images:**
- 049-009-000-286-100-PH01A.JPG
- 049-009-000-286-100-PH01B.JPG
- 049-009-000-286-100-PH01C.JPG

**Structure Documents:**
- USACE April 1977 Proposed Store 049-009-000-286-100-COE1A
- MA-DCR November 1 Proposed Sand Fill - 049-009-000-286-100-DCR1A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local

Presumed Structure Owner: Local

Owner Name: New Bedford

Location: West Rodney French Boulevard

Date: 7/19/2007

Based On Comment: 

Earliest Structure Record: 1958

Estimated Reconstruction/Repair Cost: $168,000.00

Length: 700 Feet

Top Elevation: 18 Feet NGVD

FIRM Map Zone: V14

FIRM Map Elevation: 

Primary Type: Groin/ Jetty

Primary Material: Stone

Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material: 

Secondary Height: 

Structure Summary:
Set of three placed stone groins with stone that are approximately 5 feet by 3 feet. The stones are set at a 1 on 1 slope. There is minor scour and stone movement is visible. The is no visible scour at the toe.

Condition Rating
B Good

Level of Action Description
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority Rating Action Description
III Moderate Priority Consider for Active Project Improvement Listing

Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:
049-009-000-286-200-PHO2A.JPG

Structure Documents:
USACE May 1958 Proposed Sand Fill 049-009-000-286-200-COE2A
USACE April 1977 Proposed Shore 049-009-000-286-200-COE2B
MA-DCR November 1 Proposed Sand Fill 049-009-000-286-200-DCR2A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: East Rodney French Boulevard
Based On Comment: 
Earliest Structure Record: Unknown

Date: 7/19/2007

Estimated Reconstruction/Repair Cost: $1,396,560.00

Length: 920 Feet
Top Elevation: 19 Feet NGVD
FIRM Map Zone: V14
FIRM Map Elevation: 19 Feet NGVD

Primary Type: Bulkhead/Seawall
Primary Material: Concrete
Primary Height: 5 to 10 Feet

Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary:
The stone bulkhead is mortared together. The stones average 3 feet by 2 feet in size. There is a cast in place cap on the bulkhead. There is a sidewalk, small park, a factory, and street located behind the structure. Moderate scour at the toe and many areas of section loss and stone loss.

Condition Rating
D Poor
I High Priority

Level of Action Description
Major
Consider for Next Project Construction Listing

Structure Images: 049-010-000-198-100-PHO1A.JPG

Structure Documents:

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Town: New Bedford
Structure ID: 049-011-000-030-100
Key: community-map-block-parcel-structure

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: West Rodney French Boulevard

Date: 7/19/2007
Based On Comment:

Earliest Structure Record: 1958
Estimated Reconstruction/Repair Cost: $63,756.00

Length: 420 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: 18 Feet NGVD

Primary Type: Bulkhead/Seawall
Primary Material: Concrete
Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material: Secondary Height:

Structure Summary:
The cast in place wall is 1 foot wide with a walkway, road, and houses behind it. There is minor cracking and spalling, and no visible scour.

Condition Rating Level of Action Description
B Good Minor Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

Priority Rating Action Description
III Moderate Priority Consider for Active Project Improvement Listing Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:
[049-011-000-030-100-PHO1A.JPG]
[049-011-000-030-100-PHO1B.JPG]

Structure Documents:
MA-DCR January 195 Proposed Shore 049-011-000-030-100-DCR1A
MA-DCR November 1 Proposed Sand Fill - 049-011-000-030-100-DCR1B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

**Structure Assessment Form**

**Property Owner:**
Local

**Presumed Structure Owner:**
Local

**Owner Name:**
New Bedford

**Location:**
West Rodney French Boulevard

**Based On Comment:**

**Earliest Structure Record:**
1958

**Date:**
7/19/2007

**Estimated Reconstruction/Repair Cost:**
$45,540.00

**Length:**
60 Feet

**Top Elevation:**
60 Feet NAVD 88

**FIRM Map Zone:**
V14

**FIRM Map Elevation:**
18 Feet NGVD

**Primary Type:**
Bulkhead/Seawall

**Primary Material:**
Concrete

**Primary Height:**
5 to 10 Feet

**Secondary Type:**
Secondary Material

**Secondary Height:**
Structure Summary:
The cast in place wall is 1 foot wide with public bath house behind it. There is minor cracking and spalling, and no visible scour.

**Condition Rating**
C Fair

**Level of Action Description**
Moderate

**Priority Rating Action Description**
Low Priority Future Project Consideration Inshore Structures Present with Limited potential for Significant Infrastructure Damage

**Structure Images:**
049-011-000-030-200-PHO2A.JPG

**Structure Documents:**
MA-DCR January 195 Proposed Shore 049-011-000-030-200-DCR2A
MA-DCR November 1 Proposed Sand Fill 049-011-000-030-200-DCR2B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: West Rodney French Boulevard
Based On Comment:
Earliest Structure Record: 1958
Estimated Reconstruction/Repair Cost: $106,260.00

Town: New Bedford
Structure ID: 049-011-000-030-300
Key: community-map-block-parcel-structure
Date: 7/19/2007

Length: 140 Feet
Top Elevation: 98 Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: 18 Feet NGVD
Primary Type: Bulkhead/ Seawall
Primary Material: Stone
Primary Height: 5 to 10 Feet
Secondary Type: Secondary Material:
Secondary Height:

Structure Summary:
The mortared, stacked stones are approximately 3 feet by 1 foot in size. There is a cast in place concrete picnic area above the stones. There are many areas of section loss in the mortar. There are minor areas of scour.

Condition Rating
Level of Action Description
C Fair Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority Rating Action Description
II Low Priority Future Project Consideration Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
049-011-000-030-300-PHO3A.JPG

Structure Documents:
MA-DCR January 1955 Proposed Shore 049-011-000-030-DCR3A
MA-DCR November 1 Proposed Sand Fill 049-011-000-030-DCR3B

Prepared By: Bourne Consulting Engineering
**Structure Assessment Form**

**Property Owner:** Local

**Presumed Structure Owner:** Local

**Owner Name:** New Bedford

**Location:** West Rodney French Boulevard

**Based On Comment:**

**Earliest Structure Record:** 1958

**Estimated Reconstruction/Repair Cost:** $0.00

**Length:** 315 Feet

**Top Elevation:** 88 Feet NAVD 88

**FIRM Map Zone:**

**FIRM Map Elevation:** 0 Feet NGVD

**Primary Type:** Groin/Jetty

**Primary Material:** Stone

**Primary Height:** 5 to 10 Feet

**Secondary Type:**

**Secondary Material:**

**Secondary Height:**

**Structure Summary:** Placed stone groin with stones that are approximately 5 feet by 3 feet by 2 feet in size. The stones are at a 1 on 1 slope. Behind the structure is a small park. The groin starts at about mean low water.

**Condition** A

**Rating** Excellent

**Level of Action** None

**Description** Like new condition. Structure expected to withstand major coastal storm without damage. Stable landform (beach, dune or bank). Adequate system exists to provide protection from major coastal storm.

**Priority** II

**Rating** Low Priority

**Action** Future Project Consideration

**Description** Inshore Structures Present with Limited potential for Significant Infrastructure Damage

**Structure Images:**

<table>
<thead>
<tr>
<th>Structure Images:</th>
<th>Structure Documents:</th>
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<tbody>
<tr>
<td>049-011-000-030-400-PHO4A.JPG</td>
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<td>049-011-000-030-400-PHO4A.JPG</td>
<td>MA-DCR</td>
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<td>049-011-000-030-400-PHO4A.JPG</td>
<td>MA-DCR</td>
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</table>

**Prepared By:** Bourne Consulting Engineering
**CZM Coastal Infrastructure Inventory and Assessment**

**Structure Assessment Form**

**Property Owner:**
Local

**Presumed Structure Owner:**
Local

**Owner Name:**
New Bedford

**Location:**
East Rodney French Boulevard

**Based On Comment:**

**Earliest Structure Record:**
1981

**Estimated Reconstruction/Repair Cost:**
$270,270.00

**Date:**
7/19/2007

**Length:**
450 Feet NAVD 88

**Top Elevation:**
5 Feet NGVD

**FIRM Map Zone:**
V14

**FIRM Map Elevation:**
19 Feet NGVD

**Primary Type:**
Revetment

**Primary Material:**
Stone

**Primary Height:**
5 to 10 Feet

**Secondary Type:**

**Secondary Material:**

**Secondary Height:**

**Structure Summary:**
The placed stone revetment has a 1 on 2 slope with stones that average 4 feet by 2 feet in size. The stones are mortared together. There is moderate mortar loss and stone settlement.

**Condition**
C

**Rating**
Fair

**Level of Action**
Moderate

**Description**
Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide additional material for full protection and extended life.

