The New Lighthouse Keepers: A Comparative Analysis of Ownership Structures Under the National Historic Lighthouse Preservation Act Program

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THE NEW LIGHTHOUSE KEEPERs:
A COMPARATIVE ANALYSIS OF OWNERSHIP STRUCTURES UNDER
THE NATIONAL HISTORIC LIGHTHOUSE PRESERVATION ACT PROGRAM

A Thesis
Presented to
the Graduate Schools of
Clemson University and College of Charleston

In Partial Fulfillment
of the Requirements for the Degree
Master of Science
Historic Preservation

by
Jennifer Leeds
May 2017

Accepted by:
Dr. Carter L. Hudgins, Committee Chair
Craig M. Bennett, Jr.
Amalia Leifeste
ABSTRACT

With the automation of lights and rapid advances in navigational technology in the twentieth century, lighthouses became obsolete and fell into deterioration. With a large push by a lighthouse preservation movement in the 1990s, Congress passed the National Historic Lighthouse Preservation Act of 2000 (NHLPA), an amendment to the National Historic Preservation Act (NHPA). This legislation allowed the U.S. Coast Guard, which holds jurisdiction over lighthouse administration, to declare their lighthouses excess and transfer or sell them through a process administered by the National Park Service and General Services Administration. Through an application process, federal agencies, local and state governments, or nonprofit organizations can apply for a no-cost transfer of a lighthouse. If no suitable applicant is found, the lighthouse goes to auction where it is sold to the highest bidder, or a private owner. Between passage of the National Historic Lighthouse Preservation Act in 2000 and the present day, the U.S. Coast Guard transferred ownership of 120 historic lighthouses to governmental, nonprofit, or private owners. This thesis assesses this program by ascertaining, first, which category of ownership participates most actively in the program, and, second, how new owners have resolved the significant responsibilities that come with ownership of a large, complicated historic structure. Evaluation of the results of questionnaires revealed that new owners have met their obligations for repair and maintenance and express satisfaction with their efforts to preserve one of the nation’s most popular building types. By studying the different ownership structures and day-to-day management of the lighthouses, a better understanding was gained of the challenges and rewards of our present day “keepers,” and what needs to be done now and by future generations to preserve these important iconic structures.
DEDICATION

To all lighthouse keepers, past, present, and future.
ACKNOWLEDGMENTS

I would like to thank my thesis committee for their support and encouragement.

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GLOSSARY OF TERMS

This glossary is a compilation of terms that are utilized within this thesis. Many of these organizations and terms listed here have abbreviations, which have been noted.

Advisory Council on Historic Preservation (ACHP) - This was established by the National Historic Preservation Act of 1996, and it is an advisory board that provides “policy advice, interagency coordination, training and education, and the protection of historic properties.”

Department of Interior (DOI) - A federal agency whose mission is to protect America’s cultural heritage and natural resources. DOI oversees several federal agencies including the National Park Service, Bureau of Land Management, and U.S. Fish and Wildlife Service. The agency is led by the Secretary of Interior, a presidential appointed position.

Expression of Interest (EOI) - “Communication from all parties to GSA of interest in acquiring property.”

General Services Administration (GSA) - Established in 1949, a federal agency which mission is “to deliver the best value in real estate, acquisition, and technology services to government and the American people.”

National Environmental Policy Act (NEPA) - An act passed in 1969 which “created a national policy of environmental protection that acknowledged that environmental quality is based on many factors, including the preservation of ‘important historic, cultural, and natural aspects of our national heritage.’”

National Historic Lighthouse Preservation Act (NHLPA) - Passed in 2000 and an amendment to the National Historic Preservation Act, it allowed for the mass transfer of lighthouses across the United States to eligible entities (federal, local/state government, or nonprofit) at no cost. If no eligible candidate is found, the lighthouse is sold to the highest bidder at a GSA-administered auction (private owner).

Glossary of Terms (Continued)

National Historic Preservation Act (NHPA) - parent act of the NHLPA, passed in 1966, it was the largest piece of legislation related to historic preservation. It established several key institutions (State Historic Preservation Offices), programs, (National Register for Historic Places), and regulation (Section 106).

National Park Service (NPS) - established in 1916, a federal agency that “promote[s] and regulate[s] the use of the Federal areas known as national parks, monuments, and reservations...which purpose is to conserve the scenery and the national and historic objects and wildlife therein...for the enjoyment of future generations.”5

Notice of Availability (NOA) - “GSA paperwork package with information about party”6

Report of Excess (ROE) - “A Coast Guard Report to GSA of property excess to service requirements. This will include information about known cooperating groups or lease holders.”7

State Historic Preservation Office (SHPO) - Established by the NHPA, these state organizations conduct surveys of historic properties in their associated states, provides technical advice to federal agencies during Section 106 Review Process, and many other tasks.

Section 106 - Established by the NHPA, it requires federal agencies review and comment on projects associated with historic properties. “Historic” meaning either listed on or eligible for the National Register for Historic Places.

United States Coast Guard (USCG) - Federal organization that has overseen lighthouse administration since 1939 and it is the “principal federal agency responsible for maritime safety, security, and stewardship in U.S. ports and waterways.”8

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7 Ibid.

CHAPTER ONE
INTRODUCTION AND METHODOLOGY

Lighthouses have been a part of America’s built environment since the colonial era. They are one of the most iconic building types in the country and across the world. Lighthouses are distinctive in form as their primary function was to aid ships along their seafaring journeys throughout the day and night. The First Congress of the United States passed their ninth act on August 7, 1789, placing all lighthouses under federal jurisdiction. Throughout the years, lighthouses continued to play a role in America’s history during wars and tumultuous storms. Lighthouses also served and provided symbolic landmarks for their local communities. However, their role changed significantly when the U.S. Coast Guard began to automate lights in the late twentieth century. Now obsolete, lighthouses were decommissioned and became unmanned. Therefore, regular maintenance declined, leaving lighthouses vulnerable to the elements of the sea.9 According to a Senate Report, “there are 633 [existing] lighthouses built before 1939 and classified as historic.”10 With the support of several regional and national lighthouse organizations, Congress passed legislation to preserve historic lighthouses in 2000. The National Historic Lighthouse Preservation Act was the first of its kind in preserving a specific building type across the nation. This thesis will examine the effectiveness of the National Historic Lighthouse Preservation Act

(NHLPA) as a means for protecting and preserving America’s historic lighthouses.

A lighthouse is defined as “a structure built to display a maritime beacon as an aid to navigation that marks a known point, an important place, such as a headland, shoal, or harbor entrance.” These structures have long fascinated visitors. Where does this fascination come from? There are particular qualities that attract visitors to lighthouses. They are tall in height, allowing inhabitants a new perspective along otherwise open coast lines. In many cases, they are the only existing structure along the coast line. Their light can be seen from miles away, both on and off shore. Lighthouses, rarely altered during the twentieth century, are also reflective of their time and place through their materials and retained architectural features. Daymarks, the colorful markings on each lighthouse, further lighthouses’ iconography (Fig. 1.1).

![Figure 1.1 - Iconic daymarks on several lighthouses. From left to right: West Quoddy Light (Maine), Cape Hatteras Light (North Carolina), Hunting Island Light (South Carolina), and South Pierhead Lighthouse (Michigan). The images above display the different colorful daymarks painted on lighthouses for easy identification for mariners (Images from Library of Congress).](image)

As lighthouses became more photographic subjects in the late nineteenth century, visitors flocked to them. In the early 1900s, lighthouses appeared on postcards and cigarette trading cards (Fig. 1.2). Towns, such as Newport, Oregon (Yaquina Head Lighthouse), used their local lighthouse in their signage to create a sense of community identity and unity.\textsuperscript{12}

Lighthouses also appeared in multiple forms of media including film, song, and literature.\textsuperscript{13}

Lighthouses bring a sense of comfort, safety, and nostalgia that few other building types evokes. Even today, enthusiasts continue to tour lighthouses across the United States and abroad. In fact, lighthouse enthusiasts have created their own form of tourism, which has been coined “lighthousing,” and several festivals and “Lighthouse Challenges” occur each year to celebrate lighthouses in regional areas.\textsuperscript{14} Since lighthouses are beloved iconic

\textsuperscript{12}Ibid.

\textsuperscript{13} Blake cites several examples in his article including Henry Wadsworth Longfellow’s poem “The Lighthouse” and the 1992 film “Forever Young.” Most recently, a romance novel and film, “The Light Between Oceans,” features a lighthouse and his wife, who is stationed in a lighthouse in New Zealand. Ed Sheeran, in his most recent album released in 2017, makes reference to lighthouse in his lyrics. (He sings, “She is the lighthouse in the night that will safely guide me home”). Several other subtle references are made throughout popular culture, which heightens their nostalgia.

\textsuperscript{14} “Lighthouse Challenges” are all-weekend events set up by local lighthouse organizations to visit lighthouses within a region. It creates awareness for lighthouse preservation and opens the lighthouses to the public. They are held in several states across the country, and even abroad.

\textbf{Figure 1.2} - 	extit{Postcard of Gay Head Cliffs in Martha’s Vineyard.} The image above is a 1920 postcard of Gay Head Light (Massachusetts), depicting the picturesque setting surrounding the lighthouse (Image courtesy of Library of Congress).
structures, action was called for to preserve these historic light stations.

The *National Historic Lighthouse Preservation Act* followed federal legislation which established preservation as a national priority. Federal acts, such as the *Antiquities Act of 1906* and the *Historic Sites Act of 1935*, set the precedent for this legislation to be enacted for the protection of historic resources. A major piece of legislation for historic preservation was the *National Historic Preservation Act* (NHPA). Enacted in 1966, it established legislation to protect historic and cultural resources across the nation, including historic lighthouses. Unlike previous legislation, this act established federal policy specifically related to historic preservation. This includes the Section 106 Review Process, which requires federal agencies to identify the effects of their actions on historic properties. The act also created important entities that facilitate historic properties including State Historic Preservation Officers (SHPOs), which survey and acknowledge historic properties in their respective states. Also, the Advisory Council on Historic Preservation (ACHP) was established as a separate federal entity under the executive branch to make recommendations to the President and Congress on preservation policy. In addition, the act also established the National Register of Historic Places and the National Historic Landmarks Program, programs which recognize and designate historic properties. The establishment of these federal programs protect historic buildings, including lighthouses, for future generations.

Federal law for historic preservation went a step further with the passing of the

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16 Ibid., 46–51.
National Historic Lighthouse Preservation Act (NHLPA) which specifically ensured the protection of historic lighthouses. In 1996, the Maine Lights Program authorized the U.S. Coast Guard to transfer ownership of twenty-eight lighthouses in Maine to nonprofit organizations and other entities in order to ensure their preservation and regular upkeep. After this program was established, Coast Guard Admiral James M. Loy stated:

You solved a problem for the Coast Guard and for Maine. We have a commitment to keep the lights burning as long as the mariners need them. But the austerity of our budget does not allow us to make a commitment to the preservation of historic structures at a time that we’re running a fleet of ships whose own antiquity rivals that of some of these lighthouses.\(^\text{17}\)

The Maine Lights Program became the model for the NHLPA, affecting lighthouses nationwide.

The National Historic Lighthouse Preservation Act of 2000 (NHLPA) is an amendment to the National Historic Preservation Act of 1966 and was passed on October 20, 2000. The NHLPA was put into place to allow the U.S. Coast Guard (USCG) to convey, or transfer, lighthouses to different organizations through the General Services Administration (GSA). Prior to this act, mechanisms to convey lighthouses did exist but were not specific to this particular building type. In fact, lighthouses were conveyed through the Historic Surplus Program, a program also run by the GSA, which administered the disposal of federal properties deemed excess by government entities. This program continues today as a mechanism for conveying property. Within the Historic Surplus Program, only government

\(^{17}\)Quoted in Dolin, *Brilliant Beacons*, 404.
entities, namely states, counties, and municipalities, are allowed to acquire federal property at no cost. Private developers and nonprofits could only lease and were not allowed to own federal surplus property.18 Nonprofit organizations, clear supporters of lighthouse preservation, could not own lighthouses or make decisions on their preservation under the Historic Surplus Program. In fact, for lighthouse properties, this appeared to be a fatal flaw and a missed opportunity of this particular program. The National Historic Lighthouse Preservation Act resolved this issue by allowing dedicated stewards, such as nonprofits, to own and maintain lighthouses. Since 2001, over one hundred lighthouses across the country have been conveyed to federal agencies, local/state governments, nonprofits, and private owners through this act.19

In order for a lighthouse to be deemed eligible for the National Historic Lighthouse Preservation program, the federal agency who owns the lighthouse, usually the Coast Guard, has to declare the lighthouse as excess property. The lighthouse must then undergo Section 106 review and environmental remediation as established by both the National Historic Preservation Act of 1966 and the National Environmental Policy Act of 1969.20 In addition, a lighthouse must be listed on or be eligible for the National Register for Historic Places in order to participate in the program. Once a lighthouse is deemed excess, the General Services Administration takes over the legal process to transfer the property.

Federal agencies, local/state governments, and nonprofit organizations are the first to apply for a no cost transfer. This allows local organizations to have the opportunity to take ownership and responsibility of the lighthouse. These owners are referred to as steward ownerships. The application process to become a lighthouse steward is administered by the National Park Service. The application includes an extensive, detailed preservation plan for the lighthouses. After the applications have been rated through a numerical system, a panel of National Park Service employees make recommendations to the Secretary of the Interior, who ultimately decides who receives the lighthouse. If no qualified candidate is determined, the lighthouse is sent to public sale and auctioned to the highest bidder.21 Many of the lighthouses which are located a considerable distance off the coast are sold through the public auction process. No qualifications are needed to buy a lighthouse in this case, which is looked upon as a last resort option.

The act has been in place for over fifteen years, making this a great opportunity to evaluate its success in lighthouse preservation. This thesis will inform how the NHLPA is administered and also explore the possibility of similar laws enacted for preservation of other historic structures. In order to learn more about the new stewards, a survey was conducted asking critical questions about maintenance, preservation practices, and financial investment for each of the lighthouses. This survey will help answer many questions about the National Historic Lighthouse Preservation Act including: Has conveyance enabled by the act ensured the preservation of lighthouses? Are the new owners doing a successful job

in their preservation efforts? What have been the challenges for owners? What have been the success stories for owners? What is the financial investment of owning a lighthouse (yearly maintenance costs, large rehabilitation projects)? How are stewards funding projects related to lighthouse preservation? Ultimately, the question on which ownership structure has been the most successful will also be answered. The results from the survey are collected, analyzed and compared by the four types of owners associated with the act: federal government agencies, local/state governments, nonprofit organizations, and private individuals. This study primarily focuses on these owners—the new lighthouse keepers of the 21st century. The success of the NHLPA will be assessed by the actions taken by new owners to preserve these historic beacons by means of the owners’ responses on the survey.

