PREPARED FOR:

NEW BEDFORD HARBOR DEVELOPMENT COMMISSION

VISUAL INSPECTION FINDINGS REPORT

PORT OF NEW BEDFORD

BUTLER FLATS LIGHT STATION



February 2014

PARE CORPORATION

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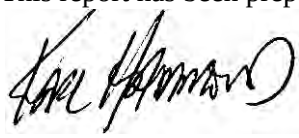
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INSPECTION FINDINGS REPORT
BUTLER FLATS LIGHT STATION

NEW BEDFORD HARBOR
MASSACHUSETTS

A. INTRODUCTION

This report presents the findings of a visual condition inspection and assessment of the Butler Flats Light Station, located in the mouth of the Acushnet River off of East Rodney French Boulevard in New Bedford, Massachusetts. Pare Corporation (PARE) completed the inspection of the Light Station at the request of and under contract to the New Bedford Harbor Development Commission. The inspection was completed on August 12, 2013.

The purpose of the inspection and the Inspection Findings Report is to provide the New Bedford Harbor Development Commission and the City of New Bedford with an understanding of the present condition of the Light Station, including deficiencies and recommended repairs, and an opinion of probable cost to restore the structure to its original condition.

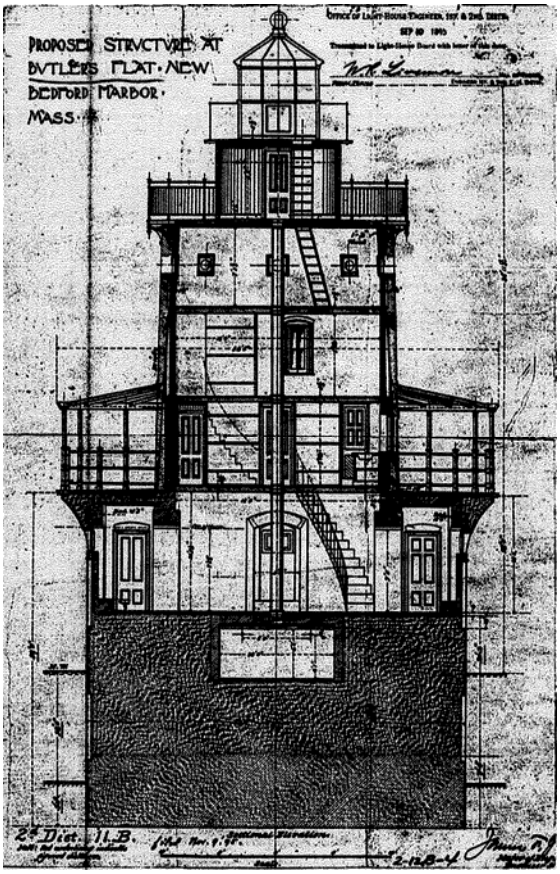
B. GENERAL

The inspection of the Butler Flats Light Station was performed by Pare Corporation (PARE) professional engineering staff, experienced in the condition inspection and assessment of waterfront structures. The facility was inspected on August 12, 2013, from a boat and from accessible areas of the structure itself. Photographs in Appendix A document conditions at the time of the inspection. An underwater investigation was not carried out as part of this inspection.

Review of existing information indicates that the Butler Flats Light Station was originally constructed in 1898, utilizing a 35 foot diameter cast iron caisson structure filled with concrete and stone as a foundation. The caisson bears on hardpan approximately 17 feet below Mean Low Water, achieved with removal of approximately 5 feet of dredged material. The Light Station is a “sparkplug style” brick and cast iron structure, and was last painted in 1998.

The superstructure is comprised of seven interior levels including a basement, main deck and kitchen/engine room, parlor, sleeping quarters, watchroom and deck, and lantern room. The walls of the structure are comprised of brick masonry, with the deck and railings of cast iron construction.

The facility was previously inspected in 1989 by Dyer/Brown and Associates, Inc. Architects. A copy of this inspection report is provided in the appendices, and provides a good historical overview of the facility.





C. INSPECTION FINDINGS AND RECOMMENDATIONS FOR RESTORATION

The following conditions and deficiencies were observed during the inspection of the Light Station structure. It is understood that the Light Station has been neglected, likely since 1998, and the harsh marine environment has resulted in the significant corrosion of the cast iron, in general. The brick masonry walls were noted to be in generally good condition, with few exceptions as noted. Photographs in Appendix A document the observed conditions.

Exterior components:

- The cast iron caisson shell (at the base of the structure) was observed to be significantly corroded and deteriorated. Breaks at the welds were observed near the high water line, and evidence of previous patching was observed. As the cast iron shell serves to protect the concrete foundation from ice and water damage, it is recommended that repairs be carried out to maintain and restore this function. It has been assumed that the concrete foundation is intact and performing as intended, as no differential settlement or cracking of the structure was noted. Repairs to the cast iron caisson shell should consist of inspection, blast cleaning, welding, patching, and the application of an epoxy paint. An underwater inspection will need to be provided as part of the inspection of the cast iron, and repairs completed as required.

- The north access ladder was observed to be in poor condition, and at the time of inspection, was

only accessible during periods of high tide. The welded connections were observed to be corroded, and the ladder was noted to be nearing the end of its useful life. Since the time of inspection, the ladder has further deteriorated such that it is presently considered un-usable and unsafe. It is recommended that the ladder be removed and replaced with a new ladder. Similarly, the south access ladder requires replacement.