**Priority**
I

**Rating**
None

**Action**
Long Term Planning Considerations

**Description**
No Inshore Structures or Residential Dwelling Units Present

**Structure Images:**
049-012-000-247-100-PHO1A.JPG

**Structure Documents:**
USACE
March 1981
Proposed Timber
049-012-000-247-100-COE1A

Prepared By: Bourne Consulting Engineering
**CZM Coastal Infrastructure Inventory and Assessment**  
**Structure Assessment Form**

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<table>
<thead>
<tr>
<th>Owner Name:</th>
<th>Earliest Structure Record:</th>
<th>Estimated Reconstruction/Repair Cost:</th>
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<tbody>
<tr>
<td>New Bedford</td>
<td>1981</td>
<td>$33,264.00</td>
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<th>Length: 100 Feet</th>
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<th>FIRM Map Elevation: Feet NGVD</th>
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<table>
<thead>
<tr>
<th>Primary Type: Revetment</th>
<th>Primary Material: Stone</th>
<th>Primary Height: Under 5 Feet</th>
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<table>
<thead>
<tr>
<th>Secondary Type:</th>
<th>Secondary Material:</th>
<th>Secondary Height:</th>
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</table>

| Structure Summary: | |
|--------------------| The dumped stone riprap is adjacent to the precast boat ramp. The stones are 400 to 500 pounds on average. |

### Condition Rating Level of Action Description
- C: Fair Moderate
- Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

<table>
<thead>
<tr>
<th>Priority Rating Action Description</th>
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<tbody>
<tr>
<td>II: Low Priority</td>
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<tr>
<td>Future Project Consideration</td>
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<tr>
<td>Inshore Structures Present with Limited potential for Significant Infrastructure Damage</td>
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**Structure Images:**  
049-012-000-247-200-PHO2A.JPG

**Structure Documents:**  
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<tr>
<th>USACE</th>
<th>March 1981</th>
<th>Proposed Timber</th>
<th>049-012-000-247-200-COE2A</th>
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</table>

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: West Rodney French Boulevard
Based On Comment: 
Earliest Structure Record: 1958
Estimated Reconstruction/Repair Cost: $925,980.00

Town: New Bedford
Structure ID: 049-013-000-055-100
Key: community-map-block-parcel-structure

Date: 7/19/2007

Length: 610 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: V14
FIRM Map Elevation: Feet NGVD 18

Primary Type: Bulkhead/ Seawall
Primary Material: Concrete
Primary Height: 5 to 10 Feet

Secondary Type: Secondary Material: Stone
Secondary Height: 

Revetment:

Structure Summary:
The cast in place wall is 1 foot wide with a road and houses behind it. There are areas of section loss, cracking, and scour at the toe. There is minor erosion behind the wall.

Condition Rating
Level of Action Description
D Poor
Major
Structure exhibits advanced levels of deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure has strong risk of significant damage and possible failure during a major coastal storm. Structure should be monitored until repairs/reconstruction can be initiated. Actions taken to reconstruct structure to regain full capacity to resist a major coastal storm. Landform eroded, stability threatened. Landform not adequate to provide protection during major coastal storm. Actions taken to recreate landform to adequate limits for full protection from a major coastal storm.

Priority Rating Action Description
III Moderate Priority Consider for Active Project Improvement Listing
Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:
049-013-000-055-100-PHO1A.JPG

Structure Documents:

MA-DCR January 195 Proposed Shore 049-013-000-055-100-DCR1A
MA-DCR November 1 Proposed Sand Fill - 049-013-000-055-100-DCR1B

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: West Rodney French Boulevard
Based On Comment: 

Earliest Structure Record: 1958
Estimated Reconstruction/Repair Cost: $120,000.00

Length: 500 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: VI4
FIRM Map Elevation: 18 Feet NGVD

Primary Type: Groin/Jetty
Primary Material: Stone
Primary Height: 5 to 10 Feet

Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary:
Set of two placed stone groins. Stones are approximately 5 feet by 3 feet by 2 feet in size. The stones are at a 1 on 1 slope. The crest is made up of 5 stones making it approximately 10 feet wide. There is no sign of stone movement or scour.

Condition Rating
B Good

Level of Action Description
Minor
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

Priority Rating Action Description
III Moderate Priority Consider for Active Project Improvement Listing
Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:
049-013-000-055-200-PHO2A.JPG

Structure Documents:

USACE Proposed Shore 049-013-000-055-200-COE2A
MA-DCR Proposed Shore 049-013-000-055-200-DCR2A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: Gifford Street
Based On Comment:  
Earliest Structure Record: Unknown

Date: 7/19/2007

Length: 460 Feet
Top Elevation: 88 Feet NAVD
FIRM Map Zone: A1
FIRM Map Elevation: 6 Feet NGVD

Primary Type: Revetment
Primary Material: Stone
Primary Height: Under 5 Feet

Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary:
The dumped riprap has stones that are approximately 200 to 300 pounds each. The stones are at a 1 on 1 slope. There is a parking lot behind the structure and a boat ramp adjacent to it. There is moderate stone movement and section loss.

Condition Rating
Level of Action Description
Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during major coastal storm. Actions taken to provide additional material for full protection and extended life.

Priority Rating Action Description
1 None Long Term Planning Considerations No Inshore Structures or Residential Dwelling Units Present

Structure Images:
[049-025A-000-048-100-PH01A.JPG]

Structure Documents:
  
Prepared By: Bourne Consulting Engineering
Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: South Pier

Date: 8/2/2007

Estimated Reconstruction/Repair Cost: $391,248.00

Length: 1560 Feet
Top Elevation: 88 Feet NAVD 88
FIRM Map Zone: A1
FIRM Map Elevation: 6 Feet NGVD

Primary Type: Bulkhead/ Seawall
Primary Material: Concrete
Primary Height: 10 to 15 Feet
Secondary Type: Secondary Material: Secondary Height:

Structure Summary:
The cast in place concrete bulkhead has a fish processing plant behind it. There is minor cracking and spalling on the bulkhead. At the time of the survey, the fender system was being repaired.

Condition Rating Level of Action Description
B Good Minor Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority Rating Action Description
IV High Priority Consider for Next Project Construction Listing High Value Inshore Structures with Potential for Infrastructure Damage and/or Moderate Density Residential Dwellings (1-10 dwellings impacted / 100 feet of shoreline)

Structure Images:
049-037-000-305-100-PHO1A.JPG

Structure Documents:

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: Homer's Wharf
Based On Comment:
Earliest Structure Record: Unknown
Estimated Reconstruction/Repair Cost: $411,840.00

Date: 7/19/2007

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<tbody>
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<td>1200 Feet</td>
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<table>
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<td>Feet NAVD 88</td>
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<table>
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<tr>
<th>FIRM Map Zone:</th>
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<td>A1</td>
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<tr>
<td>Feet NGVD</td>
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<thead>
<tr>
<th>Primary Type:</th>
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<tbody>
<tr>
<td>Bulkhead/ Seawall</td>
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<tr>
<th>Primary Material:</th>
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<td>Steel</td>
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<th>Secondary Type:</th>
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<table>
<thead>
<tr>
<th>Secondary Material:</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Secondary Height:</th>
</tr>
</thead>
</table>

Structure Summary:
The sheet pile bulkhead has a steel cap. There is moderate corrosion at the tidal zone, but no visible erosion behind the piles. The bulkhead has fender piles in the corners. There is a parking lot, fishing equipment storage, warehouses, and building above the structure.

Condition Rating
Level of Action Description
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landfill is present. Structure / landfill adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

Priority Rating Action Description
Iii Moderate Priority Consider for Active Project Improvement Listing Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:
049-047-000-180-100-PH01A.JPG

Structure Documents:

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Town: New Bedford
Structure ID: 049-047-000-203-100
Key: community-map-block-parcel-structure

Property Owner: State
Presumed Structure Owner: State
Owner Name: DCR

Location: State Pier
Based On Comment:

Date: 7/19/2007
Earliest Structure Record: 2075
Estimated Reconstruction/Repair Cost: $2,376,000.00

Length: 1200 Feet
Top Elevation: 6 Feet NAVD 88
FIRM Map Zone: A1
FIRM Map Elevation: 6 Feet NGVD

Primary Type: Bulkhead/Seawall
Primary Material: Stone
Primary Height: Over 15 Feet

Secondary Type: Secondary Material:
Secondary Height:

Structure Summary:
The stone block seawall has a cast in place concrete cap which is approximately 10 feet in height. There is moderate to severe cracking and spalling on the concrete. Damaged fender piles are in front of the structure. Connected to the structure are timber piles supporting the pier. There is also a ferry terminal on the pier.

Condition C
Rating Fair
Level of Action Moderate
Description Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide additional material for full protection and extended life.