After the data was collected, 50 responses with 52 lighthouses are represented in the data collection, representing almost half of the lighthouses in the program, which presents a comprehensive picture of the results of transfer to new owners and managers.

Following this introduction, the methodology outlines the tasks taken to gather the information and data, with a large focus on the survey. It discusses collection methods, appropriate response rates, and questions included in the survey. Chapter Two reviews the relevant literature related to lighthouse history and lighthouse preservation. The literature will look at the lighthouse preservation issues facing many owners today including funding, large rehabilitation projects, and coastal erosion. Chapter Three discusses an overview of lighthouse history in the United States and will primarily focus on lighthouse administration and management as well as maintenance of lighthouses. This overview
begins with the first lighthouses constructed during the colonial period, and ends with the
decommission of lighthouses during the early twentieth century due to the automation
of lanterns. It also discusses the administrative forces of lighthouses including the U.S.
Lighthouse Establishment, the U.S. Lighthouse Board, the U.S. Lighthouse Service, and
the U.S. Coast Guard. Chapter Four explores federal historic preservation legislation in the
U.S., beginning with the *Antiquities Act of 1906*, and concentrate on the *National Historic
Preservation Act*, the NHLPA’s parent legislation.

Chapter Five focuses on the specifics of the *National Historic Lighthouse
Preservation Act*. The discussion highlights how the legislation was enacted and the various
parties that supported its purpose. It also provides an in depth analysis of the application
process and how the act has been implemented. It also reviews the achievements of the act
as well as legal concerns that arose during the process. This chapter will also look at an
important component, the future of the program and answer the questions: What lighthouses
have not been transferred and why? And how many lighthouses are left that are eligible
for this program? It also briefly considers several other lighthouse preservation projects
in other countries. Chapter Six reviews the data collected from the survey and makes
observations about the trends seen among the different ownership types. This chapter is
divided into several sections including: Types of Owners, Intended Use, Conditions (before
and after), Major Rehabilitation/Restoration Projects, Funding, and Future Preservation
Work. The final chapter, Chapter Seven includes recommendations for the National Park
Service, summing up the data collected, as well as concluding remarks.
The purpose of this thesis is to draw conclusions about the successes and weaknesses of the National Historic Lighthouse Preservation Act of 2000. The National Historic Lighthouse Preservation Act is an important piece of legislation and this study will analyze the four ownership types in their endeavors to preserve these historic structures. This thesis will be submitted to the National Park Service to assist them in their efforts in facilitating this act to both current and future lighthouse owners.

**Methodology**

This study of the National Historic Lighthouse Preservation Act of 2000 applies a multidisciplinary approach to the assessment of the success of the act. This will be completed through preliminary historical research on the history and role of the nation’s lighthouses. Further, evaluation of the legislative history, a process that leads to NHLPA, will be conducted through policy research. The most essential part of the thesis is a survey completed by current lighthouse owners. A full survey of lighthouses conveyed in the National Historic Lighthouse Preservation Act program has not been completed thus far since it was enacted seventeen years ago. The results of the survey are an important tool to understand the ramifications of the National Historic Lighthouse Preservation Act of 2000.

Lighthouses have served mariners as navigational beacons along American coasts since the eighteenth century. Essential to safe navigation, the history and role of lighthouses has been a topic of interest to historians since the early-to mid-nineteenth century. There
is, in addition, a large body of popular writing about lighthouses. While this literature reflects deep popular interest in these structures and wide enthusiasm for their preservation, the purpose of this thesis is to measure the effect of the NHLPA on the preservation of lighthouses, not how public support is reflected in popular publications. The literature on lighthouses is extensive and includes many sub-categories including histories, legislation, and historic structures reports. Since this thesis is primarily concerned with the management and maintenance, historical research focused, first, on developing a understanding of the role of lighthouses from early-eighteenth century to mid-twentieth century, and second, the maintenance and management of America’s lighthouses.

The main repositories for primary source documents related to American lighthouses are located at the National Archives and the U.S. Coast Guard Historian’s Office (both located in the Washington D.C. area) as a result of the historic federal management of these structures. At the National Archives, lighthouse primary source documents are located in Record Group 26. They include the “Records of the Bureau of Lighthouses and its Predecessors 1785-1951.” Records include information on accounting records, lighthouse districts, lighthouse operations, etc. It also includes the “Records of the Life Saving Station 1791–1944” and the “Records of the United States Coast Guard 1859–1986.” These records primarily fall under the federal organizations responsible for lighthouses through the centuries including the U.S. Department of Treasury, the U.S. Lighthouse Board, the U.S. Lighthouse Service, and the U.S. Coast Guard. The U.S. Coast Guard Historian’s

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Office, located in the old St. Elizabeth’s hospital campus (present day headquarters for Department of Homeland Security), is another valuable resource for files on lighthouses during the U.S. Coast Guard’s days of management, which continues today for many lighthouses. Valuable primary resources can be found online on the U.S. Coast Guard’s website including “Instructions to Light-Keepers. July 1881.” During most of America’s history, lighthouses were managed by lighthouse keepers and this 1881 “how-to-guide” delineated the lighthouse keeper’s duties and responsibilities. Instructions included within this manual were repairs and alterations to the station, cleaning the lighting apparatus, and proper painting and whitewashing methods. These guidelines are used to understand how lighthouses were maintained in the past and how this relates to their preservation today.

The National Historic Lighthouse Preservation Act was evaluated in the context of other historic preservation legislation. The legislation includes the National Historic Lighthouse Preservation Act itself, as well as the congressional and committee reports which contain valuable information on the reasoning for creating this act. Other more recent legislation related to preservation was reviewed including the National Historic Preservation Act of 1966 (NHPA) and the Coast Guard Authorization Act of 1996. This study also looks at other federal surplus programs similar to the NHLPA including the Historic Surplus Program and the Federal Lands to Parks program. These programs are noteworthy since they allowed the U.S. Coast Guard to sell their light stations prior to

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the NHLPA. Earlier legislation, such as the Lighthouse Act of 1789, was also reviewed in order to understand what provisions and protection the U.S. government provided for lighthouses in the past.

Research also contrasts the American program with international programs. A summary of these programs addresses who administers them and who owns the lighthouses. This component of the thesis attempts to address the successes and impediments of the effects outside the United States to preserve lighthouses around the world.

The NHLPA created a mechanism to transfer lighthouse ownership away from the U.S. Coast Guard to nonprofit organizations and individuals. The next major step in the process was contacting the major stakeholders in the process including representatives from the U.S. Coast Guard (USCG), the General Services Administration (GSA), the National Park Service (NPS) regional offices, and the current National Park Service NHLPA coordinator, Anna Holloway. Contact with these federal agencies helped to identify their role within the process, provide access to reports, and most important, owner contact information. Another important resource is the Island Institute which is the organization that first initiated and helped pass the Maine Lights Program through the Coast Guard Authorization Act of 1996. This program became the model for the National Historic Lighthouse Preservation Act of 2000. Understanding each of these organizations’ roles and views on this historic act aided in the analysis of the act’s approach and ultimately its successes and shortcomings.

A central component of this thesis is a survey used to collect data from the current owners of lighthouses conveyed through the NHLPA of 2000. Over one hundred lighthouses
A survey is an important tool in the field of historic preservation in order to understand the present conditions and changes in the built environment. This survey is a questionnaire containing thirty questions and collects important data such as the primary building materials, year constructed, and preservation efforts (Fig. 1.3). The survey also addressed the new function of the lighthouse. As they can no longer be used primarily as beacons, many new owners have changed the primary use of the lighthouses to education purposes, museums, bed and breakfasts, and even private residences. In making such changes to use, owners potentially face challenges that they may not have discovered until after they assumed lighthouse ownership. This survey attempts to address those challenges including ongoing maintenance costs, major restoration projects, fundraising, and funding, as well as the satisfaction received from owning a lighthouse. The owners are also asked, if willing, to send pictures (a. at the time of the transfer; b. present-day photo), historic structure reports, and other related documents to the lighthouse. These other documents provided more insight on how lighthouse owners are approaching their preservation and restoration efforts (See Appendix C for full survey).

The survey was primarily emailed to the owners. However, some survey letters were mailed directly or addressed by phone depending on the contact information gathered during the initial process. In the letter, a link to a survey conducted on Survey Monkey was attached where owners could easily fill out the survey. From there, the data was collected.
Figure 1.3 - Survey Monkey Survey Form (First Page)
The image above is the first page of the eight page survey, generated by Survey Monkey showing the format and types of questions asked. (See Appendix C for the full survey) (Image from Survey Monkey).
The National Historic Lighthouse Preservation Act of 2000 (NHLPA) amends the National Historic Preservation Act of 1966 and allows federal agencies, local/state governments, and nonprofit organizations to apply for lighthouses deemed excess by the federal government. If no suitable applicant is found through a stewardship transfer, the lighthouse goes to auction and is given to the highest bidder where a private individual or organization assumes responsibility of the lighthouse. Since the lighthouses are still active aids to navigation, the U.S. Coast Guard still maintains the light. With the automation of the lights in the twentieth century, it was necessary for new lighthouse keepers to maintain the buildings associated with historic light stations. Legislation, such as the Maine Lights Program and the NHLPA, was put into place to find potential stewards. This program is a joint effort between the U.S. Coast Guard, General Services Administration, and the National Park Service to ensure the protection of historic light stations so future generations can enjoy these historic landmarks along America’s coastlines.

In order to learn more about the new lighthouse keepers, I am conducting a survey of owners of lighthouses that have been conveyed through the National Historic Lighthouse Preservation Act of 2000 in order to better understand the management process, renovations undertaken, and the challenges and rewards of ownership. I am also looking at the different types of lighthouses conveyed, what year they were constructed and architectural features. The responses and data submitted through this survey will be used in my thesis and will become a valuable tool in my study. The survey should take no more than fifteen minutes of your time.

Below is a link to my survey:

https://www.surveymonkey.com/r/LighthouseOwners

Please only submit a survey if the lighthouse has been conveyed through the NHLPA.

If you have any questions, please contact me at jleeds@g.clemson.edu.


Figure 1.4 - U.S. Lighthouse Society blog post about NHLPA survey. The above image displays the inquiry posted to U.S. Lighthouse Society’s Wordpress blog, encouraging NHLPA lighthouse owners to fill out the survey prior to the end of data collection (Image: https://uslhs.wordpress.com/2017/01/19/survey-for-owners-of-lighthouses-conveyed-under-nhlp/)
through Survey Monkey. The survey was also posted on a popular lighthouse blog, followed by several lighthouse stewards (Fig. 1.4). The blog is called the U.S. Lighthouse Society News. The society’s blog posts are also published on Facebook, where the survey could also be shared to other owners. Follow up with owners not initially responding was made, targeting specific ownership groups with low response rates or as required. In addition, personal correspondence with several key individuals with lighthouse ownership and management experience was also conducted.

One of the important aspects to be considered was the survey’s response rate. Although it was highly unlikely that all owners would respond to the survey, it was important to receive a certain percentage of responses (approximately 20 to 25%) from each of the four different ownership structures: federal governments, state/local governments, nonprofits, and private. The survey was open for three and a half months. Initial analysis occurred while the survey was opened, highlighting important aspects of the owners’ responses, including challenges and successes. The final data was submitted into a larger database in Microsoft Access, for easy comparison and comprehensive understanding of the data submitted. Conclusions would be drawn about the lighthouses and how they have fared under the National Historic Lighthouse Preservation Act program and whether the act has achieved its goal of preservation.

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25 Survey Monkey is a online website which can be utilized to create online surveys and collects responses for review (https://www.surveymonkey.com).
CHAPTER TWO
LITERATURE REVIEW

This literature review compiles the research and publications conducted on lighthouses and discuss the contributions of the intellectual dialogue on lighthouse history and preservation. The literature on lighthouses is extensive. Admired and cherished by thousands, the fascination and the lore surrounding lighthouses can be seen in this literature. While this study acknowledges the broader popular literature, its purpose is to address two subtopics related to lighthouses—their history and their preservation.

A large amount of literature can be categorized as lighthouse “coffee table” books. These large picture books contain pictures and provide for ultimate lighthouse tourist with a sense of nostalgia and reminiscence. These large coffee table lighthouse books often only feature the most iconic lighthouse structures in the country and the world. Although important to the lighthouse community, these “coffee table” books are only briefly mentioned in the following literature.

Lighthouse History

Many of the early publications on lighthouses focused on beacons of antiquity and European lighthouses, primarily in the mid-to-late nineteenth century. These books primarily focus on lighthouse construction and the types of lighting apparatuses employed
around the world. Many of these publications also include illustrations of lighthouses from around the world. One such example is *The World’s Lighthouses Before 1820* by David Alan Stevenson, which looks at different regions around the world and the evolution of their lighthouses. The book is divided by time periods covering antiquity, medieval, and later periods, divided by centuries until 1820. The text highlights several of America’s early lighthouses and includes detailed illustrations of the earliest lighthouses around the world. Another example of an early text on general world lighthouse history is David Porter Heap’s *Ancient and Modern Lighthouses*, published in 1889. This publication has a detailed description of the construction of several lighthouses in the United States and is unique since it also includes important structural diagrams, previously not seen in earlier texts.

One of the earliest publications on American lighthouses, *The American Pharos, or Guide to American Lighthouses*, was published in 1832 and written by Robert Mills, a Charleston native and prominent architect. This book was a guide for mariners, notifying them of lighthouse locations within their respective waterways in the hopes that they would be safeguarded from dangerous coastlines. Since a “light list,” a comprehensive list of

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lighthouses, was not compiled until 1838, Mill’s publication of lighthouse locations in the United States was the first of its kind. Written with the help of the Department of Treasury and the then current lighthouse administrator Stephen Pleasonton, this book provided valuable early logistic information.

Both lighthouse keepers and administrators authored their own books, including *The Modern Light-house Service*, written by Arnold B. Johnson, a Chief Clerk of the U.S. Lighthouse Board. The publication is a report to Congress on the status of the American lighthouse administration. The work by Johnson is based on Lighthouse Board records and texts such as Heap’s *Ancient and Modern Lighthouses*. The book discusses costs, lighthouse construction, lighthouse personnel, and administration. George R. Putnam, the commissioner of the Bureau of Lighthouses from 1910 to 1939, wrote a book early on in his tenure in 1917 called *Lighthouses and Lightships of the United States*. Putnam stated, “the writer feels it a pleasant obligation to collect in this small volume a brief record of lighthouse work in this country...and to include enough of the personal deeds of the men and women who serve humanity in the lighthouses and on the lighthouse vessels to show the fine spirit which pervades them.” Putnam’s book discusses lighthouses by region and includes additional narratives on other navigational aids including buoys and fog signals. His sources are primarily from texts mentioned earlier and from his own reports in his office.

33 Ibid, iv.
focus to lighthouse personnel and their day-to-day responsibilities. The lives of lighthouse keepers were not easy. Keeping the lighthouse in good working form was arduous and due to their many isolated locations made for a lonely life.