- Along the main deck, the cornice (along the edge of the deck), the handrail and roof support posts are cast iron. Some items are more severely corroded than others, however the extent of corrosion is such that significant repairs are required. In particular, the southern area of the main deck, at the access location, the cornice is completely missing for about 20 feet, and severely corroded for an additional length. One roof support post is broken off at the base, the concrete deck was observed to be broken. Numerous sections of the handrail are missing. Major repair and replacement is required in this area, as the replacement of the cornice will require the removal of the roof support posts and railing. Additionally, repairs to corroded handrail components are required. If the Light Station is to be considered for public access, it is recommended that the railing be replaced in its entirety.

- The main deck roof structure was observed to be in generally fair condition, with no major deficiencies noted. Corrosion was observed on the underside of the roofing and at the roof supports. It is recommended that these components be blast cleaned and epoxy painted.

- The main body of the Light Station is brick masonry, which was observed to be in generally good condition. It is recommended that the masonry walls be cleaned and painted.

- The watch gallery deck is cast iron diamond plate, with a cornice and handrail supported by cast iron brackets. The cast iron deck plate was observed to be in generally good condition. The support brackets were observed to be corroded and broken, and the handrailing was observed to have significant corrosion. It is recommended that the watch gallery deck be replaced in its entirety.

- The lantern gallery deck and railing are cast iron. The diamond plate decking was observed to be slightly corroded. Similarly the handrail was observed to be corroded, with section loss observed at the base of the vertical posts and along the handrail itself. It is recommended that the lantern gallery deck be cleaned, painted, with the handrail and posts repaired as necessary.

- The lantern housing was observed to be in generally fair condition. Some separation of the roof and flashing members were observed. Water staining and corrosion was observed on the inside the structure. It is recommended that the lantern housing be cleaned, sealed and epoxy painted.

Interior Components:

- The brick masonry walls were observed to be in generally good condition. Cleaning and painting of the walls will be required.

- Windows were observed to be in generally good condition, with cleaning and painting required.

- Doors were observed to be in fair condition. The watchroom door was seized and could not be opened. The doors exhibited some corrosion and require cleaning and painting. Wooden thresholds were observed to be deteriorated.

- The interior plywood floors and ceilings were observed to have peeling paint, and appeared to have moisture issues. Mold was thought to be present, especially in the kitchen area. Removal and replacement of the wood and plywood floors and wall partitions is recommended.

Utilities:

- Electrical service is provided to the Light Station from shore. The electrical system was observed to be energized, however the condition of the electrical system was not considered as part of this inspection.
- The Light Station is provided with a cistern for the holding of fresh water. The condition of the cistern was not included as part of this inspection.
- The existing sanitary sewer system is suspected to discharge directly into the harbor. A chemical toilet was observed at the facility.

D. OPINION OF PROBABLE COST

If the Butler Flats Light Station is to be restored to its original condition, substantial repair and replacement of existing deteriorated components is required. As the site is a remote location, accessible by water only, the rehabilitation effort is made even more difficult. Light Station Restoration Contractors specialize in work of this nature, and it is recommended that their opinion and expertise be sought prior to the preparation of a detailed Light Station restoration scope of work and associated budget.

Based on our understanding of marine construction and industry unit prices, PARE has compiled the following "order of magnitude" opinion of probable cost for the scope of work provided herein. As many factors come into play with construction of this nature, the costs provided are intended to be a guideline only.

1.	Mobilization and Demobilization	$40,000
2.	Crane Barge at $4,000/day for 30 days	$120,000
3.	Repair Cast Iron Caisson Shell, Sandblast, Paint	$100,000
4.	Replace Ladders	$20,000
5.	Main Deck Gallery Cornice, Railing, Posts	$120,000
6.	Masonry Cleaning and Painting	$60,000
7.	Watch Gallery Handrail Replacement	$50,000
8.	Lantern Gallery Handrail Replacement	$30,000
9.	Lantern Housing Cleaning and Painting	$20,000
10.	Cleaning and Painting Interior	$100,000
11.	Replacement of Wood Ceilings, Floors and Walls	$50,000
12.	Cleaning and Painting of Stairs, Handrails	$25,000
	Subtotal Construction	$735,000
	25% Contingency	$184,000
	15% Engineering and Oversight	$110,000
	Total Light Station Restoration	$1,029,000

APPENDIX A – PHOTOGRAPHS



Photo No. 1: View of corroded and deteriorated caisson shell, north ladder and main gallery handrail.



Photo No. 2: View of south ladder and deteriorated handrail posts.



Photo No. 3: View of south face of lighthouse.



Photo No. 4: View of west side of brick masonry superstructure and watch gallery.



Photo No. 5: View of lantern housing and upper galleries.



Photo No. 6: View of deteriorated north ladder.



Photo No. 7: View of deteriorated cornice and handrail on main gallery.



Photo No. 8: View of lantern room.



Photo No. 9: Interior masonry wall and stairs.



Photo No. 10: View of ceiling.



Photo No. 11: Interior walls.



Photo No. 12: Typical basement walls.

APPENDIX B – 1989 INSPECTION REPORT