Priority V
Rating Immediate / Highest Priority
Action Consider for Immediate Action Due to Public Safety and Welfare Issues
Description Critical inshore Structures Present with Potential for Infrastructure Damage and/or High Density Residential Dwellings Condition of structure may warrant emergency stabilization as failure may result in potential loss of property and/or life. (>10 dwellings impacted / 100 feet of shoreline)

Structure Images:
049-047-000-203-100-PHO1A.JPG
049-047-000-203-100-PHO1B.JPG
049-047-000-203-100-PHO1C.JPG

Structure Documents:
MA-DCR April 1939 Proposed Timber 049-047-000-203-100-DCR1A
MA-DCR May 1946 Proposed Pier 049-047-000-203-100-DCR1B
MA-DCR October 1946 New Bedford State 049-047-000-203-100-DCR1C
MA-DCR April 1961 Proposed Pier 049-047-000-203-100-DCR1D
MA-DCR December 1 Proposed Bulkhead - 049-047-000-203-100-DCR1E
MA-DCR May 1999 Harbor Development 049-047-000-203-100-DCR1F
MA-DCR May 2002 New Bedford harbor 049-047-000-203-100-DCR1G
DEP August 1979 Plan Accompanying 049-047-000-203-100-LIC1A

Prepared By: Bourne Consulting Engineering
Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: Coal Pocket Pier

Based On Comment:

Earliest Structure Record: 1984
Estimated Reconstruction/Repair Cost: $595,650.00

Length: 475 Feet
Top Elevation: 6 Feet NAVD 88
FIRM Map Zone: A1
FIRM Map Elevation: 6 Feet NGVD

Primary Type: Bulkhead/ Seawall
Primary Material: Concrete
Primary Height: 10 to 15 Feet
Secondary Type: Secondary Material: Secondary Height:

Structure Summary:
The cast in place concrete bulkhead has timber piles that are 2 feet on center outshore. The construction material is not visible below the waterline. There is moderate cracking and settling of the concrete. Behind the pier is a parking lot.

Condition Rating Level of Action Description
C Fair Moderate Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority Rating Action Description
III Moderate Priority Consider for Active Project Improvement
Listing Inshore Structures with potential for Infrastructure Damage and/or Limited
Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

Structure Images:
[049-047-000-204-100-PHO1A.JPG]

Structure Documents:
[DEP] June 1984 Plan Accompanying 049-047-000-204-100-LIC1A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: Leonard's Wharf
Based On Comment:
Earliest Structure Record: Unknown
Estimated Reconstruction/Repair Cost: $260,832.00

Date: 7/19/2007

Length: 1040 Feet
Top Elevation: 6 Feet NGVD
FIRM Map Zone: AI
FIRM Map Elevation: 6 Feet NGVD
Primary Type: Bulkhead/Seawall
Primary Material: Steel
Primary Height: 10 to 15 Feet
Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary:
The sheet pile bulkhead has a steel cap. There is moderate corrosion at the tidal zone. There is no visible erosion behind the piles. There are fender piles along the bulkhead and in the corners. A parking lot and fishing equipment storage are above the structure.

Condition Rating
Good
Minor

Priority Rating
Low Priority
Future Project Consideration

Structure Images:
049-047-000-212-100-PHO1A.JPG
049-047-000-212-100-PHO1B.JPG

Structure Documents:

Prepared By: Bourne Consulting Engineering
**CZM Coastal Infrastructure Inventory and Assessment**

**Structure Assessment Form**

<table>
<thead>
<tr>
<th>Property Owner:</th>
<th>Location:</th>
<th>Date:</th>
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</thead>
<tbody>
<tr>
<td>Local</td>
<td>Between Leonard's Wharf and Homer's Wharf</td>
<td>7/19/2007</td>
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<tr>
<td>Presumed Structure Owner:</td>
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<tr>
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<tr>
<td>Bulkhead/Seawall</td>
<td>Stone</td>
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<tr>
<td>Secondary Type:</td>
<td>Secondary Material:</td>
<td>Secondary Height:</td>
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**Structure Summary:**

The sheet pile bulkhead has a steel cap. There is moderate corrosion at the tidal zone, but no visible erosion behind the piles. The bulkhead has fender piles. There is a building directly behind the bulkhead.

<table>
<thead>
<tr>
<th>Condition Rating</th>
<th>Priority Rating</th>
<th>Level of Action Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>B Good Minor</td>
<td>III Moderate Priority</td>
<td>Consider for Active Project Improvement Listing</td>
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<tr>
<td>Description</td>
<td>Action Description</td>
<td>Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (&lt;1 dwelling impacted / 100 feet of shoreline)</td>
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**Structure Images:** 049-047-000-219-100-PHO1A.jpg

**Structure Documents:**

Prepared By: Bourne Consulting Engineering
**Structure Assessment Form**

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<th>Property Owner:</th>
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<tr>
<td>Local</td>
<td>Fisherman's Wharf</td>
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<td>New Bedford</td>
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<td>Bulkhead/Seawall</td>
<td>Steel</td>
<td>10 to 15 Feet</td>
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<thead>
<tr>
<th>Secondary Type:</th>
<th>Secondary Material:</th>
<th>Secondary Height:</th>
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<tbody>
<tr>
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**Structure Summary:**
The sheet pile bulkhead has a steel cap and timber fender system. Above the structure is a small museum, harbor master's office, and parking lot.

**Condition Rating**
- **Level of Action Description**: Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

**Priority Rating**
- **Action Description**: Moderate Priority
- Consider for Active Project Improvement Listing
- Inshore Structures with potential for Infrastructure Damage and/or Limited Residential Dwellings (<1 dwelling impacted / 100 feet of shoreline)

**Structure Images:**
- 049-053-000-120-100-PHO1A.JPG
- 049-053-000-120-100-PHO1B.JPG

**Structure Documents:**
- USACE May 1977 Proposed Bulkhead Plan Accompanying
- DEP March 1977
- 049-053-000-120-100-COE1A
- 049-053-000-120-100-LIC1A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: North Terminal Bulkhead
Based On Comment:
Earliest Structure Record: 1961
Estimated Reconstruction/Repair Cost: $237,600.00

Date: 8/2/2007

| Length: 600 Feet NAVD 88 | Top Elevation: 6 Feet NGVD | FIRM Map Zone: A1 | FIRM Map Elevation: 6 Feet NGVD |

Primary Type: Bulkhead/Seawall  
Primary Material: Concrete  
Primary Height: Over 15 Feet

Secondary Type:  
Secondary Material:  
Secondary Height:  

Structure Summary:
The cast in place concrete bulkhead has a factory behind it. There is minor cracking and spalling. The mean high water is approximately 10 feet from the top of the bulkhead. The top of the wall contains drainage holes.

Condition Rating  
B  
Good  
Minor

Level of Action Description  
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure/landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent/limit future deterioration and extend life of structure.

Priority Rating
IV  
High Priority

Consider for Next Project Construction Listing

High Value Inshore Structures with Potential for Infrastructure Damage and/or Moderate Density Residential Dwellings (1-10 dwellings impacted / 100 feet of shoreline)

Structure Images:
049-066-000-165-100-PHO1A.JPG

Structure Documents:
<table>
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<tr>
<th>USACE</th>
<th>July 1979</th>
<th>Proposed Steel</th>
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<tr>
<td>MA-DCR</td>
<td>January 1966</td>
<td>Proposed Harbor</td>
<td>049-066-000-165-100-DCR1A</td>
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<td>DEP</td>
<td>October 1966</td>
<td>Plan Accompanying</td>
<td>049-066-000-165-100-LIC1A</td>
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Prepared By: Bourne Consulting Engineering
**Structure Assessment Form**

**Property Owner:**
Local

**Presumed Structure Owner:**
Local

**Owner Name:**
New Bedford

**Location:**
North Terminal Bulkhead

**Based On Comment:**

**Earliest Structure Record:**
1961

**Estimated Reconstruction/Repair Cost:**
$247,500.00

**Length:**
625 Feet

**Top Elevation:**
6 Feet NGVD

**FIRM Map Zone:**
A1

**FIRM Map Elevation:**
6 Feet NGVD

**Primary Type:**
Bulkhead/ Seawall

**Primary Material:**
Concrete

**Primary Height:**
Over 15 Feet

**Secondary Type:**

**Secondary Material:**

**Secondary Height:**

**Structure Summary:**
The cast in place concrete bulkhead has timber fender piles. There is a factory behind the structure. There is minor spalling and cracking in the concrete. Mean high water goes to approximately 10 feet from the top of the bulkhead. The top of the wall contains drainage holes.

**Condition Rating**
Good

**Level of Action**
Minor

**Description**
Structure observed to exhibit very minor problems, superficial in nature. Minor erosion to landform is present. Structure / landform adequate to provide protection from a major coastal storm with no damage. Actions taken to prevent / limit future deterioration and extend life of structure.