Additional books were written throughout the twentieth century, which reiterate different types of lighthouse construction in the United States and abroad. They also look closely at lighthouse administration and lighting apparatuses including the well-known Fresnel lenses. As Americans became more mobile, regional lighthouse books became more prominent, focusing on a particular state or group of states with many lighthouses, such as in Maine. Furthermore, books on the lives of lighthouse keepers became more prevalent during the twentieth century. Although pretty to look at and interesting to read for pleasure, these regional books contain little pertinent information for use in this study.

Lighthouse books were initially simple, general guides to identify them and their locations around the world. However, beginning in the twentieth century the texts became more specific, investigating individual lighthouses, their operations and their usefulness. As public interest grew and further research was conducted, lighthouse publications increased. This is especially true of the late twentieth and early twenty-first century when lighthouse publication peaked. During this time, several prominent lighthouse historians and experts, such as Francis Ross Holland Jr., wrote multiple lighthouse books. In the 1970s,

Holland wrote the most up-to-date and comprehensive lighthouse history at that time in *America’s Lighthouses: An Illustrated History*. The Chicago Tribune, in one of its reviews of Holland’s work, said his book was “A detailed, scholarly, masterly book...and yet the romance is still there.”37 The photographs and illustrations as well as the stories told are very informative and comprehensive. Continuing his fascination, Francis Ross Holland Jr. wrote several other books on lighthouses in the years that followed.38 Other scholars have studied lighthouses and shared their research in several publications including Candace Clifford and Mary Louise Clifford,39 Elinor DeWire,40 and Bruce and Cheryl Shelton Roberts.41 The publications range from keepers’ stories to regional lighthouse books. Many of these scholars continue to be active in the lighthouse community today, including Candace Clifford, who is currently the Secretary of the U.S. Lighthouse Society.

**Lighthouse Preservation**

It was not until the latter part of the twentieth century that the focus of the literature changed to preservation. In the early 1990’s and up to the present day, many lighthouse authors and government agencies have turned their attention to the light stations’

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38 This is a compilation of several lighthouse texts written by F. Ross Holland Jr.: F. Ross Holland, *Great American Lighthouses* (New York: Wiley, 1994); F. Ross Holland, *Lighthouses* (New York: Barnes & Noble, 1997)
preservation. Several books written by Tim Harrison, *Lighthouse Digest* editor, and Ray Jones, a lighthouse expert, discuss the importance of lighthouse preservation. Many of these books coincide with a major lighthouse preservation movement in the 1990’s, which would eventually lead to the passage of the *National Historic Lighthouse Preservation Act*, the primary focus of this study. One book, *Lost Lighthouses: Stories and Images of America’s Vanished Lighthouses*, focuses on lighthouses that have been destroyed through various means, including fire, storms, demolition, and erosion.\(^{42}\) Another publication, *Endangered Lighthouses: Stories and Images of America’s Disappearing Lighthouses*,\(^ {43}\) coincided with the appearance of *Lighthouse Digest*’s Doomsday List,\(^ {44}\) discusses those lighthouses in danger of ruin. Both of these books were published in the early 2000’s. After conducting research on some of the lighthouses mentioned in this book through local newspaper articles and lighthouse websites, it appears some of these endangered lighthouses have already been preserved for future generations while others still continue to deteriorate, and some have even been totally lost within the past couple of years.\(^ {45}\) Ray Jones and Tim Harrison wrote many other books on lighthouses, that range from histories *The Golden Age of American Lighthouses: A Nostalgic Look at U.S. Lights from 1850 to 1939* to larger general lighthouse books such as the *Lighthouse Encyclopedia*, which contains beautiful


images of these iconic structures.\textsuperscript{46}

Eventually several organizations such as the National Park Service (NPS) and the Association for Preservation Technology International (APT) made important contributions to lighthouse preservation efforts and addressed the preservation, maintenance, and repair of lighthouses. The National Park Service is a federal agency charged with the preservation of historic buildings across the nation and has published the Secretary of Interior’s Standards for Historic Properties, “Preservation Briefs,” and multiple cultural resource management articles and books. Starting in the 1960s, the National Park Service began to produce historic structure reports on lighthouses. A historic structure report provides “documentary, graphic, and physical information about a property’s history and existing condition” and “provides a thoughtfully considered argument for selecting the most appropriate approach to treatment…and outlines a scope of recommended work.”\textsuperscript{47} F. Ross Holland, known for his \textit{American Lighthouse} book, wrote several noteworthy historic structure reports for the National Park Service including one on the Old Point Loma Lighthouse in California and Cape Hatteras Light Station in North Carolina.\textsuperscript{48}

In 1989, the National Park Service released the \textit{NPS Reading List: Preserving Historic}

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Lighthouses - An Annotated Bibliography. This text summarizes all American lighthouse literature up to that point in time including primary sources, histories, preservation-related sources, lighthouse preservation case studies, lighthouse preservation organizations, and reproductions of historic lighthouse specifications.⁴⁹ The publication coincided with the 200th anniversary of the Federal Lighthouse Program and the Bicentennial Lighthouse Fund. The hope was that this book would provide technical assistance to lighthouse owners, architects, and administrative officials to preserve lighthouses properly, according to the Secretary of Interior’s Standards for Historic Properties. This would be the first of many lighthouse publications produced by the National Park Service within the next decade.

A full inventory was completed in 1994 of historic light stations in the United States. The inventory consists of “611 existing historic light stations encompassing 631 existing towers” and provides valuable information for each light station listed.⁵⁰ The listing includes location, important construction dates, ownership status, and current use. Brief descriptions on the tower and other associated buildings such as keeper’s’ quarters and fog signal buildings are included. Prior to listing the individual light stations, graphs explain the inventory in its entirety, including primary construction materials and National Register status. At the time of the survey, the U.S. Coast Guard owned 457 of the 611 total light stations. However, many organizations, including nonprofits at this point in time,

⁵⁰ This inventory does not include lighthouses less than fifty years old including Charleston Light (1960) in South Carolina and Frying Pan Shoal Light (1966), off the coast of North Carolina.
leased the lighthouses from the U.S. Coast Guard and helped with the upkeep.51

In 1996, the *Historic Lighthouse Preservation Handbook* was published summarizing all “lighthouse preservation issues, successful lighthouse maintenance solutions and lessons learned.”52 It was compiled and written by members of the National Maritime Initiative and the Historic Preservation Training Center, both units of the National Park Service. The publication emphasizes regular cyclical maintenance planning and estimating costs for rehabilitation. The handbook states:

Lighthouses are unique structures in that they were originally constructed to endure severe weather. Because they have survived 80 to 100 years, the uninformed public may assume these structures require little or no upkeep. But lighthouses were also designed for a live-in keeper. A trained professional was on hand every day to monitor the condition of the structure and perform the daily maintenance and upkeep required at a functioning light. If there was a catastrophic occurrence, the keeper was there to take immediate action and follow through residual repairs. The keeper was the eyes and ears of the lighthouse. In today’s unmanned stations, this critical light link has been lost.53

This was the first how to guide in assisting owners and organizations maintaining lighthouses on the best preservation practices for lighthouses. By identifying common problems and important lighthouse preservation topics, it was intended to be distributed to lighthouse owners. The handbook presents several case studies of rehabilitation and restoration projects explaining in great detail the process of preservation planning for

53 Ibid.
historic light stations.\textsuperscript{54} It was critical to the preservation movement and continues to be used today.

Similar to the National Park Service’s \textit{Historic Lighthouse Preservation Handbook}, the International Association of Marine Aids to Navigation and Lighthouse Authority (IALA-AISM) published a \textit{Lighthouse Conservation Manual} in 2006, which addressed lighthouse preservation at national and international levels.\textsuperscript{55} The IALA-AISM, is an international nonprofit organization that was established in 1957. This organization “gathers together marine aids to navigation authorities, manufacturers, consultants, and scientific and training institutes from all parts of the world and offers them the opportunity to exchange and compare their experiences and achievements.”\textsuperscript{56}

The IALA-AISM manual provides critical technical information to organizations and stakeholders interested in lighthouse preservation. The manual contains recommendations on how to conserve and operate a successful light station with emphasis on funding, safety, appearance and accessibility. The manual suggests that after developing a conservation management plan, organizations should measure the success of the plan through the following: lighthouse authorities, conservation authorities, local communities, and tourism. These measurement standards are discussed in more detail later in this study as we look at the success of owners of lighthouses under the \textit{National Historic Lighthouse Preservation Act}.

\begin{footnotesize}
\begin{itemize}
  \item \textsuperscript{54} Ibid.
  \item \textsuperscript{55} \textit{IALA Lighthouse Conservation Manual} (Saint-Germain en Laye, France: International Association of Marine Aids to Navigation and Lighthouse Authority, 2006).
\end{itemize}
\end{footnotesize}
Much of the literature that can be found in scholarly journals focuses on one particular lighthouse, explaining its history, construction, and preservation efforts. For example, *Florida Historical Quarterly* published an essay on Anclote Keys Lighthouse. These articles explain why lighthouses are important to maritime heritage, stating, “The structures and the people who tended them became intimately linked to the communities that developed around the aids to navigation.”

In addition, the article describes the difficulty and the “bureaucratic roadblocks” in transferring lighthouses to future owners for their preservation, prior to the *National Historic Lighthouse Preservation Act*. This series of articles could be useful for comparison purposes of the transfer process after the *National Historic Lighthouse Preservation Act* was passed.

The *APT Bulletin*, the Association for Preservation Technology International journal, is an important preservation resource on many topics and includes articles on specific preservation techniques for lighthouses, including even their relocation. Many of these scholarly articles depict the difficult measures taken to preserve a lighthouse. Due to their hostile maritime environments, lighthouses have specific types of deterioration and mechanisms of decay. Prior to the Cape Hatteras Lighthouse being moved, diagnostic testing was conducted in 1987 in order to understand the building’s performance level. The diagnostics identified in this article may help in evaluating the future of the Cape Hatteras Lighthouse and other lighthouses with similar problems.

58 Ibid.
Other scholarly articles discuss specific types of lighthouse construction such as cast iron plate lighthouses and their preservation. While Cape Hatteras was primarily a masonry tower with cast iron lantern and stairs, some off shore lighthouses are composed of cast iron plates. In an *APT Bulletin* article, the author addresses the preservation concerns of this particular lighthouse construction, focusing in on the construction and preservation of Sakonnet Light, off the coast of Rhode Island (Fig. 2.1). The lighthouse was purchased by a non-profit called Friends of the Sakonnet Lighthouse at auction in 1961. The group hired Structures North Consulting Engineers, Inc. in 2004 to inspect the structural capacity and stability of the lighthouse. In their assessment, they noticed large cracks running through the brick lining caused by horizontal racking, several misaligned cast iron plates, multiple cracks in the wall plates and floor plates, and all the bolts had rusted away or were

![Figure 2.1 - Sakonnet Light in Rhode Island (before and after restoration)](http://www.sakonnetlighthouse.org/)

The images above show Sakonnet Light prior to restoration (left) in horrible condition and Sakonnet Light after restoration was completed with improved conditions (right) (Image: http://www.sakonnetlighthouse.org/).
The engineering firm concluded “that Sakonnet had deteriorated to the point that it would likely not withstand another significant storm with seas that even modestly over topped its foundation caisson.” At a minimum, the cost of the project was estimated to be $1 to $1.5 million. The work on Sakonnet Light “would have to be undertaken on what was a weather-threatened, heavily damaged structure in an initially unstable state, at a site that was only marginally accessible and on a very tight budget.”

The article continues on to detail the work completed to stabilize the lighthouse including repairs to the exterior shell and the replacement of the brick liner with reclaimed brick or similar brick. Many of the lighthouses which are a part of the National Historic Lighthouse Preservation Act are of similar construction to Sakonnet Light and have the same initial conditions as well as the preservation work that still needs to be completed. This article aptly expresses the concerns several nonprofits and private individuals are facing today as they are rehabilitating or

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61 Ibid.
restoring their lighthouses.

Lighthouses face the ongoing preservation issue of coastal erosion and sea level rise. The pace of publications on these issues increased in the late twentieth century as global warming became an alarming concern for both historic and modern coastal structures. In a 1974 article, a Duke University geologist, Dr. Orrin H. Pilkey entitled “Let the Lighthouse Fall In,” wrote concerning the Cape Hatteras Lighthouse “that the sea will win because to save the shoreline property will cost more than the property is worth.” He stated that the National Park Service has claimed to spend twenty one million dollars in restoring the beach around the lighthouse.\(^62\) Pilkey made the argument that we shouldn’t challenge nature but embrace it; let nature takes it course. He mentioned that both Barnegat and Cape May lighthouses, located in New Jersey, have fallen twice and have been rebuilt (Figure 2.3). This has been the case for many lighthouses as they are very vulnerable

structures and constantly need to be replaced. So why continue to save these historic beacons? If a lighthouse is destroyed today, the government is not required to rebuild the lighthouse, since its original useful purpose has become obsolete. Lighthouses, therefore, are a threatened species and once gone, they are lost forever.

The U.S. Lighthouse Board and succeeding organizations were well aware of coastal erosion issues and the danger they posed to lighthouse survival. Some lighthouses were even constructed to be moved. Examples of these type of lighthouses include Cape Canaveral Lighthouse in Florida and Hunting Island Lighthouse in South Carolina which were both successfully relocated. During the late twentieth century and early twenty-first century, several lighthouses, which were not even originally designed to be moved, were successfully relocated to a safer site, including one of the most famous, the Cape Hatteras Lighthouse.\textsuperscript{63} Several books have been published and movies filmed featuring the colossal maneuver.\textsuperscript{64}

Most recently, in 2016, Eric Jay Dolin released his new book, \textit{Brilliant Beacons: A History of the American Lighthouse}, which discusses lighthouse history in a narrative form, examining a full range of topics including early administration and a focus on lighthouse keepers. The book also includes a section on preservation issues which lighthouse

\textsuperscript{63} Other lighthouses that have been moved successfully in the 1990s and 2000s include: Block Island Southeast Lighthouse (Rhode Island, 1994), Highland Lighthouse (Massachusetts, 1996), Nauset Lighthouse (Massachusetts, 1996), Sankaty Head Lighthouse (Massachusetts, 2007), and Gay Head Lighthouse (Massachusetts, 2015). The moves are completed in a combined effort by International Chimney Corporation of New York and Expert House Movers of Maryland.

\textsuperscript{64} Move of the Century: Cape Hatteras Lighthouse, directed by Kevin P. Duffus (North Carolina: Looking Glass Productions, Inc., 2004), DVD; Moving America’s Lighthouse, directed by Beverly Penninger and Alyson Young (North Carolina: Naka Productions, 2000).
organizations currently face. This recent piece of lighthouse literature includes a brief summary of the National Historic Lighthouse Preservation Act. In a short film series called “The Last Lightkeepers” by Wandergroove, Dolin recalls about writing the book and the reams of information available on lighthouses. In the short clip, he stated, “You can write a five thousand page book,” citing the many stories and characters he discovered in his research.

Much has been published on lighthouses, especially within their historical context and more recently on their preservation. The most notable piece of literature was the Historic Lighthouse Preservation Handbook. However, the cost and the economic challenges of lighthouse preservation has not been well documented. Although this thesis does not primarily focus on the economics of lighthouses, the data gather from this thesis hopefully sheds some light on the economic challenges owners face and the recommendations to help owners with their future preservation efforts. Lastly, although briefly mentioned in Dolan’s Brilliant Beacons, comprehensive information on today’s new lightkeepers and the work they have been able to achieve has not yet been published. This thesis brings to light their stories and further explains the National Historic Lighthouse Preservation Act and its role in preserving these treasured structures.

Lighthouses have illuminated dangerous coasts all across the world, standing as symbols of protection, light and hope for sailors and nearby communities down through the ages. The first known lighthouse from antiquity is Pharos, the lighthouse which protected the Greek city of Alexandria (Fig. 3.1). It was considered one of the ancient seven wonders of the world. In many languages, pharos is the origin of the term lighthouse including the Italian word “faro.” Several important lighthouses that were built include the Lanterna in Genoa, Italy and Eddystone Lighthouse, off the coast of United Kingdom. Some of these lights still stand. In the early- to mid-eighteenth century, lighthouses sprung up along

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From the eighteenth century on, lighthouses played a large part in the American economy, bringing in ships safely with goods and products for the ever growing young nation.

This chapter focuses on lighthouse management and legislation related to lighthouses in the United States from the colonial period to the present day. The maintenance of lighthouses during this time period are addressed to better establish context for maintenance requirements today. There are many facets to lighthouse history. This report only addressed management and maintenance since the National Historic Lighthouse Preservation Act primarily focuses on these topics in its legislation. This discussion is divided into sub-topics related to crucial time periods of lighthouse management and the establishment of several organizations holding jurisdiction over the lighthouses.

**British Colonies**

Lighthouses have been a critical part of American maritime life from the colonial times to the present. The first lighthouse in the American colonies was a tower composed of rubble stone built in 1716 to guide and protect commerce within Boston’s harbor. Many more lighthouses sprung up along the coast of the colonies, among them including Sandy Hook Lighthouse in New Jersey, Beavertail Lighthouse in Rhode Island, and Charleston Lighthouse in South Carolina. In all, there were at least twelve light stations before the Revolution. At this time, it was the colonies’ responsibilities to maintain the

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69 Sandy Hook Light is only lighthouse that still stands today and is the oldest operating lighthouse in the U.S. (See Figure 3.2)
lighthouses and sustain their illumination. Lighthouses reluctantly played an active role in the American Revolution as they became targets due to the vantage point they occupied. Boston Lighthouse would become the first lighthouse to become a casualty of the war.  

Following American independence from Great Britain, the states took charge and repaired and rebuilt towers damaged during the war. Soon after its establishment, the new national government passed “An Act for the Establishment and Support of Lighthouse, Beacons, Buoys, and Public Piers.” Representative James Madison facilitated and supported this act, bringing it to Congress in April, 1789. It required all states to cede their lighthouses to the federal government within a year. This was the ninth act

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71 Ibid., 46.
72 It should be noted that it took several years for states to cede their ownership and jurisdiction of lighthouses to the newly formed federal government.
passed by Congress and was the first piece of legislation in relation to lighthouses. The act stated it would be the government’s duty to rebuild lighthouses when necessary and maintain the lighthouses, beacons, buoys, and public piers within the states and provide them with the necessary supplies. This act would help with the new country’s economic pursuits, protecting America’s harbors and its incoming and outgoing goods.\textsuperscript{73} The federal government became solely responsible for the new lighthouse administration. In fact, Congress devoted appropriations to the supervising lighthouse organization at the time, whether it was the U.S. Lighthouse Establishment (1789-1852), U.S. Lighthouse Board (1852-, U.S. Lighthouse Service, or the U.S. Coast Guard.

**The U.S. Lighthouse Establishment**

With the new congressional act in place, lighthouse management was turned over to the Department of Treasury under the supervision of the then current Secretary of Treasury Alexander Hamilton. The newly formed governing body was called the U.S. Lighthouse Establishment under the Department of Treasury. In letters from the Treasury Department and the Commissioner of Revenue, many different topics were covered including requests to buy more oil, repairs to lighthouses and their associated structures, and installing a new lantern at Tybee Island Lighthouse near Savannah. Other topics included suggested locations for potential lighthouse sites and the reasoning behind building a particular lighthouse.

Questions asked by the Commissioner of Revenue in the letters included “Which will be

the best spot for the building?” and “What is the elevation of that spot above the sea at high water, what at low water?” The Commissioner of Revenue also determined the type and quantity of building materials near the proposed lighthouse location. This included construction materials such as stone, timber, and clay for brick. Much thought and consideration was taken into account in establishing these early light stations. In its early years, the U.S. Lighthouse Establishment was overseen by the Secretary of the Treasury or the Commissioner of Revenue, bouncing back and forth between these offices at various times. The responsibility shifted in 1820, when the jurisdiction of lighthouses was handed

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74 "Lighthouse Deeds and Contracts, National Archives, RG 26, South Carolina Room, Charleston County Library, Charleston, South Carolina, Microfilm.
75 Ibid.

Stephen Pleasonton acted as superintendent for lighthouses from 1820 to 1852. As the Department of Treasury’s fifth auditor, he primarily focused on the finances of several departments including the State Department. He had little knowledge of lighthouses and “his primary professional goal was to protect the government purse and cut costs whenever possible.”\footnote{Dolin, \textit{Brilliant Beacons}, 82.} However, during his tenure, the number of lighthouses increased from 55 to 325 lighthouses. Early on, Stephen Pleasonton oversaw the individual contracts for each lighthouse for maintenance of the buildings and the illuminating apparatus. As the number of lighthouses increased, however, managing them grew in cost and complexity. The responsibility turned to the customs collectors who determined lighthouse locations and methods of construction. The collectors were also responsible for sending reports back to Pleasonton on existing lighthouse structures and required repairs, if any.\footnote{Wheeler, \textit{“History of the Administration of the Lighthouses in America.”}}

During this time, lighting apparatuses were the main focus of the structure since their primary use was to aid navigation. The most popular optic used was a Argand wick lamp with a parabolic reflector. Winslow Lewis created a patent for a “reflecting and magnifying lantern,” which the government purchased for $20,000 in the early 1800s (See Fig. 3.4 and Fig. 3.5). Lewis installed his new apparatus in the existing lighthouses. Installation included green lenses, which severely cut the range of light thrown back from the apparatus. Winslow Lewis advised Pleasonton on technical advice for the lighthouses,
and Pleasonton, in response, awarded several contracts to Lewis to construct lighthouses. Unfortunately, many of Lewis’ lighthouses failed and collapsed within a few years of their initial construction, most likely due to Lewis’ lack of expertise on sound construction practices.\textsuperscript{79}

A new European invention increased the brightness of the lighting apparatus. Augustin-Jean Fresnel, appointed secretary of the Commission des Phares in the 1820s, successfully installed his own invention, the Fresnel lense in the Cordouan Lighthouse in 1823.\textsuperscript{80} The Fresnel lenses, according to ship captains, were considered to be far superior to the lighting apparatuses utilized in the United States. In a yearly maritime publication \textit{The American Coast Pilot}, publishers Edmund and George W. Blunt addressed the concerns of ship captains, complaining about the inferiority of the American lighthouses. They addressed their concerns to the Department of Treasury.

\textsuperscript{79} Ibid.

and Congress.\footnote{Dolin, \textit{Brilliant Beacons}, 104–106.} In 1838, the naval group conducted an investigation on the potential mismanagement of lighthouses.\footnote{Ibid., 108.}

In the same year, Congress appropriated funds to purchase two Fresnel lenses from a French manufacturing company to make comparisons of the lights. Pleasonton argued against their installation, feeling it unnecessary to buy lenses at such a high cost. In 1841, these Fresnel lenses were installed in the twin towers of the Navesink Lighthouse in New Jersey. The beacons were considered to be the brightest in the United States and were compared to the lamps at Sandy Hook Lighthouse nearby and Cape Henlopen Lighthouse in Delaware. Although Pleasonton believed the lenses to be superior, he still argued against their use in the United States. Winslow Lewis supported Pleasonton because he believed the lenses would require

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{figure36.png}
\caption{Portrait of Augustin-Jean Fresnel, inventor of Fresnel lens. His lenses were installed in lighthouses across the world. Some are still in use today (Image from Musee des Phares et Balises de Ouessant, Phare du Creac'h).}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=0.8\textwidth]{figure37.png}
\caption{First Fresnel lens installed in Cordouan Lighthouse in France. This lens is no longer but now on display at a museum (Image from Musee national de la Marine).}
\end{figure}
Pleasanton continued to oversee the management of lighthouses and pushed back and refused to purchase any more Fresnel lenses, favoring his philosophy of reducing and cutting costs.83

During the 1840s, another unlikely critic of the U.S. lighthouse establishment came into the picture, Winslow Lewis’s nephew, Isaiah William Penn Lewis (also referred to as I.W.P.). I.W.P. believed his uncle’s lighting apparatus was outdated and that his partnership with Pleasanton was inhibiting the lighthouse establishment. He suggested that the lighthouses be supervised by the just established Army’s Corps of Topographical Engineers. Another investigation into Pleasanton’s management was again revived by the House Commerce Committee after I.W.P’s complaints. However, their conclusions favored the current establishment because the committee members were supportive of Pleasanton’s

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83 Levitt, A Short, Bright Flash, 143–44.
and Lewis’s efforts.\textsuperscript{84} Eventually, however it was under the new Secretary of Treasury Walter Forward’s term, that renewed attention focused on the annual allotment of maintenance expenses for lighthouses that went to repairs, rather than routine maintenance. Forward sought out I.W.P. to inspect lighthouses in New England to ensure lighthouses were properly managed.\textsuperscript{85} After his inspection of many lighthouses, I.W.P. concluded that lighthouses had more problems than was originally thought. The list of problems were endless and included “leaky roofs, misaligned reflectors...bad mortar, cracked walls...poor ventilation...”\textsuperscript{86} Nonetheless, the status quo continued and lighthouse management and maintenance remained stagnant. Two naval officers, Thornton A. Jenkins and Richard Bache were subsequently sent to Europe to inspect their lighthouses. After they returned, both Jenkins and Bache reiterated the superiority of European lighthouses over American lighthouses, most likely due to the Fresnel lenses utilized.\textsuperscript{87}

In 1851, reform finally saw some traction when Congress ordered the Treasury Secretary to appoint a board to investigate the current lighthouse organization under Pleasonton and make proposals on how it could be improved. The board consisted of two naval officers, two army engineers, a civil engineer, and a junior officer of the navy who performed secretarial duties. After their initial investigation and discussion on management, the board submitted a large detailed report, consisting of 760 pages, to Congress for their

\textsuperscript{84} Wheeler, “History of the Administration of the Lighthouses in America.”
\textsuperscript{85} Ibid.
\textsuperscript{86} Dolin, \textit{Brilliant Beacons}.
\textsuperscript{87} Wheeler, “History of the Administration of the Lighthouses in America.”
review. The report details a proposal for a new lighthouse administration and addressed matters of construction, management, instructions to lighthouse keepers, etc. On August 31, 1852, after some debate, Congress passed the bill for creating a Lighthouse Board into law, ending the ‘dim’ reign of Stephen Pleasonton. In his book America’s Lighthouses, Francis Ross Holland Jr., a lighthouse historian, stated, “One wonders how many ships that wrecked during Pleasonton’s thirty-two year administration would have been saved had more effective lights been available.”

The U.S. Lighthouse Board

A more successful era of lighthouse management began as responsibility shifted to the U.S. Lighthouse Board in the late eighteenth century. The U.S. Lighthouse Board received a large task to update the current lighthouse establishment to European standards. The board, appointed by the Treasury Secretary, was composed of Commodore W.B. Shubrick, Cdr. Samuel Francis Du Pont, General Joseph G. Totten, and Lt. Col. James Kearney. These were the original members of the board who proposed a new management plan to Congress consisting of military representatives. Additional civilian members were added to the board including a scientist and engineer. The new members consisted of Professor John Henry, Capt. E.L.F. Hardcastle, and Treasury Secretary Thomas Corwin.

The U.S. Lighthouse Board immediately put into place a rigid management system

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88 Ibid.
89 Holland, America’s Lighthouses, 28.
90 Wheeler, “History of the Administration of the Lighthouses in America.”
by dividing the country into several districts. Each district was assigned a navy inspector and an army engineer. The navy inspector’s duties included visiting lighthouses every three months. They oversaw lighthouse maintenance and supervised the keepers. The army engineer’s responsibilities were primarily focused on the construction and repair of buildings associated with the light stations as well as the lighting apparatus. Both the navy inspector and the army engineer reported back to the board so it could evaluate the status of all the different lighthouse districts. Under the new U.S. Lighthouse Board, the construction of any new light towers had to be authorized by Congress with the assistance and advice from the board. The engineering secretary created the specifications for each lighthouse and contracts for construction which then would be approved by the board.91

One of the main contributions by the board was the establishment of a light list,

91 Holland, America’s Lighthouses, 33–34.
a comprehensive document containing all lighthouses in the U.S., which was updated annually. In addition, strict standards and regulations were established. Instructions were given to each of the keepers, explaining in great detail the maintenance of lighthouses. The lighthouse keepers were well trained and competent to perform their tasks at their respective locations.

Figure 3.11 - Drawings of First Order Lighthouse at Cape Hatteras, 1869. Many lighthouses similar in style and material as Cape Hatteras Lighthouse were built along the southeastern coast (Image from National Archives).

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92 The light list continues to be maintained today by the current lighthouse administration, the U.S. Coast Guard.
light station. The board also decided to build a central lighthouse depot on Staten Island, to help service the lights and its towers. Several other lighthouse depots were created in subsequent years, including one in Charleston, South Carolina. With this new system in place, the U.S. Lighthouse Board became one of the leading lighthouse establishments in the world.

Many of the iconic lighthouses, including Cape Hatteras Lighthouse in North Carolina, a first order coastal lighthouse, and Minot’s Ledge Light in Massachusetts, an offshore wave swept light, date to this time period (Fig. 3.11 & 3.12). Several construction methods were utilized during this time including skeleton towers, cottage-style screw pile...
lighthouses, caisson lighthouses (also known as spark plug lighthouses) as well as the traditional masonry conical tower. In addition to wood and masonry, new materials were utilized including cast iron plates.\footnote{Dolin, \textit{Brilliant Beacons}, 195–198.}

During the Civil War, just like previous wars, lighthouses were darkened and were primary targets in attacks (Fig. 3.13). About 164 lighthouses were deemed obsolete after the war, either partially or entirely destroyed by the Confederate or Union troops. The Confederates removed many of the lenses from their towers, hiding them until the war ended. The Confederates even had their own Confederate Lighthouse Bureau which was dissolved at the war’s end.