**Priority Rating**
High Priority

**Action Description**
Consider for Next Project Construction Listing

**Structure Images:**
049-066-000-165-200-PHO2A.JPG

**Structure Documents:**
MA-DCR
January 1966
Proposed Harbor
049-066-000-165-200-DCR2A

DEP
May 1979
Plan Accompanying
049-066-000-165-200-LIC2A

Prepared By: Bourne Consulting Engineering
CZM Coastal Infrastructure Inventory and Assessment

Structure Assessment Form

Property Owner: Local
Presumed Structure Owner: Local
Owner Name: New Bedford

Location: North Terminal Bulkhead
Based On Comment: 
Earliest Structure Record: 1963

Length: 2300 Feet
Top Elevation: Feet NAVD 88
FIRM Map Zone: A1
FIRM Map Elevation: 6 Feet NGVD

Primary Type: Bulkhead/ Seawall
Primary Material: Steel
Primary Height: Over 15 Feet
Secondary Type: 
Secondary Material: 
Secondary Height: 

Structure Summary:
The steel sheet pile bulkhead has a concrete cap and timber fender piles on it. Behind the structure is a storage area for sand and gravel as well as warehouses and buildings. There is moderate corrosion at the tidal zone of the sheet piles.

Condition Rating
C Fair
Level of Action Description Moderate
Structure is sound but may exhibit minor deterioration, section loss, cracking, spalling, undermining, and/or scour. Structure adequate to withstand major coastal storm with little to moderate damage. Actions taken to reinforce structure to provide full protection from major coastal storm and for extending life of structure. Moderate wind or wave damage to landform exists. Landform may not be sufficient to fully protect shoreline during a major coastal storm. Actions taken to provide addition material for full protection and extended life.

Priority Rating
II Low Priority
Action Description
Inshore Structures Present with Limited potential for Significant Infrastructure Damage

Structure Images:
049-066-000-165-300-PH03A.JPG

Structure Documents:
DEP June 1963 Plan Accompanying 049-066-000-165-300-LIC3A
DEP December 1 Plan Accompanying 049-066-000-165-300-LIC3B
DEP March 1966 Plan Accompanying 049-066-000-165-300-LIC3C

Prepared By: Bourne Consulting Engineering
Section II - New Bedford

Part C

Structure Photographs
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<th>BCE Structure No</th>
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<th>Contract/ Drawing Number</th>
<th>Entity</th>
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Section II - New Bedford

Part D

Structure Documents

TOWN DOCUMENT LIST

MA DCR - DOCUMENT LIST

MA DEP – Ch 91 DOCUMENT LIST

- Copies of License Documents

USACE – PERMIT DOCUMENT LIST

- Copies of Permit Documents
No City Documents for the City of New Bedford
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<td>Extreme high risk for flooding.</td>
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<td>2</td>
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<td>Moderate risk for flooding.</td>
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<tr>
<td>3</td>
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<tr>
<td>4</td>
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<td>Very low risk for flooding.</td>
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**Note:** The table above provides a summary of flood risk levels in New Bedford, Massachusetts. The locations are categorized by their risk levels, with each category indicating the probability of flooding in that area.

**Explanation:**
- **Block No.** This column lists the unique identifiers for each location.
- **Location** indicates whether the location is in New Bedford or a specific area within New Bedford.
- **Description** specifies the flood risk level, ranging from 'Extreme high risk for flooding' to 'Very low risk for flooding.'
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<td>January 1968</td>
<td>New Bedford</td>
<td>9 North Half of West Rodney French Boulevard and Poor Farm to City Pier of East Rodney French Boulevard - Shore Protection</td>
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<td>January 1968</td>
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<td>060-047-000-203-100</td>
<td>Proposed Timber Whit - Building and Dwelling - New Bedford</td>
<td>April 1939</td>
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<td>Proposed Pier Alteration - State Pier - New Bedford</td>
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<td>Proposed Pier Repairs - State Pier - New Bedford</td>
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<td>Proposed Habitats and Sites Work - New Bedford State Pier - State Pier - New Bedford</td>
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<td>10 Ferry Terminal - Retaining Walls</td>
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PLAN ACCOMPANYING THE PETITION OF CITY OF NEW BEDFORD MASS. TO ERECT BULKHEAD, DREDGE AND PLACE FILL IN BUZZARDS BAY

19 JUNE 1967
SHEET 2 OF 2

LICENSE PLAN NO: 5271
APPROVED BY DEPARTMENT OF PUBLIC WORKS
JULY 26, 1967
PLAN ACCOMPANYING THE PETITION OF
CITY OF NEW BEDFORD, MASS.
TO CONSTRUCT SEAWALL DREDGE
PLACE FILL AND INSTALL 72"
OUTFALL IN BUZZARDS BAY

REVISED: 17 SEPT. 1970 SHEET 1 OF 3
PLAN ACCOMPANYING THE
PETITION OF
CITY OF NEW BEDFORD MASS.
TO CONSTRUCT A SEAWALL, DREDGE
PLACE FILL AND INSTALL A 72"
OUTFALL IN BUZZARDS BAY
REvised: 17 SEPT 1970
SHEET 3 OF 3
PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS. JUNE 1991
NEW OUTLET FOR
STORM DRAINS ONLY
INV. ELEV. -4.3(I)

New Bedford
Outer Harbor

LOCATION OF EXISTING
PRIMARY TREATMENT FACILITY
TO BE DEMOLISHED

LOCATION OF CUTTING
POINT FOR OUTFALL
REHABILITATION,
TEMPORARY STAGING,
A PILOADING RAMP
AND A 20' HIGH WATER
COLUMN WILL BE
CONSTRUCTED AT THIS
POINT

REPLACE EXISTING
6" PVC DRAIN WITH
NEW 6 PVC DRAIN
OUTLET ELEV. -0.5'

NOTES:
1. ELEVATIONS REFER TO CITY
OF NEW BEDFORD DATUM.
2. IN 1970, CHAPTER 91 LICENSE
NO. 5793 WAS ISSUED FOR
FILLING TIDELANDS FOR THE
PRIMARY TREATMENT FACILITY

FACILITY LAYOUT PLAN

SCALE IN FEET

PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
AT A SECONDARY TREATMENT FACILITY,
REHABILITATE AN EXISTING EFFLUENT OUTFALL,
DEMOLISH AN EXISTING WASTEWATER TREATMENT
FACILITY AND CREATE A PARK LOCATED IN THE
VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUNE 1991

LICENSE NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
AT A SECONDARY TREATMENT FACILITY,
REHABILITATE AN EXISTING EFFLUENT OUTFALL,
DEMOLISH AN EXISTING WASTEWATER TREATMENT
FACILITY AND CREATE A PARK LOCATED IN THE
VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUNE 1991

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
D: MAR 06 1992
PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS JUNE 1991
SITE ABUTTERS
CITY OF NEW BEDFORD
WASTEWATER TREATMENT FACILITY
AND TABER PARK

1, 2
CITY OF NEW BEDFORD

3
DENNIS K. AND FAYE E. SILVA, 979 SOUTH RODNEY FRENCH BLVD.

4
MARY R. FRAGA, 963 SOUTH RODNEY FRENCH BLVD.

5
JOAQUIM R. AND SANDRA HARRISON, 951 SOUTH RODNEY FRENCH BLVD.

6
MANUEL V. AND BELLA GOMES FERREIRA, 937 SOUTH RODNEY FRENCH BLVD.

7
ARTHUR AND DOROTHY ST. PIERRE, 861 SOUTH RODNEY FRENCH BLVD.

8
ESTELLA M. BINNING, 875 SOUTH RODNEY FRENCH BLVD.

9
MARGUERITE BRUNELLE, 889 SOUTH RODNEY FRENCH BLVD.

10
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THOMAS KELLEHER, 199 BAYVIEW AVENUE

28
RAYMOND AND JANE OLIVER, 672 SOUTH RODNEY FRENCH BLVD.

29
CITY OF NEW BEDFORD

PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
AT A SECONDARY TREATMENT FACILITY,
REHABILITATE AN EXISTING EFFLUENT OUTFALL,
DEMOLISH AN EXISTING WASTEWATER TREATMENT
FACILITY AND CREATE A PARK LOCATED IN THE
VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUNE 1991

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
PRECAST TOP WITH SLAB
30" BOLTED AND VENTED MH COVER AS SPECIFIED
6" PVC DRAIN PIPE INV. EL. 000
OF MANHOLE
8" PERFORATED PVC DRAIN INV. EL. -050
4-0" I.D. R.C. MH
10'-0"
LENGTH AS REQUIRED
SEE PLANS
SUITEML UNDISTURBED NATURAL SOIL

SECTION B-B
UNDERDRAIN OUTLET DETAILS
NOT TO SCALE
8" PERFORATED PVC DRAIN PIPE
APPROX. EXIST. GROUND SURFACE
9" TEMPORARY CONSTRUCTION DRAIN

SECTION B'-B'
NOT TO SCALE
FACE OF EXIST. STONE WALL (WESTERLY SIDE)
15'-6" (TYP)
EL. 50
EL. 43 (ESTIMATED EXIST. GRADE)
S.S. MH RINGS 12"O.C.
EL. 00
S.S. TRASH RACK
12" SUMP

NOTE: APPROXIMATE ELEVATIONS FROM CITY DATUM
SECTION A-A
STORM DRAIN OUTLET DETAILS
NOT TO SCALE
48" DIA. R.C.P
S=0.0010

APPROX. EXIST. SOIL SURFACE

OPEN END
MATCH GRAFD WITH EXIST. ROCKY SHORE
EXIST SUITABLE PERVIOUS ROCKY AREA FOR DRAINAGE CONNECTION
EXIST ROCKY SEA BOTTOM
NORMAL LOW TIDE ELEV. -3.95
MEAN SEA LEVEL ELEV. -2.55
NORMAL HIGH TIDE ELEV. -0.25

PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS JUNE 1991

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
SECTION C-C
TABER PARK CROSS SECTION

NOTE: APPROXIMATELY 170,000 CY OF MATERIAL EXCAVATED FOR THE CONSTRUCTION
OF THE SECONDARY WASTEWATER TREATMENT FACILITY WILL BE USED TO REGRADE
TABER PARK.

PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
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FACILITY AND CREATE A PARK LOCATED IN THE
VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD,COUNTY OF BRISTOL, MASSACHUSETTS
JUNE 1991

LICENSE PLAN NO. 2895
Accepted by Department of Environmental Protection
MAR 06 1992
Plan accompanying petition of City of New Bedford to construct and maintain drainage outlets at a secondary treatment facility, rehabilitate an existing effluent outfall, demolish an existing wastewater treatment facility and create a park located in the vicinity of Buzzards Bay in the City of New Bedford, County of Bristol, Massachusetts. June 1991.
PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS JUNE 1991
FACILITY LAYOUT PLAN

PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
AT A SECONDARY TREATMENT FACILITY,
REHABILITATE AN EXISTING EFFLUENT OUTFALL,
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FACILITY AND CREATE A PARK LOCATED IN THE
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NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUNE 1991

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
PLAN ACCOMPANYING PETITION OF 
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
AT A SECONDARY TREATMENT FACILITY,
REHABILITATE AN EXISTING EFFLUENT OUTFALL,
DEMOLISH AN EXISTING WASTEWATER TREATMENT
FACILITY AND CREATE A PARK LOCATED IN THE
VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUNE 1991
SITE ABUTTERS
CITY OF NEW BEDFORD
WASTEWATER TREATMENT FACILITY
AND TABER PARK

1. 2
CITY OF NEW BEDFORD

3
DENNIS K. AND FAYE E. SILVA, 979 SOUTH RODNEY FRENCH BLVD.

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CITY OF NEW BEDFORD

PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
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VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUN 1991

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
SECTION C-C
TABER PARK CROSS SECTION

NOTE: APPROXIMATELY 170,000 CY OF MATERIAL EXCAVATED FOR THE CONSTRUCTION OF THE SECONDARY WASTEWATER TREATMENT FACILITY WILL BE USED TO REGRADE TABER PARK.

PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS JUNE 1991
PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS
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REHABILITATE AN EXISTING EFFLUENT OUTFALL,
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JUNE 1991

LOCATION OF EXISTING PRIMARY TREATMENT FACILITY
TO BE DEMOLISHED

LOCATION OF CUTTING POINT FOR OUTFALL
REHABILITATION, TEMPORARY STAGING,
A PIGLOADING RAMP
AND A 20' HIGH WATER COLUMN WILL BE
CONSTRUCTED AT THIS POINT

EXISTING 60" DIA. OUTFALL
3306 LONG
H & L LICENSE #3555

LAWN

NEW OUTLET FOR
STORM DRAINS ONLY
INV. ELEV. -4.3(I)

MATCH LINE SEE SHEET 3 OF 7
SCALE IN FEET
0 200 400 600

NOTES:
1. ELEVATIONS REFER TO CITY OF NEW BEDFORD DATUM.
2. IN 1970, CHAPTER 91 LICENSE NO. 5793 WAS ISSUED FOR
FILLING TIDELANDS FOR THE PRIMARY TREATMENT FACILITY

New Bedford
Outer Harbor

REPLACE EXISTING 6 PVC DRAIN WITH
NEW 6 PVC DRAIN
OUTLE ELEV.-0.5"
FACILITY LAYOUT PLAN

PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS JUNE 1991

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN DRAINAGE OUTLETS AT A SECONDARY TREATMENT FACILITY, REHABILITATE AN EXISTING EFFLUENT OUTFALL, DEMOLISH AN EXISTING WASTEWATER TREATMENT FACILITY AND CREATE A PARK LOCATED IN THE VICINITY OF BUZZARDS BAY IN THE CITY OF NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS JUNE 1991
SITE ABUTTERS
CITY OF NEW BEDFORD
WASTEWATER TREATMENT FACILITY
AND TABER PARK
049-002-000-003-100
049-002-000-004-100
049-003-000-004-200

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VICINITY OF BUZZARDS BAY IN THE CITY OF
NEW BEDFORD, COUNTY OF BRISTOL, MASSACHUSETTS
JUNI 1991
SECTION A-A
STORM DRAIN OUTLET DETAILS
NOT TO SCALE

PLAN ACCOMPANYING PETITION OF
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JUNE 1991

SECTION B-B
UNDERDRAIN OUTLET DETAILS
NOT TO SCALE

SECTION B'-B'
UNDERDRAIN OUTLET DETAILS
NOT TO SCALE

LICENSE PLAN NO. 2895
Approved by Department of Environmental Protection
Date: MAR 06 1992
SECTION C-C
TABER PARK CROSS SECTION

NOTE: APPROXIMATELY 170,000 CY OF MATERIAL EXCAVATED FOR THE CONSTRUCTION OF THE SECONDARY WASTEWATER TREATMENT FACILITY WILL BE USED TO REGRADE TABER PARK.

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JUNE 1991

LICENSE PLAN NO. 2895

Accepted by Department of Environmental Protection
MAR 06 1992
PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN A
SHEET PILE BULKHEAD, FILL AND A
TIMBER PILE AND TIMBER BOARDWALK
IN NEW BEDFORD HARBOR
NEW BEDFORD, MASS.
PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
TO CONSTRUCT AND MAINTAIN A
SHEET PILE BULKHEAD, FILL AND A
TIMBER PILE AND TIMBER BOARDWALK
IN NEW BEDFORD HARBOR
NEW BEDFORD, MASS.
PLAN ACCOMPANYING PETITION OF NEW BEDFORD HARBOR DEVELOPMENT COMM. TO CONSTRUCT AND MAINTAIN BOARDWALK, TIMBER PIER, CONCRETE PIER AND PILES AT STEAMSHIP PIER, ACUSHNET RIVER, NEW BEDFORD, MA. DATE: JUNE 1984
PLAN ACCOMPANYING PETITION OF CITY OF NEW BEDFORD TO CONSTRUCT & MAINTAIN STEEL BULKHEAD, WOOD FENDER SYSTEM, TIE RODS & DEADMEN, FENDER PILES, SOLID FILL AND TO REMOVE EXISTING PIERS & STRUCTURES IN NEW BEDFORD HARBOR, NEW BEDFORD, MASS.

MATERIAL FROM PROPOSED PIER REMOVAL TO BE DISPOSED ON LAND AT CITY LANDFILL SITE (2500 C.Y.) EXISTING CONCRETE PLATFORMS AND PILE SUPPORTS TO BE DEMOLISHED.

TIBBETTS ENGINEERING CORP., NEW BEDFORD, MA.
LICENSE PLAN NO. 275
Approved by Department of Environmental Quality Engineer of Massachusetts
MARCH 3, 1977
CHIEF ENGINEER

COMMUNICATION OF MASSACHUSETTS STATE PIERS

PLAN VIEW
PLAN OF BULKHEAD

SCALE IN FEET

PLAN ACCOMPANYING PETITION OF
CITY OF NEW BEDFORD
OCTOBER 15, 1976
REvised 11/29/76

LICENSE PLAN NO. 275
MARCH 3, 1977
Soundings are in feet and tenths and refer to Mean Low Water.

Approx. 30,000 CY of river mud is to be dredged, dewatered, mixed with clean fill and used for backfill.

Approx. 34,000 CY of water will be displaced between the existing river bottom and the plane of Mean High Water by backfill.