The U.S. Lighthouse Board served lighthouses throughout the Golden Era of lighthouses in the late nineteenth century. During its tenure, many attempts were made
to transfer and/or combine the U.S. Lighthouse Board with other departments including the Department of Navy in 1862, and the Life Saving Service and Coast Survey in the 1880s.\textsuperscript{94} However, the board continued to have jurisdiction of lighthouses until the turn of the century, after fifty-eight years of service.

**The U.S. Lighthouse Service**

By an act of Congress, the Department of Commerce was established in 1903 and it required that the Lighthouse Board be transferred from the Treasury Department to this newly established entity. Several years later, Congress passed another act that would reorganize and establish the Lighthouse Service, also known as the Bureau of Lighthouses, under an act of Congress in 1910. This created a more centralized authority, who met regularly, unlike the board who met four times a year. The Lighthouse Service also differed from the board because it was a predominantly civilian service. During this time, the inspectors were civilians, often long term employees from the lighthouse establishment.\textsuperscript{95}

George Putnam became the commissioner of the new organization by the appointment of President Taft. He was an engineer and had recently served in the Philippines as director of the Coast and Geodetic Survey.\textsuperscript{96} The U.S. Lighthouse Service continued to thrive throughout the early twentieth century. New technology led to new construction methods including reinforced concrete. The lighting apparatuses and the fog signals associated with light stations were further developed. Radio beacons, installed in the 1920s and

\textsuperscript{94} Wheeler, “History of the Administration of the Lighthouses in America.”
\textsuperscript{95} Ibid.
\textsuperscript{96} Holland, *America’s Lighthouses*, 37.
1930s, also became a prevalent technology. During this time period, electrical lighting was invented which posed a new technological advance for lighthouses. Putnam supported the automation of lighthouses through the new widespread use of electricity. With automation as the ideal goal, Putnam slowly began to automate lighthouses, which reduced the U.S. Lighthouse Service staff by fifteen percent. However, the U.S. Lighthouse Service was relatively short-lived in comparison to its predecessor, the U.S. Lighthouse Board. After twenty-nine years, primarily under the supervision of George Putnam, the U.S. Lighthouse Service was dismantled. 97

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97 Dolin, Brilliant Beacons, 210–212.
The U.S. Coast Guard

In 1939, President Roosevelt signed the Reorganization Order #11 which consolidated the Lighthouse Service with the U.S. Coast Guard. The executive order went into effect on July 1, 1939, about a month before the 150th anniversary of the signing of the first lighthouse legislation, the Lighthouse Act of 1789. This order caused considerable change to the lighthouse organization. Lighthouse keepers were faced with four different options: quit, retire, continue to be a civilian keeper, or transfer to the Coast Guard. Tensions mounted as the civilian-based U.S. Lighthouse Service, combined with a military organization, the U.S. Coast Guard. New technology came into play such as shoran (short-range navigation) and loran (long range navigation) during the U.S. Coast Guard’s early administration. The focus was not on repairing or building new lighthouses but ensuring more lighthouses became automated.

During the 1960’s, the U.S. Coast Guard went into full throttle and proposed to automate all lighthouses in the United States, allowing lighthouses to be unmanned and further reducing maintenance costs. In 1968, a program called the Lighthouse Automation and Modernization Program (LAMP) was established, its chief purpose to execute the automation of the Coast Guard’s “manned” lighthouses. This program continued until 1990 when the last lighthouses were automated. In effect, the traditional towers that Americans love so dearly became obsolete to the U.S. Coast Guard.

98 Wheeler, “History of the Administration of the Lighthouses in America.”
99 Holland, America’s Lighthouses, 41.
100 Ibid.
Lighthouse Maintenance

This section examines the maintenance of lighthouses throughout the time periods mentioned earlier, primarily in the late nineteenth and early twentieth centuries. Lighthouse keepers and inspectors played a key role in how light stations were maintained and functioned. Prior to the automation of lighthouses, each lighthouse was maintained by keepers. The keepers would tend to the light but also routinely maintain the tower and the other associated buildings on site, including but not limited to the keeper’s quarters, and the oil house.

![Image](image_url)

**Figure 3.15** - U.S. Coast Guard personnel painting Tybee Island Lighthouse, Georgia. These two workers are seen diligently painting the lighthouse on scaffolding in the 1950s. *(Photograph taken of a display at Tybee Island Lighthouse by author).*

It was the keeper’s responsibility to paint the lighthouse regularly and to maintain each lighthouse’s distinctive daymark of various colors including red, black, and white (Fig. 3.15). During the nineteenth century, each lighthouse keeper was given a manual, or a set of instructions, on how to properly care for their lighthouse. The manual also included a list of the duties and responsibilities for lighthouse keepers ranging from maintenance,
watches, visitors, tending to the light, etc. ¹⁰¹

For lighthouse keepers, most of the maintenance upkeep was directed toward the actual lighting apparatus. The maintenance of the buildings were secondary in their daily routines. However, the upkeep of the station was very important to the U.S. Lighthouse Board. In some cases, the lighthouse keepers were dismissed for unsatisfactory conditions. For larger repairs on the buildings, the district engineer hired a crew to execute the work. Congress would provide appropriations for the work completed on the lighthouses after requests and recommendations from the U.S. Lighthouse Board.¹⁰²

![Figure 3.16 - Light Keepers' Implements, 1862. These tools were used by the lighthouse keepers to maintain the light (Image from National Archives).](image)

¹⁰² *Holland, America’s Lighthouses*, 47.
In the 1850s, the board began painting lighthouses with individual markings that made them more visible and distinguishable during the day. Towers needed to be painted regularly in order to keep its daymark visible to ships and boats passing by. It also prevented the masonry walls and ironwork from deteriorating. During this time, lighthouse keepers used many creative ways to paint the lighthouse including constructing makeshift scaffolding, chairs hanging from the catwalk, and ladders to paint bottom sections. The life of a keeper was not easy and at times, even dangerous. In 1859, Joseph Andreau, a lighthouse keeper at the old St. Augustine’s Lighthouse tower was performing his usual routine maintenance on the lighthouse and suddenly fell from the scaffolding.\textsuperscript{103}

Ice was a large problem for keepers, especially in the northern parts of the country, such as in the Great Lakes region. Most lighthouses were closed during the harsh winter but were reopened in spring. In some cases, ice completely destroyed lighthouses or heavily damaged them. One such example is Sharp’s Island Lighthouse in the Chesapeake Bay, where ice floes threw it off its foundation and it is now permanently leaning.\textsuperscript{104}

When not maintaining the light, keepers had one more important duty: entertaining visitors. During the late nineteenth and early twentieth century, it was very common for visitors to come visit the lighthouses. In fact, it was a part of the keepers’ instructions and was a part of their normal routine. In the 1902 Instructions to Light-Keepers & Masters of Light-House Vessels, it stated, “Keepers must be courteous and polite to all visitors and show

\textsuperscript{103} Ibid.
them everything of interest about the station at such times as does not interfere with light-
house duties. Keepers must not allow visitors to handle the apparatus or deface light-house 
property.”105 The American public was fascinated with lighthouses as photography became 
more available and lighthouses were described in literature and poetry. Some lighthouse 
keepers in the less remote lighthouses were soon overwhelmed with visitors. At Absecon 
Lighthouse in Atlantic City, New Jersey, ten thousand people visited the lighthouse from 
July to September 1912 (Fig. 3.17). This fascination with lighthouses continues today as 
many people still continue to visit lighthouses every year.106 For example, the Cape Hatteras 
Lighthouse receives over 175,000 visitors per year.107

Figure 3.17 - Absecon Lighthouse in Atlantic 
City, New Jersey. Many visitors came to visit 
the lighthouse each year and still continue 
to in the present day (Image from Library of 
Congress).

105 Dolin, Brilliant Beacons.
106 Ibid.
carolina-lighthouses/cape-hatteras-lighthouse.
The Demise of Lighthouses

Lighthouses were some of the most significant engineering feats of their time. However, Mother Nature, natural disasters and human conflicts were no match for these iconic structures. Many lighthouses had been destroyed by fire, coastal erosion, earthquakes, battles, or large storms. Once a vital part of the American economy, many were rebuilt or repaired after their destruction. However, twentieth-century technological advances in radar, sonar, and global positioning systems (GPS) soon made lighthouses obsolete. One of the last lighthouses to be constructed was Charleston Light in Charleston, South Carolina in the early 1960s. The lighthouse had an innovative design and was triangular in form. Although unique in appearance and materials, no other lighthouses were constructed on the coast after the new Charleston Light. Some existing lighthouses continue to stand today as active aids to navigation but since being automated, the U.S. Coast Guard was able to redirect their staff to their primary missions such as search and rescue and patrol.

With the automation of lights in the late 20th century, lighthouses deteriorated at an extreme rate. The U.S. Coast Guard staff rarely visited the lighthouses, only once or twice a year to maintain the lighting apparatus. Local community members soon realized the need to save the lighthouses. Several attempts were made to move offshore lighthouses onto land.

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108 The lighthouse is a steel structure anchored into a concrete base and clad in aluminum panels. It only contained three sides to resist hurricane forces. The design included an elevator and air conditioning, not seen before in other lighthouses and is the only lighthouse built in this way.

Figure 3.18 - An illustration titled “Destruction of Minot’s Ledge Lighthouse. The first lighthouse at Minot’s Ledge (Massachusetts) was destroyed by a large storm in 1851 (Image from Library of Congress).

Figure 3.19 - Abandoned Cedar Point Light prior to demolition. This lighthouse is located in the Chesapeake Bay and it was abandoned in the twentieth century (Image from Library of Congress).

Figure 3.20 - Ponquogue Light falling down during demolition in 1948. Often, the U.S. Coast Guard would demolish lights no longer in use such as this one located in New York (Image from Library of Congress).
However, many of these lighthouses fell into the water before reaching shore. Although lighthouses have been widely studied by maritime historians and many local nonprofit organizations were formed to preserve these historic structures, the lighthouses continued to be casualties due to a lack of funding and local support.

The *National Historic Lighthouse Preservation Act*, a joint program with the U.S. Coast Guard, General Services Administration, and the National Park Service, was passed to ensure historic light stations would be protected and preserved for future generations. However, even after this act was passed, several lighthouses were demolished or destroyed during violent storms. In 2005, several lighthouses were destroyed or heavily damaged during Hurricane Katrina in the gulf. In 2015, Superstorm Sandy flattened a New York harbor lighthouse, Old Orchard Lighthouse, a lighthouse conveyed to a private owner through the *National Historic Lighthouse Preservation Act* program. Some lost lighthouses are remembered through reconstructions. The National Lighthouse Museum, located in the old Lighthouse Depot on Staten Island is currently attempting to reconstruct parts of their lighthouse in their new exhibit space.

A book published in the early 2000s featured many lighthouses across the nation that were considered endangered. Many of them were restored and are now maintained

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on a regular basis by their owners. However, some lighthouses remain in disrepair and are in dire need of help while others have already been completely destroyed. One example is St. George’s Lighthouse in Florida, where the soil was undermining the tower’s foundation due to the constant moving and changing of the beach (Fig. 3.21). By the early 2000s, the tower was the only structure standing at the historic light station site. That changed when Hurricane Dennis hit the east coast. Weeks after the storm, the tower fell onto the beach. Locals picked up the pieces in the hopes to reconstruct it one day, which they successfully completed in 2011.114 It is community interest and efforts like this that must continue in order to secure the future of lighthouses across this nation.


Figure 3.21 - A leaning St. George Light due to destabilization of the soil underneath it. The photograph shows the lighthouse prior to its collapse. The dilapidated keeper’s house can be seen in the background (Image from Library of Congress).
CHAPTER FOUR
HISTORIC PRESERVATION LEGISLATION

Legislation plays a large role in how historic preservation practitioners execute their work today. Much of this legislation has been enacted within the past fifty to one hundred years. Due to the current political climate, it is important now more than ever to understand the current legislation and its effects on the historic preservation community. Legislation often times carries greater weight than practitioners perceive it to have. This chapter primarily focuses on federal historic preservation legislation. Although laws related to historic preservation are passed at the state and local levels, the National Historic Lighthouse Preservation Act is a federal act. Several federal laws directly related to historic preservation, preceding the National Historic Lighthouse Preservation Act, beginning with the Antiquities Act of 1906. Since 1906, the federal government has expanded their role in historic preservation through legislation, and each act is further discussed in this chapter. Also, several lighthouse programs in Maine and Michigan that would eventually help in the creation of the National Historic Lighthouse Preservation Act will also be explained in this chapter.

In the early twentieth century, Congress passed the first piece of federal legislation related to historic preservation, the Antiquities Act of 1906. The bill, signed by President Theodore Roosevelt, allowed the President to set aside natural areas as national monuments in order to protect them from development. It also established permits for “examination
of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon their lands.”

This section of the act is primarily important for management of archaeological research and protection of archaeological sites. A decade later, Congress established the National Park Service within the Department of Interior through the Organic Act of 1916. This new federal agency “shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations...which purpose is to conserve the scenery and the natural and historic objects and the wildlife therein...for the enjoyment of future generations.”

A century later, this organization continues to be the leading federal agency in the preservation of natural resources and historic sites today.

Congress continued to pass legislation throughout the twentieth century to preserve historic sites. In 1933, the Historic American Building Survey (HABS) was established which provided employment to jobless architects and engineers during the Great Depression. These architects were tasked with surveying and documenting historic structures and sites all across the United States. Two years later, when the Historic Sites Act of 1935 was passed, it mandated that historic and archaeological sites be surveyed, which the Antiquities Act of 1906 only hinted at.

Several factors were at play in the post-World War II era including suburban development and installation of new highways that led to more historic preservation legislation. In order to prevent further development, the National Council for Historic Sites


116 Ibid.
and Buildings was established in 1947. Soon after, the council chartered for the National Trust for Historic Preservation in 1949. The National Trust was a nonprofit organization whose mission was to “own important historic properties and to provide leadership and support for preservation, giving the movement national scope and visibility.”¹¹⁷

In 1949, another federal agency, the General Services Administration, was formed to transfer or sell government property under the Federal Property and Administrative Services Act of 1949. Through federal surplus property, the federal government “generates savings by eliminating maintenance costs.”¹¹⁸ This legislation created the Historic Surplus Property Program (HSPP), the predecessor for lighthouse transfers prior to the National Historic Lighthouse Preservation Act process. Through this program, only state, county, or local government entities could apply for these properties. Nonprofit organizations and private owners were not eligible to apply to this particular program. The General Services Administration remains an important entity overseeing lighthouse transfers or sales since it was established in 1949 until the present day within the National Historic Lighthouse Preservation program and other historic surplus programs.