---

PLAN ACCOMPANYING PETITION OF THE CITY OF NEW BEDFORD

CONSTRUCT AND MAINTAIN A STEEL PILE BULKHEAD, FENDER PILES, STORM DRAINAGE, PLACEMENT OF SOLID FILL AND DREDGING IN NEW BEDFORD HARBOR

NEW BEDFORD, MASSACHUSETTS

FEB. 23, 1979

TIBBETTS ENGINEERING CORP. NEW BEDFORD, MA.

LICENSE PLAN NO. 564

Accepted by Department of Environmental Quality Engineering of Massachusetts

MAY 15, 1979

COMMISSIONER
CHIEF ENGINEER
NOTE:
RIVER MUCK AND DREDGE MATERIAL TO BE Dewatered IN CONTAINMENT AREA AND MIXED WITH CLEAN OFFSITE BORROW FOR BACKFILL MATERIAL. ORGANIC SILT TO BE COMPRRESSED BY LOADING OF BACKFILL MATERIAL.

SECTION "A"

CENSE PLAN NO. 564

MAY 15, 1979

SECTION "B"

PLAN ACCOMPANYING PETITION OF THE CITY OF NEW BEDFORD
FEB. 23, 1979

IBBEYTS ENGINEERING CORP NEW BEDFORD, MA.
SECTION "A"

SECTION "B"

DESENCE PLAN NO. 56a

PLAN ACCOMPANYING PETITION OF THE CITY OF NEW BEDFORD
FEB. 23, 1979

IBBETTS ENGINEERING CORP NEW BEDFORD, MA.
PLAN ACCOMPANYING PETITION OF
THE CITY OF NEW BEDFORD
HARBOR DEVELOPMENT COMMISSION
FOR PLACEMENT OF SOLID FILL
IN THE
ACUSHNET RIVER
NEW BEDFORD, MASS
JUNE 1963

LICENSE PLAN NO. 4728
APPROVED BY DEPARTMENT OF PUBLIC WORKS
OCTOBER 8, 1963
PLAN ACCOMPANYING PETITION OF THE CITY OF NEW BEDFORD BY ITS HARBOR DEVELOPMENT COMMISSION TO CONSTRUCT STEEL SHEET BULKHEAD, CONCRETE UNLOADING PLATFORM, STORM DRAINAGE SYSTEMS, TO PLACE SOLID FILL AND DREDGE IN THE ACUSHNET RIVER
NEW BEDFORD, MASS.
MARCH 25, 1966
TIBBETS ENGINEERING CORP.
NEW BEDFORD, MASS.

LICENSE NO. 4699
PROPOSED SOLID FILL (HOT CONSTRUCTED)
PROPOSED 1ST STORM DRAIN
PROPOSED 2ND STORM DRAIN
EXIST 3rd DRAIN
EXIST 30" DRAIN
PROPERTY LINE
LICENSE PLAN NO. 5129
APPROVED BY DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
SEPT. 21, 1965
SOMERVILLE, MASS.
COMMISSIONER - DEPT. OF PUBLIC WORKS

Associate
COMMISSIONERS
<table>
<thead>
<tr>
<th>BCE Structure No</th>
<th>Document No</th>
<th>Contract/ Drawing Number</th>
<th>Entity</th>
<th>Municipality</th>
<th>Data</th>
<th>Title</th>
<th>Sheets</th>
<th>Location</th>
<th>Description</th>
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<td>D49-053-000-120-100</td>
<td>D49-053-000-120-100-COE1A</td>
<td>77-212</td>
<td>USACE</td>
<td>New Bedford</td>
<td>May 1977</td>
<td>Proposed Bulkhead, Solid Fill, Dredging and Demolition in New Bedford Harbor at New Bedford, County of Bristol, Massachusetts - Application by City of New Bedford</td>
<td>2</td>
<td>North of State Pier on MacArthur Drive</td>
<td>Fill with Bulkhead</td>
</tr>
<tr>
<td>D49-095-000-185-100</td>
<td>D49-095-000-185-100-COE1A</td>
<td>79-278</td>
<td>USACE</td>
<td>New Bedford</td>
<td>July 1979</td>
<td>Proposed Steel Sheet Pile Bulkhead, Fender Pile, Storm Challenger, Placement of Solid Fill and Dredging in New Bedford Harbor</td>
<td>3</td>
<td>Costa Avenue</td>
<td>Proposed Fill with Bulkhead</td>
</tr>
</tbody>
</table>
PROPOSED
SEA WALL & FILL
IN NEW BEDFORD
AT PORT RODMAN
COUNTY OF BRISTOL
STATE OF MASS.
APPLICATION BY CITY OF NEW BEDFORD
MAY 1969

SOUNDINGS & ELEV. IN
FEET REFER TO MLW=0.0
BUZZARDS BAY

PROPOSED SEA WALL & FILL IN NEW BEDFORD AT FORT RODMAN, COUNTY OF BRISTOL, STATE OF MASS.

APPLICATION BY CITY OF NEW BEDFORD
CITY OF NEW BEDFORD, MASSACHUSETTS
FORT TABER PARK - PIER RESTORATION
ACOE PGP II PERMIT APPLICATION
PIER PLAN
SEPTEMBER 2003
Figure No. 3
ALUMINUM PICKET RAILING (TYP.)

NEW CAP BEAM
RESET TOP COURSE OF SQUARED STONE MASONRY AS REQUIRED

CRUSHED STONE SUB-BASE SHALL BE SLOPED AS REQUIRED

CHINK ALL Voids & GROUT OPEN JOINTS ABOVE MHW TYPICAL ALL AROUND

PITCH TO DRAIN

EL. 4.47 MIN., 5.48 MAX. (N.B. DATUM)
(~ 7.75 NGVD)

~ ANNUAL HW

MHW ~ -0.2
2.38 NGVD

NGVD = -2.55
MLW = -6.45
-3.9 NGVD

RESET EXISTING STONE FILL TO ASSURE; WELL GRADED, COMPACT MASS & CHINK SURFACE FOR SUB-SURFACE SUPPORT NEW STONE MUST MATCH, TYPE AND SIZE OF EXISTING STONE.

GEOTEXTILE FILTER FABRIC

NOTE: DETAILS AND FEATURES OF SUBSURFACE CONSTRUCTION ARE UNKNOWN.

TYPICAL SECTION
LOOKING OFFSHORE

1/4" = 1'-0"
48-IN DUCKBILL ELASTOMERIC CHECK VALVE INSTALLATION

N.T.S

CITY OF NEW BEDFORD, MASSACHUSETTS
FORT TABER PARK - PIER RESTORATION

DUCKBILL CHECK VALVE
SEPTEMBER 2003
Figure No. 6
NOTE
ELEVATIONS ARE IN FEET AND TENTHS
AND REFER TO PLANE OF MEAN LOW WATER.
MINUS FIGURES SHOW DEPTHS BELOW
THE SAME PLANE.
APPROX. EXISTING GROUND SHOWN THUS
SPLAY AND END SLOPES FOR GROIN ARE 2:1
LOCATION OF PROPOSED WORK IS SHOWN IN RED.
NOTE
Elevations are in feet and tenths and show heights above mean low water. Minus figures show depths below the same plane.
Design for steel reinforcing and for concrete keyways, expansion joints, etc. to be of accepted standards.
Paving for entrance roadway to be of suitable bituminous concrete, applied in two 1/4 inch layers.
Location of proposed work is shown in red.

PROPOSED BOAT RAMP
RODNEY FRENCH BLVD. - WEST
CLARK COVE
NEW BEDFORD - MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS - MASSACHUSETTS
DIVISION OF WATERWAYS
SEPTEMBER 1957

Robert B. Macklin
CHIEF WATERWAYS ENGINEER
**CONTRACT QUANTITIES:**
- Sand Fill: 64,500 C.Y.
- Rip-Rap Removed & Reset: 2,140 Tons
- Rip-Rap (New): 3,880 Tons
- Bedding Stone: 1,720 Tons
- Filter Stone: 1,180 Tons
- Stone for Groyne Extensions: 10,950 Tons
- Stone Mound and Solid Fill: 2,500 C.Y.