During the 1960s, Congress enacted major legislation on historic preservation. In 1966, a report called With Heritage So Rich, a compilation of essays and literature on


historic preservation, was released. Its preface states, “We on the committee have wanted to know what is happening in the field of historic preservation; the present trends in saving what can be saved, and the losses destroyed what deserves to be saved. We have tried to discover what we must do to rescue from certain destruction what remains of our legacy from the past, and how best to do the work.”119 This report would provide the foundation for the most significant piece of legislation for historic preservation to date, the *National Historic Preservation Act of 1966*.

The *National Historic Preservation Act* (NHPA) is the largest contributing piece of legislation to historic preservation in American history. It states that “the preservation of this irreplaceable heritage is in the public interest so that its vital legacy of cultural, education, aesthetic, inspirational, economic, and energy benefits will be maintained and enriched for future generations of Americans.”120 The legislation which passed expanded the National Register of Historic Places, including state and local listings. The act authorized federal funding for the states to conduct surveys and preservation planning, therefore, establishing state historic preservation offices. It also created the Advisory Council on Historic Preservation, an advisory board which provides “policy advice, interagency coordination, training and education, and the protection of historic properties.”121 It created a whole new field of historic preservation with a large workforce of archaeologists, cultural resource

managers, etc.

The Section 106 process was created through the NHPA and requires federal agencies to conduct a review process for all federally funded projects that are listed on or eligible for the National Register of Historic Places. Within this process, the federal agencies must seek comments from the Advisory Council on Historic Preservation. It allows interested parties of the project to also comment on the project. If adverse effects are found, then mediation with interested parties and the State Historic Preservation Office are conducted to create a resolution. Although this does not prevent demolition or alterations, it hopefully allows a healthy discussion between all stakeholders.

Another piece of legislation from the 1960s is the *National Environmental Policy Act* (NEPA) which dictates environmental policy on historic sites. Similar to the Section 106 process from the *National Historic Preservation Act*, NEPA requires federal agencies to prepare an environmental assessment (EA) to identify the effects posed through their actions related to a historic site.\(^{122}\) If significant impacts are found, then the agency must complete an environmental impact statement (EIS), which further explains the impacts on the environment.\(^ {123}\) Within the National Historic Lighthouse Preservation program, the U.S. Coast Guard fulfills the environmental assessment of NEPA, as well as Section 106 when it deems a lighthouse excess.\(^ {124}\)

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124 This will be further discussed in Chapter Six: National Historic Lighthouse Preservation Act.
properties, including the *National Marine Sanctuaries Act of 1972* (protecting marine habitats and sunken vessels), the *Coastal Zone Management Act of 1972* (protecting America’s coastlines), and the *Abandoned Shipwreck Act of 1987*. In the 1980’s, the Federal Historic Preservation Tax Incentives program was established which has attracted private investors in historic properties. Besides the federal rehabilitation tax credit program, many states throughout the country have rehabilitation tax credits, primarily benefiting large scale projects, and that can be used in combination with the federal tax credit. Several other acts were passed including, protecting cultural heritage objects and sites, such as the *National American Graves Protection and Repatriation Act* and the *American Battlefield Protection Act of 1996*.

All of the previously mentioned legislation stand as precedents to the *National Historic Lighthouse Preservation Act of 2000*. In fact, the *National Historic Lighthouse Preservation Act of 2000* is an amendment to the *National Historic Preservation Act of 1966*. Throughout the twentieth century, numerous legislation was passed when historic sites were threatened. The trend continued with the *National Historic Lighthouse Preservation Act of 2000*, and hopefully government action will persist in the future as more and more of our historic sites are endangered.

Before delving into the NHLPA itself, it is important to discuss the events and legislation implemented just prior to the passage of the act. On April 19, 1989, an electrical fire highly damaged the keepers’ quarters of Heron Neck Lighthouse on Greens Island along the coast of Maine (Fig. 4.1). With no funds to rebuild the keepers’ quarters, the U.S.
Coast Guard believed tearing down the lighthouse was the best option. However, public outcry from local residents prevented the lighthouse to be demolished. Peter Ralston, of the Island Institute in Rockland, Maine negotiated with the U.S. Coast Guard and congressional members to transfer the right of ownership of the lighthouse to the Island Institute so its future restoration could be achieved.125 In order to transfer ownership, legislation needed to be passed which was attached to the *U.S. Coast Guard Authorization Act of 1993*.126 After that transfer of ownership to the Island Institute, discussions began to take place on the mass transfer of lighthouses to both local nonprofit organizations and federal agencies. This was the beginning of the Maine Lights Program, the precedent for the *National Historic

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125 Timothy Harrison. “Heron Neck Lighthouse And the Fire that Changed History,” *Lighthouse Digest* (East Machias, ME), March/April 2011.


The program, under the U.S. Coast Guard Authorization Act of 1996, would “transfer these historically and environmentally important lighthouses to new owners who will agree to maintain them, preserve their historic character, preserve ecological resources on adjacent property like seabird nesting habitat, and provide access to the public.” This would allow the federal government to preserve these lighthouses at little or no cost, whereas the new stewards would be responsible for the extensive maintenance costs associated with lighthouses. Peter Ralston stated, “It was a win-win situation for everyone involved.”

Over thirty-six lighthouses in Maine were identified and considered eligible for the program. A committee was developed to make decisions on which entity was chosen to own each lighthouse. At the conclusion of the program in 1998, twenty eight out of the thirty six lighthouses were transferred to different organizations including federal agencies (U.S. Fish and Wildlife Service), local and state government entities, and nonprofit organizations. The program was overseen by members of the Island Institute, the main organization who propelled the legislation forward. This new legislation was a historic event in lighthouse history as it established a way for the U.S. Coast Guard to deem their lighthouses excess property and sell it to proper lighthouse stewards or keepers. The U.S. Coast Guard did not have the funds to maintain these ‘money pit’ structures. This provided the means for

the U.S. Coast Guard to still maintain the lights as active aids to navigations, without the

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128 Peter Ralston, Personal Correspondence, January 16, 2017.
129 See Appendix A for a full list of lighthouses transferred through the Maine Lights Program and the owners now associated with those sites.
expense of maintaining the structures associated with the lights.

Most of these lighthouses continue today to be owned by their original owners. The only exception is Brown’s Head Lighthouse, which was originally owned by the town of Vinalhaven. After about twenty years of ownership, the lighthouse was transferred to the American Lighthouse Foundation, a nonprofit organization, due to the exorbitant maintenance costs in 2015. In addition, the American Lighthouse Foundation (ALF), owns three lighthouses including Whaleback and Little River (both a part of the National Historic Lighthouse Preservation program), and manages seventeen others. Funding is provided to the ALF primarily through private donations and the ALF has since developed a five year plan for the Brown’s Head site.130

Several lighthouses identified for transfer through the Maine Lights Program were not transferred due to various reasons. These lighthouses were located offshore, on small spits of land and were in terrible states of repair from years of abandonment.131 However, five of these lighthouses were later transferred through the National Historic Lighthouse Preservation Act. The U.S. Coast Guard continues to own the remaining three lighthouses and which are leased to nonprofit organizations, who maintain their preservation.

The Maine Lights Program set a precedent for a national transfer of lighthouse properties owned by the U.S. Coast Guard. Legislation was quickly introduced in Congress in 1998 but it took about two years to fully develop what is the National Historic Lighthouse

131 Peter Ralston, Personal Correspondence, January 16, 2017.
Preservation Act of 2000. It became obvious to lighthouse enthusiasts that more needed
to be done and a program similar to the Maine Lights Program would be the best solution.
Prior to the National Historic Lighthouse Preservation Act, lighthouses were transferred
through the National Park Service’s Historic Surplus Property Program or the Federal
Lands to Parks Program.

Seeing the success of the Maine Lights Program, the citizens of Michigan, the state
with the most lighthouses in the United States, established the Michigan Lighthouse Project
(MLP). In 1998, about seventy lighthouses in Michigan would be deemed excess by the
federal government, and this project was established to ensure their future preservation.132
The project would provide information about the disposal process and legislation
associated with it. During this time, the National Historic Lighthouse Preservation Act
was first introduced in Congress. Also, simultaneously, the Michigan Lighthouse Fund
(MLF) was established to help organizations with funding for repairs and restoration of
the lighthouses.133 This would all lead to enactment of the National Historic Lighthouse
Preservation Act.

Since 1906 when the first federal act related to historic preservation was passed and
in the eighty or so years that followed, legislation has played a major role in the preservation
of our nation’s lighthouses. Along with the success of the Maine Lights Program and the

subsequent establishment of the Michigan Lighthouse Project and the Michigan Lighthouse

(Ludington, MI), November 3, 1998.
Station,” Detour Reef Light Preservation Society, January 14, 2016; Jeri Baron Feltner and Chuck Feltner,
Personal Correspondence, February 2, 2017.
Funding the government’s actions helped to lead the way for the eventual enactment of the all-important *National Historic Lighthouse Preservation Act of 2000.*
CHAPTER FIVE
NATIONAL HISTORIC LIGHTHOUSE PRESERVATION ACT

This chapter reviews the passage and role of the National Historic Lighthouse Preservation Act, and the future of the program it created. The chapter’s topics includes discussion on the congressional record prior to its enactment and reviews the transfer process itself. The chapter also summarizes what the program has achieved since its implementation in 2002 and reviews several legal cases brought against lighthouse owners as a result of the transfer. Similar lighthouse programs in other countries will be discussed and compared. Finally, the future of the existing United States lighthouse preservation program will be addressed.

Congressional Record and Enactment

In the late 1990s, several key U.S. Senators led an effort to enact a national lighthouse program. In 1997, Alaskan Senator Frank H. Murkowski introduced the National Historic Lighthouse Preservation Act of 1998 to Congress. However, this bill only passed in the Senate and did not become law.134 A second bill, the National Historic Lighthouse Preservation Act of 2000 (NHLPA) was eventually implemented. The bill was first introduced in the House with subsequent favorable reports by the House of Representative’s Committee on Resources and the Senate’s Committee on Energy and

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Natural Resources. In testimony from the Congressional Record, Representative Mark E. Souder (Indiana) explained that this act was necessary in order to give nonprofits, which protected and preserved lighthouses, a chance to own the resources already in their care.

Several key organizations had strong input into the act, among them the Great Lakes Lighthouse Keepers Association (GLLKA). In testimony before the Subcommittee on National Parks and Public Lands, the president of GLLKA, Richard Moehl, expressed his support for the bill. He said that offshore lighthouses need to have special considerations, such as added costs of providing proper access, sanitation concerns such as the removal of human waste, bottomland leases, and other daunting challenges. He believed that the Michigan Lighthouse Project, similar to the Maine Lights Program, could be a model for other states. Moehl also stated that a lighthouse fund should be put in place. In many cases, nonprofits and other organizations can spend $750,000 dollars or more on restoration which entails “abating, stabilizing, dealing with public health issues, and completing a Historic Structures Report to begin the needed restoration process.” All of these considerations, Mr. Moehl stated, were important to the success of the bill.

At that time, the process to transfer lighthouses from the U.S. Coast Guard to nonprofits was long and difficult. When the U.S. Coast Guard deemed a lighthouse excess, it was given to the GSA, which offered the lighthouse to other federal agencies, and then to state and local governments. If no government agency expressed interest, the GSA puts it up

137 Ibid.
for sale. Many nonprofit organizations can not afford the initial cost of the lighthouses in an auction. An alternative method to transfer ownership is to enact legislation for a lighthouse to be transferred to a specific organization. However, this process was considered long and cumbersome.138 This act was intended to correct that and give local community nonprofit organizations the upper hand in their bids to gain ownership of lighthouses by providing a no-cost transfer. This would allow public access to more lighthouses across the country, giving educational value among other preservation values.139

In his final remarks within the Congressional Record, Representative Souder states, “By encouraging government agencies to join with non-profit groups to help preserve lighthouses for the future, we will be providing a much fairer process to those who wish to continue their work in preserving these nationally historic structures.”140 The hope was that enthusiastic stewards would help rehabilitate or restore these historic structures. On October 24, 2000, the National Historic Lighthouse Preservation Act passed and signed into law by President Bill Clinton.141

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138 In Chapter Five, the Heron Neck Lighthouse was transferred to the Island Institute through this type of transfer. Also, one of the lighthouses, Tchefuncte Rear Lighthouse, who submitted a survey was also transferred through this type of transfer just prior to NHLPA, by way of H.R. 4328 - Omnibus Consolidated and Emergency Supplemental Appropriations Act (1999).

139 Senator Souder, speaking on HR 2970, on February 5, 1998, 105th Congress, 2nd sess., Congressional Record 144, E120.

140 Ibid.

NHLPA Process

The law maintains a delineated process that lighthouses must go through prior to be conveyed to a new owner. There are many facets to the process and several government entities who each play a role in the process (Fig. 5.1). At first, each district of the U.S. Coast Guard (USCG) informs the Asset Manager of the excess property. Under the National Historic Preservation Act and the National Environmental Policy Act, the U.S. Coast Guard is required to conduct Section 106 review and an environmental assessment prior to deeming excess to the General Services Administration (GSA). The property must be considered historic in order to go through the National Historic Lighthouse Preservation Act process. If it is not considered historic, it will be conveyed through the preceding process under the 1949 Disposal Act. In the case of historic lighthouses with completed Section 106 review and environmental assessments, the U.S. Coast Guard will then complete a Report of Excess (ROE), stating the interested parties in the property. This may include federal agencies, nonprofits or local/state governments that may already have a lease with the U.S. Coast Guard. When the ROE is submitted to the General Services Administration, the State Historic Preservation Office (SHPO) is notified. When the ROE is accepted, GSA issues a Notice of Availability (NOA), which gives a brief property description, location and conditions. Interested parties can write a letter of interest within a certain time period.¹⁴²

At the beginning of the program, several newspapers article and publications

Figure 5.1 - National Historic Lighthouse Preservation Act flow chart. The flow chart explains the process a lighthouse property will take from the time U.S. Coast Guard deems the lighthouse excess to when the property is conveyed to the new owner (Image from National Park Service).
marketed this program as a once in a lifetime opportunity: owning a historic lighthouse through the NHLPA process. In *PARADE* magazine, an article explained what seem to be three simple steps to own a lighthouse (Fig. 5.2). These articles explicitly advertise the lighthouse properties and helped gain interest within the process. Then Secretary of the Interior, Gale Norton, stated, “Lighthouses capture the spirit of the seafaring adventurers and tap into the call we all have inside us to be adventurers.” Lighthouse owners did warn of the expense on rehabilitated lighthouses. The articles and publicity of this program continues today as the media explores how these lighthouses are restored and utilized in

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print and film.\textsuperscript{144}

Once the NOA period was closed, eligible entities are given an application from the National Park Service. Entities such as federal agencies, local and state governments, and nonprofit organizations were permitted to fill out the application. No private individuals or organizations can apply for lighthouse ownership during this part of the transfer. Prospective parties (federal, local/state, and nonprofit) receive an opportunity to visit and inspect the property with building inspectors and contractors. This allows interested parties to understand the scope of the work prior to completing and submitting the application. Once the site visit occurs, applicants have ninety days to fill out an application.\textsuperscript{145}

The application must explain the owner’s detailed plans for restoring the lighthouse and covers many topics. In some cases, an application may be a joint venture between organizations as long as the roles in the partnership are clearly defined.\textsuperscript{146} In the application guidelines, it explains the important detailed information needed to manage, maintain, and preserve the lighthouse. The application is divided into several sections: executive summary, property description, preservation and maintenance plan, use plan, financial plan, and management plan.\textsuperscript{147}


\textsuperscript{146} Many of these joint applications are between local/state governments and local nonprofit organizations. These partnerships will be further discussed in Chapter Five: Analysis.

The National Park Service considers several factors when evaluating the applications. The process requires submission of a preservation plan. The preservation and maintenance plan required is similar to a small historic structure report or conditions assessment and must show compliance with the Secretary of Interior’s “Standards for the Treatment of Historic Properties.” This section needs to explain the character defining features of the light station as well as the light station’s condition. It should also note how it should be restored, repaired or rehabilitated. For the use plan, the National Park Service states it will give higher priority to organizations that promote visitation and interpretation of the site. If the site is remote and isolated, it is encouraged that the new owners will propose distance and virtual implementation in their applications. In the financial plan, the owner will propose estimates of the rehabilitation or restoration costs as well as the organization’s source of funding. One of the financial plan’s important components is if the owner is able to “provide funding to rehabilitate and maintain the light station in perpetuity.”148 In the management plan, the eligible owner will discuss the organization’s structure, as well as past experience with other light stations. Within this section, several letters of support from local organizations in assisting with the proposed project should be included.149

Several other documents are also required with the application. This includes a complete covenant agreement and a resolution/certification of authority to obtain property. In addition, the GSA requires an environmental analysis which comes in the form of a

148 Ibid.
149 Nonprofit organizations must also provide “evidence of qualifying state non-profit status, corporate bylaws, corporate officers by name and title, description of succession plan and number of existing members.”
questionnaire where the owner must describe in detail the impacts on the surrounding environment including the geography of the site, wildlife, water and air quality, population, potential users and the economy of the area. This is in compliance with the National Environment Policy Act of 1969. If a Fresnel lens is present at the site, the U.S. Coast Guard requires a Historic Fresnel Lens Treatment Plan attached to the application for their review.

Applicants only have ninety days from the time of the site inspection to submit the application. At the end of the ninety days, the National Park Service reviews and ranks the application. The application is rated by a numbering system, where each section receives a score on a scale range of 0 to 25, which is broken up into five different ratings: Excellent, Very Good, Average, Below Average, and Unsatisfactory. Ultimately, the National Park Service, with comments from the USCG, GSA, and SHPO, will provide recommendations to the Secretary of Interior, who chooses the most suitable steward. If no suitable entity is chosen, the lighthouse property will go to auction to the highest bidder. No consideration is made on who acquires the lighthouse through this part of the process.

When the owner is awarded the lighthouse, (whether through no cost transfer or private auction), the deed dictates several covenants and easements. The easements give to the U.S. Coast Guard access to the site to maintain the active aid to navigation. The deed

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also declares the presence of hazardous materials such as lead paint and asbestos. This is a common occurrence for many of these historic lighthouse. Several historic preservation covenants state that the new owner must comply with the Secretary of Interior’s Standards for Treatment of Historic Properties. This is especially true for a rehabilitation project. For major changes in the historic fabric and structural integrity of the lighthouse, the owner must consult with their associated State Historic Preservation Officer (SHPO) and receive approval to ensure compliance. It also allows the SHPO to inspect the property at any time and requires the owner to submit conduct reports to the National Park Service every two years.152 These reports are referred to NHLPA monitoring or compliance reports, where the owner will outline all that has been accomplished in the last year or couple of years. Similar to the original application, the report is divided into several sections including improvements and maintenance, development and use, financial records, and issues/impacts or threats to the light station.153 These reports are extremely important in understanding the status of preservation efforts for each lighthouse and hold owners to certain standards of preservation.

**The NHLPA Pilot Program**

The pilot program of the National Historic Lighthouse Preservation Act (NHLPA) program consisted of six lighthouses including St. Augustine Lighthouse (Florida), the first lighthouse to be conveyed under the act. The other lighthouses included Tybee Island

152 Southern Essex District Registry of Deeds, Salem, Massachusetts, Deed Book 33140, 213.
Lighthouse (Georgia), Little River Light Station (Maine), Munising Station Front/Rear Range Lights (Michigan), Esopus Meadows Lighthouse (New York), and Rondout Creek Lighthouse (New York) (Fig. 5.3). The majority of these lighthouses were transferred to nonprofits, except for two light stations. The Munising Station was transferred to the National Park Service and the Rondout Creek Lighthouse was transferred to the City of Kingston. These would be the leading precedents for the future of the program. In fact, St. Augustine Lighthouse held classes for new applicants and owners for several years to help organizations understand the complex application process. Although not offered

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anymore, this was an important asset to new owners. The majority of the lighthouses first transferred through the program had established relationships with the U.S. Coast Guard as lessees. The lighthouses within the pilot program contained both mainland and offshore lighthouses.

During the first couple years of the program, only stewardship transfers were conducted. However, this changed in 2005, when the first sale of a lighthouse occurred through a General Services Administration auction. In that same year, three total lighthouses were sold to private entities, all located in the Chesapeake Bay in Virginia. These three lighthouses would be the first of many to go to a GSA-administered auction.

Review of Achievements

Within the National Park Service, the National Maritime Heritage program currently oversees the NHLPA program. In the past, the program has also been run by the National Register for Historic Places. The General Services Administration Property Disposal department leads the management of transfers and sales. Each organization has a representative overseeing the program as well as several representatives located in each region or zone. Each year, since 2009, the NHLPA program has released highlight reports on

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what has been accomplished and important issues facing the program.\textsuperscript{156} As for the current numbers from the NHLPA 2015 Highlights Report, there have been eight federal, twenty-two local governments, three state governments, and forty-one not-for-profit transfers, and forty-six public sales. Over the course of fourteen years, approximately 120 lighthouses have been conveyed through the program. According to the 1994 Inventory of Historic Light Stations, 457 lighthouses were still owned by the U.S. Coast Guard.\textsuperscript{157} By adding up the lighthouses transferred through the Maine Lights Program and the NHLPA program as well as the lighthouses transferred through other means in the 1990’s, that means the U.S. Coast Guard currently has less than three hundred lighthouses in their procession.

As mentioned previously, lighthouses were primarily transferred to nonprofit entities at the inception of the program. Many of these nonprofit entities were leasing the lighthouses from the U.S. Coast Guard prior to the transfer. However, in 2013, the trend changed to more auctions and private sales. As the numbers stand now, private owners represent roughly one third of lighthouse owners in the program. This is largely due to the fact that many of these lighthouses were remote, off the beaten path, and located offshore. Within the reports, several successful lighthouses have been featured for the preservation efforts including DeTour Reef Lighthouse and Graves Lighthouse.\textsuperscript{158} In a meeting in August 2015, NHLPA Coordinators from the GSA addressed several issues related to the program


\textsuperscript{158} The owners’ success will be discussed further in Chapter Seven: Analysis of NHLPA Program.
including lighthouses in international waters, property reversions, and lighthouses located on breakwaters.\textsuperscript{159}

The reports discuss major issues that have come up in the program such as the state bottomlands lease agreement in Michigan.\textsuperscript{160} However, this was resolved between several lighthouse owners in Michigan and the state of Michigan. The Michigan Lighthouse Alliance and the Michigan Department of Environmental Quality negotiated the terms of the leases including an application process and the rights of occupancy. The first lighthouses in Michigan to have successful bottomlands lease agreements were DeTour Reef Lighthouse and Harbor Beach Lighthouse. This would set a new precedent for all offshore lighthouses in Michigan. There were also successful precedents for these type of lease agreements in states such as Ohio, New York, and Rhode Island. There are several states that continue to have issues with bottomlands leases and these lighthouses have yet to be conveyed.\textsuperscript{161}

\textbf{Legal Cases and Concerns}

Several legal cases have developed during the course of this act with several lighthouses. The cases are related to initial ownership, zoning, and other associated conflicts. Additional concerns with the program include destruction of lighthouses conveyed through the program and as mentioned previously, bottomland leases.


\textsuperscript{160} For many offshore lighthouses, the land beneath the lighthouse is not owned by the federal government, but the state. In order for the lighthouse to be transferred from the federal government to the new steward, the steward must sign a lease agreement with the state. This is relevant for both stewardship transfers and private owners.

Early on in the program, the Currituck Beach Lighthouse in North Carolina was recommended to be conveyed to the Outer Banks Conservationists (OBC), a nonprofit organization who had restored both the lighthouse and the keepers’ quarters in the 1980s (Fig. 5.4). The nonprofit organization had leased the property from the U.S. Coast Guard prior to it being conveyed. At the time that Currituck Beach lighthouse was deemed excess by the government, a North Carolina U.S. Representative, Walter Jones, was interested in the lighthouse and wanted the lighthouse to be conveyed to local county officials instead of the nonprofit.\textsuperscript{162} In fact, his opposition towards the Outer Banks Conservationists was pronounced. According to a local newspaper article, he believed that the OBC was “an outside organization with ‘liberal’ backers and demanded inquiries by the Department of Homeland Security and even the White House.”\textsuperscript{163}

\textsuperscript{162} On a side note, Representative Walter Jones of North Carolina was a co-sponsor of the \textit{National Historic Lighthouse Preservation Act of 2000}.

The county officials Jones supported were planning to incorporate the lighthouse property into a theme park. Prior to the application process, Jones submitted legislation without notifying the nonprofit and attached the lighthouse legislation to a natural resources bill in 2002. This was originally how many lighthouses were transferred prior to the act. It stated, “Notwithstanding any other provision of law, the historic light station, known as the Currituck Beach Lighthouse shall be conveyed, by quitclaim deed and without consideration, to Currituck County, North Carolina. The conveyance shall be completed as soon as practicable after the date of the enactment of this subtitle.”

Although this law was introduced in Congress it was never passed.

Based on local newspaper articles, there was always contention between the Outer Banks Conservationists and Currituck County since the county owns property adjacent to the lighthouse. This entire case had been based on political biases: liberal vs. conservative, and local vs. outsider. With political agendas aside, the deed was finally awarded by the Secretary of Interior. However, it took two more months before the OBC received the deed due to investigations by the U.S. Coast Guard and the White House. After this case, there was concern for future transfers as other organizations tried to apply for lighthouses and the representatives of OBC hoped their struggle for ownership would not be a consistent trend.

In Massachusetts, another lawsuit ensued when Baker’s Island Lighthouse was

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165 Barbara Solow, “The Fight for the Light.”
awarded to the Essex National Heritage Commission by the Secretary of Interior instead of Baker’s Island Lighthouse Preservation Society. The residents of Baker’s Island were concerned for their privacy and tried to prevent the lighthouse from being transferred. In the 1980’s, the Society had established a lease with the U.S. Coast Guard to use and occupy one of the residences adjacent to the tower. In another attempt, it applied for the lighthouse but was not awarded the deed. After the decision was made, Baker’s Island Lighthouse Preservation Society appealed the decision in an administrative appeal and then further in a lawsuit, referred to as Baker’s Island Lighthouse Preservation Society, Inc. et. al. v. United States Department of Interior et. al. In the lawsuit, the Society stated that the Essex National Heritage Commission does not have the necessary access to the lighthouse and claimed the General Services Administration does not own the lighthouse. The Society also claimed that the National Park Service was biased towards the Essex National Heritage Commission because the nonprofit organization is affiliated with the National Park Service. After several years of conflict, the judge ruled in favor of the National Park Service and the Essex National Heritage Commission.

In another case in 2008, the GSA awarded Penfield Reef Lighthouse off the Connecticut coast to a nonprofit, Beacon Preservation. At that time, the nonprofit had already acquired Goose Rocks Lighthouse in Maine through the NHLPA process. Although the Penfield Reef Lighthouse was awarded to Beacon Preservation, there were concerns about the owner of the bottomlands underneath the lighthouse. In many cases the land

under the lighthouses is owned by the state. In such instances, a lease agreement is settled upon between the new owner and the state. In case of the Penfield Reef Lighthouse, a dispute between the federal government and state of Connecticut ensued on who owned the bottomlands. Soon after, the state deeded the bottomlands to the city of Fairfield, complicating matters further. With no agreement in sight, in 2011, the General Services Administration decided to withdraw the offer to Beacon Preservation and decided to send

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the lighthouse to auction.\footnote{Bill Bittar, “Who owns Penfield Lighthouse?,” Fairfield Sun (Shelton, CT), February 19, 2009.}

Although the lighthouse was not transferred through a no-cost transfer, the auction process was complicated further by bottomlands leases and Hurricane Sandy. The city of Fairfield, with bottomlands in their procession, hoped to acquire the lighthouse in an auction. In the first auction, the winner at a bid of $45,000 decided against purchasing the lighthouse.\footnote{“Lighthouses of the U.S.: Connecticut,” University of North Carolina, The Lighthouse Directory, http://www.unc.edu/~rowlett/lighthouse/ct.htm.} In 2012, Hurricane Sandy hit the coast of Connecticut and heavily damaged the lighthouse. However, the U.S. Coast Guard was able to acquire funds from the 2013 Disaster Relief Appropriations Act.\footnote{H.R. 152 - Making supplemental appropriations for the fiscal year ending September 30, 2013, to improve and streamline disaster assistance for Hurricane Sandy, and other purposes.} The repair work completed in 2015 with these funds was primarily exterior work and totaled $1 million (See Fig. 5.5 and 5.6). The lighthouse, the Coast Guard warns, still needs a lot of work completed on the interior. Of the lastest update, the lighthouse was offered up in a second auction in July 2016.\footnote{Kenneth R. Gosselin, “Restored From Storm Sandy Damage, Penfield Reef Lighthouse On the Auction,” Hartford Courant (Hartford, CT), July 31, 2016.}

Recently, the New London Maritime Society has had several lawsuits associated with their onshore lighthouse, New London Harbor Lighthouse.\footnote{The New London Maritime Society owns three lighthouses, all through the NHLPA process: New London Harbor Lighthouse, New London Ledge Lighthouse, and Race Rock Lighthouse.} The lighthouse property is surrounded by private property on three sides. Several neighbors to the north and south have sued the nonprofit over several issues including trespassing and encroaching on the enjoyment of their property.\footnote{Judy Benson, “Neighbors of New London lighthouse suing maritime society; workers, visitors accused of trespassing,” The Day (New London, CT), November 19, 2014.} One of the adjacent properties is the old lighthouse keeper’s
house, which is now privately owned. The house, right adjacent to the tower, was sold as surplus property to private owners in 1928. These owners have placed “private property” signs near the lighthouse’s right of way. In the most recent legal battle, the city placed a cease-and-desist order on the society as of June 15, 2015, preventing the nonprofit from giving tours to the public (See Fig. 5.7). This was as a result of visitors coming to the site which was believed to be against the city’s zoning ordinances. The city states that the nonprofit is required to have a special permit to run the lighthouse as a museum. In a Zoning Board of Appeals meeting, the lawyer representing the Society stated the use of the lighthouse property has not changed because it still is an active aid to navigation. Also,

visitation to lighthouses was very common when lighthouse keepers managed the site. The deed requires that the lighthouse be maintained and accessible to the public.\textsuperscript{175} There is much frustration amongst the volunteers and members of the New London Maritime Society. Susan Tamulevich, the director of the society, stated in an article, “All we’re doing is fulfilling our obligation as stewards.”\textsuperscript{176} On the other hand, as of December 2016, the Society has elected a new president, Capt. Edward J. Cubanski III, who can hopefully bring new negotiations with their neighbors and the city.\textsuperscript{177} However, for the time being, the matter remains unresolved.\textsuperscript{178}

These major lawsuits produce large legal fees for all involved. The cases discussed previously were all nonprofits. These nonprofits cannot afford the costs associated with these legal cases. Attention and funds are in fact drawn away from the long term goal of the lighthouse’s preservation. Instead, focus turns to these legal cases, which can be quite complex and drawn out in the courts. It appears that most of these cases are related to ownership, whether it’s the initial owner awarded, the ownership of bottomlands, or right of way and intrusion on neighboring properties. Legal cases such as these will endure as the program continues to deed lighthouses to varied entities with conflicting views on the future of lighthouses.