**ADJACENT PROPERTY OWNERS:**
1. U.S. Army Corps of Engineer Hurricane Barrier
2. Fort Rodman U.S. Government Military Reservation

**SHEE C.B.G.S. 249 CHART BUZZARDS BAY**

**SCALE IN YARDS**

**PURPOSE:** Shore Protection and Public Recreational Facilities.

**DATUM:** Mean Low Water

**PROPOSED SHORE PROTECTION AND RECREATIONAL IMPROVEMENTS IN CLARK'S COVE NEW BEDFORD COUNTY OF: BRISTOL STATE: MASS. APPLICATION BY: CITY OF NEW BEDFORD APRIL 15, 1977**

**PREPARED BY TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.**
NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

SECTION A-A

SECTION B-B

APPLICATION BY:
CITY OF NEW BEDFORD

PREPARED BY: TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.
NOTE
ELEVATIONS ARE IN FEET AND TENTHS
AND SHOW HEIGHTS ABOVE PLANES OF
MEAN LOW WATER, MINUS FIGURES SHOW
DEPTHS BELOW THE SAME PLAN.
DESIGN FOR STEEL REINFORCING AND FOR
CONCRETE KEYWAYS, EXPANSION JOINTS, ETC.
TO BE OF ACCEPTED STANDARDS.
PAVING FOR ENTRANCE ROADWAY TO BE OF
SUITABLE BITUMINOUS CONCRETE, APPLIED
IN TWO 1/2 INCH LAYERS.
LOCATION OF PROPOSED WORK IS SHOWN
IN RED.

PROPOSED BOAT RAMP
RODNEY FRENCH BLVD.-WEST
CLARK COVE
NEW BEDFORD- MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
SEPTEMBER 1957
Robert R. Martin
CHIEF WATERWAYS ENGINEER
NOTE
APPROX. SURFACE OF EXISTING GROUND IS SHOWN THUS,
DESIGN FOR STEEL REINFORCING AND FOR CONCRETE KEYWAYS, EXPANSION JOINTS, ETC. TO BE OF ACCEPTED,APPROVED STANDARDS.
PAVING FOR ENTRANCE ROADWAY AND APPROACH SLOPE TO BE OF SUITABLE BITUMINOUS CONCRETE IN TWO 1/2 INCH LAYERS, A TOTAL OF 3 INCHES.

PROPOSED BOAT RAMP
RODNEY FRENCH BLVD.-WEST
CLARK COVE
NEW BEDFORD - MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS, MASSACHUSETTS
DIVISION OF WATERWAYS
SEPTEMBER 1957

Robert A. Moak
CHIEF WATERWAYS ENGINEER
**CONTRACT QUANTITIES:**
- SAND FILL: 64,600 C.Y.
- RIP-RAP REMOVED & RESET: 2140 TONS
- RIP-RAP (NEW): 3,680 TONS
- BEDDING STONE: 1,720 TONS
- FILTER STONE: 1,180 TONS
- STONE FOR GROIN EXTENSIONS: 10,950 TONS
- STONE MOUND AND SOLID FILL: 2,500 C.Y.
- FOR ADDITIONAL QUANTITIES SEE FORM 4345.

**ADJACENT PROPERTY OWNERS:**
1. U.S. ARMY CORPS OF ENGINEER HURRICANE BARRIER
2. FORT RODMAN U.S. GOVERNMENT MILITARY RESERVATION

**THE SHEET NB:**
- RICHARD SILVERA
- PROFESSIONAL ENGINEER

**NOTE:** PROPOSED MONTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

**PURPOSE:** SHORE PROTECTION AND PUBLIC RECREATIONAL FACILITIES.

**DATUM:** MEAN LOW WATER

**PROPOSED SHORE PROTECTION AND RECREATIONAL IMPROVEMENTS IN CLARK'S COVE**

**NEW BEDFORD**

**COUNTY OF: BRISTOL STATE: MASS.**

**APPLICATION BY:** CITY OF NEW BEDFORD

**APRIL 15, 1977**

**PREPARED BY TIBBETTS ENGINEERING CORP NEW BEDFORD, MASS.**
NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.
PROPOSED BOAT RAMP PROFILE

Typical Boat Ramp Section

Typical Groin Section

Typical Rip-Rap Section


Application by: City of New Bedford
NOTE
APPROX. SURFACE OF EXISTING GROUND IS SHOWN THUS.
DESIGN FOR STEEL REINFORCING AND FOR CONCRETE KEYWAYS, EXPANSION JOINTS, ETC. TO BE IN ACCORDANCE WITH APPROVED STANDARDS.
PAVING FOR ENTRANCE ROADWAY AND APPROACH SLOPE TO BE OF SUITABLE BITUMINOUS CONCRETE IN TWO 1/2 INCH LAYERS, A TOTAL OF 3 INCHES.

PROPOSED BOAT RAMP
RODNEY FRENCH BLVD.-WEST
CLARK COVE
NEW BEDFORD - MASS. 
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS - MASSACHUSETTS
DIVISION OF WATERWAYS
SEPTEMBER 1957

Robert B. Nash
CHIEF WATERWAYS ENGINEER
PURPOSE: Shore protection and public recreational facilities.

DATUM: Mean Low Water

PROPOSED SHORE PROTECTION AND RECREATIONAL IMPROVEMENTS IN CLARK'S COVE
NEW BEDFORD
COUNTY OF: BRISTOL STATE: MASS.
APPLICATION BY: CITY OF NEW BEDFORD
APRIL 15, 1977

PREPARED BY TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.
NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

APPLICATION BY:
CITY OF NEW BEDFORD

PREPARED BY: TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.
NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.
CONTRACT QUANTITIES:
BAND FILL: 84,500 C.Y.
RIP-RAP REMOVED & RESET: 2,140 TONS
RIP-RAP (NEW): 3,580 TONS
BEDDING STONE: 1,720 TONS
FILTER STONE: 118 TONS
STONE FOR GROIN EXTENSIONS: 10,950 TONS
STONE MOUND AND SOLID FILL: 2,500 C.Y.
FOR ADDITIONAL QUANTITIES SEE FORM 4345.

SHEET

ADJACENT PROPERTY OWNERS:
1. U.S. ARMY CORPS OF ENGINEER HURRICANE BARRIER
2. FORT RODMAN U.S. GOVERNMENT MILITARY RESERVATION

NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

PURPOSE: SHORE PROTECTION AND PUBLIC RECREATIONAL FACILITIES.

DATUM: MEAN LOW WATER

PROPOSED SHORE PROTECTION AND RECREATIONAL IMPROVEMENTS IN CLARK'S COVE NEW BEDFORD COUNTY OF: BRISTOL STATE: MASS. APPLICATION BY: CITY OF NEW BEDFORD APRIL 15, 1977

PREPARED BY TIBBETTS ENGINEERING CORP NEW BEDFORD, MASS.
CLARK'S COVE

PROP RIP-RAP (NEW & RESET)

PROP STONE MOUND & SOLID FILL

PROP REPAIRS TO EXIST. BOAT RAMP

PROP RIP-RAP (NEW & RESET)

NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

SECTION A-A

SECTION B-B

APPLICATION BY:
CITY OF NEW BEDFORD

PREPARED BY: TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.
NOTE
ELEVATIONS ARE IN FEET AND TENTHS
AND SHOW HEIGHTS ABOVE PLANE OF
MEAN LOW WATER, MINUS FIGURES
SHOW DEPTHS BELOW SAME PLANE.
SEE SHEET 4 FOR SAND FILL SECTIONS,
LOCATION OF PROPOSED WORK SHOWN
IN RED.

PROPOSED
SAND FILL AND GROINS
RODNEY FRENCH BLVD.-WEST
CLARK COVE
NEW BEDFORD, MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS, MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 1958

CHIEF WATERWAYS ENGINEER
NOTE
ELEVATIONS ARE IN FEET AND TENTHS AND SHOW HEIGHTS ABOVE PLANE OF MEAN LOW WATER. MINUS FIGURES SHOW DEPTHS BELOW THE SAME PLANE. SEE SHEET 4 FOR PROFILE-SECTIONS. LOCATION OF PROPOSED WORK SHOWN IN RED.
NOTE
ELEVATIONS ARE IN FEET AND TENTHS AND SHOW HEIGHT ABOVE PLANE OF MEAN LOW WATER. MINUS FIGURES SHOW DEPTHS BELOW SAME PLANE. SEE SHEET 4 FOR PROFILE SECTIONS.
LOCATION OF PROPOSED WORK SHOWN IN RED.

PROPOSED
SAND FB L (1) GRUNES
RODNEY FRENCH BLVD. - WEST
CLARK COVE
NEW BEDFORD, MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 1958

CHIEF WATERWAYS ENGINEER
NOTE
ELEVATIONS IN FEET AND TENTHS
REFER TO PLANE OF MEAN LOW WATER.
APPROX. EXISTING GROUND
SEE SHEETS 1, 2, AND 3 FOR PLAN VIEWS.
OUTER LIMITS OF WORK TO BE DONE
ARE SHOWN IN RED.

PROPOSED
SAND FILL 3RD GROINS
RODNEY FRENCH BLVD. -- WEST
CLARK COVE
NEW BEDFORD, MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS, MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 1958

[Diagram of proposed groins and other features, including elevations and dimensions.]

049-011-000-030-400
049-009-000-286-200
CONTRACT QUANTITIES:
- BAND FILL: 64,600 C.Y.
- RIP-RAP REMOVED & RESET: 2,140 TONS
- RIP-RAP (NEW): 3,880 TONS
- BEDDING STONE: 1,720 TONS
- FILTER STONE: 1,080 TONS
- STONE FOR GROIN EXTENSIONS: 10,950 TONS
- STONE MOUND AND SOLID FILL: 2,500 C.Y.

FOR ADDITIONAL QUANTITIES SEE FORM 4345.

SHEET
ADJACENT
PROPERTY OWNERS:
1. U.S. ARMY CORPS OF ENGINEER HURRICANE BARRIER
2. FORT RODMAN
   U.S. GOVERNMENT
   MILITARY RESERVATION

NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

PURPOSE: SHORE PROTECTION AND PUBLIC RECREATIONAL FACILITIES.

DATUM: MEAN LOW WATER

PROPOSED SHORE PROTECTION AND RECREATIONAL IMPROVEMENTS IN CLARK'S COVE
NEW BEDFORD
COUNTY OF: BRISTOL STATE: MASS.
APPLICATION BY: CITY OF NEW BEDFORD
APRIL 15, 1977

PREPARED BY TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.
NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.
PROPOSED BOAT RAMP PROFILE

TYPICAL BOAT RAMP SECTION

TYPICAL GROIN SECTION

TYPICAL RIP-RAP SECTION
NOTE

ELEVATIONS ARE IN FEET AND TENTHS AND SHOW HEIGHTS ABOVE PLANE OF MEAN LOW WATER. MINUS FIGURES SHOW DEPTHS BELOW SAME PLANE. SEE SHEET 6 FOR SAND FILL SECTIONS LOCATION OF PROPOSED WORK SHOWN IN RED.

PROPOSED
SAND FILL AND GROINS
RODNEY FRENCH BLVD. - WEST
CLARK COVE
NEW BEDFORD, MASS.
APPLICATION BY DEPARTMENT OF PUBLIC WORKS, MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 4, 1958

CHIEF WATERWAYS ENGINEER
NOTE
ELEVATIONS ARE IN FEET AND TENTHS
AND SHOW HEIGHTS ABOVE PLANE OF
MEAN LOW WATER. MINUS FIGURES
SHOW DEPTHS BELOW THE SAME PLANE.
SEE SHEET 6 FOR PROFILE-SECTIONS.
LOCATION OF PROPOSED WORK SHOWN
IN ABD.

PROPOSED
SAND FILL & GROINS
RODNEY FRENCH BLVD.-WEST
CLARK COVE
NEW BEDFORD, MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 1958

CHIEF WATERWAYS ENGINEER
NOTE
ELEVATIONS ARE IN FEET AND TENTHS
AND SHOW HEIGHT ABOVE PLANE OF
MEAN LOW WATER. MINUS FIGURES
SHOW DEPTHS BELOW SAME PLANE.
SEE SHEET 4 FOR PROFILE-SECTIONS.
LOCATION OF PROPOSED WORK SHOWN
IN RED.

PROPOSED
SAND FI. L 2 RD GRINS
RODNEY FRENCH BLVD. - WEST
CLARK COVE
NEW BEDFORD-MASS.
APPLICATION BY
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 1958

[Signature]
CHIEF WATERWAYS ENGINEER
NOTE
ELEVATIONS IN FEET AND TENTHS
REFER TO PLANE OF MEAN LOW WATER,
APPROX. EXISTING GROUND TUBULUS.
SEE SHEETS 1, 2, AND 3 FOR PLAN VIEWS.
OUTER LIMITS OF WORK TO BE DONE
ARE SHOWN IN RED.

PROPOSED SAND FILL AND GROINS
RODNEY FRENCH BL'VD. - WEST
CLARK COVE
NEW BEDFORD, MASS.
APPLICATION TO
DEPARTMENT OF PUBLIC WORKS OF MASSACHUSETTS
DIVISION OF WATERWAYS
MAY 1958

PROPOSED GROIN EXTENSIONS
Contract Quantities:
- Sand Fill: 84,500 C.Y.
- Rip-Rap Removed & Reset: 2,140 Tons
- Rip-Rap (New): 3,680 Tons
- Bedding Stone: 1,720 Tons
- Filter Stone: 1,160 Tons
- Stone for Groin Extensions: 10,950 Tons
- Stone Mound and Solid Fill: 2,500 C.Y.
- For additional quantities see form 4345.

Sheet

Adjacent Property Owners:

1. U.S. Army Corps of Engineer Hurricane Barrier
2. Fort Rodman U.S. Government Military Reservation

Purpose:
- Shore Protection and Public Recreational Facilities.

Datum: Mean Low Water

Provisional Shore Protection and Recreational improvements in Clark's Cove
New Bedford
County of: Bristol State: Mass.
Application by: City of New Bedford
April 15, 1977

NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

APPLICATION BY:
CITY OF NEW BEDFORD

PREPARED BY: TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.
PLAN

NOTE: PROPOSED MORTAR PATCH OF EXISTING SEAWALL AS REQUIRED.

SECTION A - A

SECTION B - B

APPLICATION BY:
CITY OF NEW BEDFORD
NOTES:
1) Soundings are in feet and tenths and refer to the plane of Mean Low Water.
2) Approximately 3,500 cubic yards of fill will be placed.

PLAN
PURPOSE:
DEVELOP AND IMPROVE RECREATIONAL BOATING FACILITY

SCALE: 1" = 60'

0 20 60
PROP TIMBER PIER

PROP SOLID FILL

EXIST BIT. CONC. PAVE

EXIST 30" R.C.P.
SEWER

EXTEND EXIST. SEWER

EXIST RIPRAP

NEW BEDFORD OUTER HARBOR

COUNTY OF BRISTOL STATE OF MA

APPLICATION BY: CITY OF NEW BEDFORD

TIBBETTS ENGINEERING CORP
NEW BEDFORD, MA

DATE: JAN. 30, 1981
REvised: MAR. 10, 1981

City of New Bedford
Hurricane Barrier

Exist. 12" Storm Drain

PROP SOLID FILL

EXIST RIPRAP

PROP CONC. APRON

7'

15'

15'

36'

PIMENTAL

PREP TIPPIER
NOTES:
1) Soundings are in feet and tenths and refer to the plane of Mean Low Water.
2) Approximately 3,500 cubic yards of fill will be placed.

PURPOSE:
Develop and Improve Recreational Boating Facility

DATE:
JAN. 30, 1981

REvised:
MAR. 10, 1981

TIBBETTS ENGINEERING CORP.
NEW BEDFORD, MA.

PROPOSED TIMBER PIER, SOLID FILL, AND PARKING FACILITIES IN NEW BEDFORD OUTER HARBOR AT NEW BEDFORD COUNTY OF BRISTOL STATE OF MA. APPLICATION BY: CITY OF NEW BEDFORD
**Contract Quantities:**
- Sand Fill: 84,800 C.Y.
- Rip-Rap Removed & Reset: 2,140 Tons
- Rip-Rap (New): 3,580 Tons
- Bedding Stone: 1,720 Tons
- Filter Stone: 1,180 Tons
- Stone for Groat Extensions: 10,950 Tons
- Stone Mound and Solid Fill: 2,900 C.Y.

For additional quantities see Form 4345.

**Adjacent Property Owners:**
1. U.S. Army Corps of Engineer Hurricane Barrier
2. Fort Rodman
   U.S. Government Military Reservation

**Purpose:**
Shore protection and public recreational facilities.

**Datum:**
Mean Low Water

**Proposed Shore Protection and Recreational Improvements in Clark's Cove**

**City of New Bedford**

**Application by:**
City of New Bedford

**Prepared by:**
NOTE: MATERIAL TO BE DREDGED, 2500 C.Y.
DREDGED MATERIAL TO BE DISPOSED ON LAND AT CITY LANDFILL SITE

COMMONWEALTH of MASSACHUSETTS
(State Pier)

PLAN VIEW

PROPOSED BULKHEAD, SOLID FILL, DREDGING & DEMOLITION IN NEW BEDFORD HARBOR AT NEW BEDFORD COUNTY OF BRISTOL STATE OF MASS.
APPLICATION BY: CITY OF NEW BEDFORD

PURPOSE: PUBLIC DOCKING FACILITY
DATUM: MEAN LOW WATER
NOTE:

RIVER MUCK AND DREDGE MATERIAL TO BE DEWATERED IN CONTAINMENT AREA AND MIXED WITH CLEAN OFFSITE BORROW FOR BACKFILL MATERIAL. ORGANIC SILT TO BE COMPRESSED BY LOADING OF BACKFILL MATERIAL.

APPROX. 30,000 CUBIC YARD OF RIVER MUD WILL BE DREDGED

SECTION "A"

SECTION "B"

APPLICATION BY:
THE CITY OF NEW BEDFORD

TIBBETTS ENGINEERING CORP. NEW BEDFORD, MASS.