Lighthouses have been affected by large storms throughout history. Recently,

\textsuperscript{178} The name of the main court case is \textit{Waesche et. al. v. New London Maritime Society, Inc.}
several large hurricanes along the coast have caused severe damage to lighthouses and have even destroyed a few of them. This includes a lighthouse conveyed through the NHLPA program called Old Orchard Light, located in New York City Harbor. The entire
lighthouse was destroyed, save the riprap and concrete pad, by Hurricane Sandy in 2012. This was a few years after the lighthouse had been conveyed to a private owner. (Fig. 5.8 and 5.9). According to reports, the cast iron lighthouse was hit by a large wave, shattered into pieces, and now sits at the bottom of the harbor. So the question is, what happens to lighthouses in the NHLPA program when they are destroyed by a storm or fire? The newly established National Lighthouse Museum, located on Staten Island in the old lighthouse depot, is in the process of retrieving pieces of the lighthouse from the bottom of the harbor. The museum’s hope, with the permission of the current owner and National Oceanic and Atmospheric Administration (NOAA), is to build a memorial at the museum and dedicate it to the people who lost their lives in the storm. The museum hopes to employ local divers and students studying maritime archaeology to restore and assemble the memorial. With this collaborative effort, the lighthouse can be pieced back together and bring back reminisces of the old lighthouse for local community members.179

**Similar International Programs**

In other countries several organizations hold jurisdiction over lighthouses. For example, in the United Kingdom, the lighthouses are primarily owned and operated by Trinity House, a nonprofit organization managing active aids to navigation and protecting mariners on the coasts.180 Trinity House has over sixty lighthouses in their jurisdiction in England, Wales, the Channel Island, and Gibraltar. Although no new legislation has been

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implemented similar to the NHLPA, Trinity House has reused some of the lighthouse keepers’ cottages as short-term luxury vacation homes. This is possible because many of the lighthouses owned by Trinity House are in “easy accessible areas and connected to the main services - electricity and water.” However, Trinity House does not manage the program. A third party specializing in vacation rentals called Rural Retreats manages the program, allowing the Trinity House to be concerned with maintaining the buildings, while benefiting from a revenue stream. This has allowed further public access to these sites as well as increase funds for maintenance costs of lighthouses (Fig. 5.10).

In Canada, the governing body passed the *Heritage Lighthouse Protection Act* in 2008. This legislation was in response to a similar scenario found in the United States during the 1990’s. Many of the country’s lighthouses were found in disrepair. The *Heritage Lighthouse Conservation Manual* (Saint-Germain en Laye, France: International Association of Marine Aids to Navigation and Lighthouse Authority, 2006).
Lighthouse Protection Act allows heritage lighthouses to be designated. Nominations are facilitated by Parks Canada, similar to the National Park Service. Once the lighthouse is designated, it requires that lighthouses be maintained and altered by the Standards and Guidelines of Historic Places in Canada, Canada’s equivalent to the Secretary of Interior’s Standards. The act also allows the facilitation of transfers and sales through the federal agency, Fisheries and Oceans Canada (DFO). As of July 2016, eighty-eight lighthouses have been designated through this program, ensuring their future protection.

According to the Parks Canada Agency, forty-two lighthouses in the program continue to be managed by the federal government. The remaining forty-six lighthouses are managed by non-federal entities. This program is similar to the NHLPA in that it allows for the transfer of lighthouses to different entities but the transfer process appears to be different. The act primarily focuses on the identification of heritage lighthouses, not transfers to new owners since about half of the lighthouses are maintained by the government. In comparison to the United States, the federal government in Canada has retained a larger percentage of the lighthouses. This program seeks to achieve similar outcomes as the NHLPA. In 2016, in celebration of Canada History Week, the Minister of Fisheries, Oceans, and the Canadian Coast Guard stated, “Our Government is ensuring that important heritage lighthouses on Canada’s coastal and inland waters remain protected for

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184 General Services Administration, 2015 NHLPA Highlights Report.
the future of Canadians and visitors from around the world.” Like Canada and the United States, many countries have leading administrative authorities overseeing their lighthouses associated with the federal government. However, each country has their own degree of interaction with their lighthouses. Like the United States, some of the responsibility is turned over to local and state entities to ensure their preservation. As is seen through the history of the NHLPA and similar programs in other countries, multiple ownership structures currently care for lighthouses.

**The Future of the Program**

As more lighthouses are conveyed through this act, more concern is drawn to lighthouses that have not been conveyed yet through the program and the reasoning behind the Coast Guard’s continued stewardship of the light stations. Several lighthouses have been deemed excess by the federal government and have not been transferred through the program. In several NHLPA reports, lighthouses have been listed as potential transfers and the status update of where those lighthouses are within the process.

Major concern grew over lighthouses near particular adjacent properties, owned by government entities and private owners. For example, several lighthouses in Alaska have been listed as potential transfers. However, based on what is stated in the reports, all of them needed environmental remediation conducted by the U.S. Coast Guard prior to the NHLPA process. Another component was many of these Alaskan lighthouses had

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adjacent and/or underlying property owned by the U.S. Forest Service. However, an act called The Coast Guard and Maritime Transportation Act of 2006, transferred this land from the U.S. Forestry Service to the U.S. Coast Guard. These lighthouses continue to be in limbo. However, several of the nonprofits who lease the lighthouses from U.S. Coast Guard hope to receive ownership in the near future. Another example is Point No Point Lighthouse (located in the Chesapeake Bay in Maryland) which is a boundary marker for the Navy’s Aerial Firing Range.\footnote{33 CFR 334.200 - Chesapeake Bay, Point Lookout to Cedar Point; aerial and surface firing range and target area, U.S. Naval Air Station, Patuxent River, Maryland, danger zones.} Originally, the lighthouse had gone to auction but the auction was suspended due to concern of the aerial firing range. Within these boundaries, firing practicing is executed by the Navy and may cause harm to the lighthouse property.

There are several lighthouses in Florida that have been considered surplus property by the U.S. Coast Guard for several years and have been listed as potential lighthouses for the program. In 2015, the U.S. Coast Guard installed temporary lights near the locations of the reefs, therefore deactivating several lighthouses.\footnote{In 2014 NHLPA Report, these lights were listed as “Carryover Lights.” These lighthouses are Carysfort Reef Light, Sand Key Light, Alligator Reef Light, Sombrero Reef Light, and American Shoal Light. All of these lighthouses are currently listed on the Doomsday List put out by Lighthouse Digest.} According to the Coast Guard, the lighthouses are considered unstable and unsafe, as technicians are unable to access the light. In a 2002 study on Florida lighthouses, Kenneth Smith Architects, Inc. and Bender & Associates, Architects provided structural analysis and cost estimates by assessing the lighthouses’ conditions. According to the report, the reef lighthouses will cost between $2 and $3 million.\footnote{These estimates include almost close to $1 million dollars in scaffolding and the added difficulty of a remote location.} At that time, one of the major concerns for the lighthouses was the roof.
system was compromised, allowing water to penetrate, and undermining other systems such as the floors and stairs. Wrought iron and cast iron deteriorate at an exponentially high rate when exposed to water.\textsuperscript{189}

All the Florida reef lighthouses, remote in their location, are located in submerged lands owned by the Bureau of Land Management. The U.S. Coast Guard and GSA have not come up with a solution in this particular matter. To only complicate matters further, if the lighthouse is conveyed to a new owner, they are required to obtain a permit with

\textsuperscript{189} Kenneth Smith Architects, Inc. and Bender & Associates, Architects, P.A., “Florida Lighthouse Study,” The State of Florida Department of State, Division of Historical Resources and Department of Community Affairs, Florida Coastal Management Program, 2002.
NOAA since the lighthouse is located within a National Marine Sanctuary. Although the lighthouses continue to stand, they stand abandoned and extremely vulnerable to the elements, allowing for their rapid deterioration (See Fig. 5.11). 190 These lighthouses have now been deactivated as of 2012. Temporary poles with lights were added to continue to warn mariners of the reefs as active aids to navigation.191

Several lighthouses that were put up for auction, however, were not transferred over to private hands when the Army Corps of Engineers would not lease piers to private individuals. They instead were sent through the process again and have since been conveyed. In a similar situation, lighthouses near power plants and other similar properties raised concerns such as security issues. One lighthouse deemed excess was heavily damaged by Hurricane Katrina. The lighthouse was reclaimed by a local nonprofit and now serves as a private aid to navigation.

Several lighthouses are still in the process of being transferred or were just recently auctioned, including Greens Ledge Light (CT), Southwest Ledge Light (CT), and North Manitou Light (MI).192 Hopefully, once transferred over to their new respective owners, they will be preserved for future generations.193

Many of these stewards, both stewardship transfers and private, have concerns for funding their preservation efforts. In many cases, owners own several lighthouses and

190 General Services Administration, NHLPA Highlights Report, 2014.
192 Ibid.
193 General Services Administration, NHLPA Highlights Report, 2015.
must split the funds amongst the multiple properties.\footnote{For example, Michigan Department of Natural Resources is responsible for eight lighthouses; one conveyed through NHLPA.} After the NHLPA program was established, new legislation was proposed to Congress in 2008. This new legislation, the National Lighthouse Stewardship Act, was proposed by several senators including Mr. Levin (D-MI), Ms. Snowe (R-ME), Ms. Stabenow (D-MI), Ms. Collins (R-ME), and Mr. Schumer (D-NY). The act was to promote the continued support of lighthouse preservation by nonprofit organizations. By 2008, fifty-eight lighthouses had been conveyed to stewards through the National Historic Lighthouse Preservation Act program.\footnote{General Services Administration, NHLPA Highlights Report, 2009.}

Many of these organizations realized the financial challenges that lighthouse rehabilitation pose and desperately require assistance in gaining the funds needed to address immediate preservation issues. The National Lighthouse Stewardship Act would act as a supplement to the NHLPA. The legislation put forth would create a three-year pilot program, allowing the Secretary of Interior to distribute $20 million dollars per year specifically to lighthouses. Not surprisingly, the two leading Senators, Mr. Levin and Ms. Snowe, were from the states of Michigan and Maine, respectively. These states have the highest number of lighthouses in the country with over one hundred and twenty lighthouses in Michigan, and eighty-three lighthouses in Maine.

Several lighthouse organizations wrote in support of Levin and Snowe’s act, fiercely asking Congress for more funding. This included the American Lighthouse Coordinating

Committee (ALCC) and Michigan Lighthouse Alliance (MLA). The Michigan Lighthouse Alliance stated in their letter that, “Most lighthouses are located in out of way places. As such, the number of people living around these remote structures is limited, and thus the local funding available for work is limited.” MLA even requested to continue the support of a staff member in the Michigan State Historic Preservation Office (SHPO) to ensure the continued support of lighthouse preservation. However, this legislation never had enough traction to be passed in Congress and soon died. The struggle continues and concern from the owners grows to find the proper funding for their preservation efforts.

In conclusion, the National Historic Lighthouse Preservation Act allowed for mass transfer of lighthouses in the United States. However, the ownership of a lighthouse can be quite complex, regarding legal cases and transfers. Owners are faced with large tasks to complete application within a short period of time in order to convey to the National Park Service they are the most suitable owner for a particular lighthouse. The following Analysis Chapter will assess directly the owners concerns and examine the success stories, as well as the challenges that the new lighthouse stewards face each day.

CHAPTER SIX
ANALYSIS OF NATIONAL HISTORIC LIGHTHOUSE PRESERVATION ACT

This chapter examines and measures achievements of the NHLPA program. It will also summarize responses from the owners’ surveys to develop an understanding of the successes and difficulties of various ownership structures. The survey was utilized to understand the type of lighthouses within the program as well as the owners’ experience throughout the transfer process and the subsequent rehabilitation efforts. The analysis focuses on the information retrieved from the Survey Monkey survey. However, additional information about each of the lighthouses was pulled from the National Park Service’s 1994 *Inventory of Historic Light Stations*, University of North Carolina’s *Lighthouse Directory* and Lighthouse Digest’s *Lighthouse Explorer*. Questions from the survey are divided into several topics including: Type of Owners, Location/Access, Application Process, Intended Use, Community Outreach, Conditions (before and after), Major Rehabilitation/Restoration Projects, Funding, and Future Preservation Work. Each topic is explored based on owners’ responses and supplemented by available literature about each of the topics. The goal of the analysis is to determine the effectiveness of the NHLPA and its future in the preservation of our nation’s lighthouses. Lighthouses can serve as a case study in the discussion of various ownership structures for other types of historical resources.

The survey was opened for three and a half months and closed on February 15, 2017. Collected data was summarized into a larger Microsoft Access database, in order that owners’ responses could be examined based on ownership type. A total of 50 lighthouse owners participated in the survey with discussion of 52 lighthouses (1 response covered 3 lighthouses). 51 of the lighthouses described in the survey responses were transferred through the NHLPA program while one lighthouse was transferred just prior to the act in 1999 through another piece of legislation not included in this study. The following sections will summarize the findings established from the survey conducted about the new lightkeepers of the National Historic Lighthouse Preservation Act program. (See Appendix D).

Types of Lighthouses and Building Materials

A variety of lighthouses across the country have been transferred through the NHLPA program, from offshore ‘sparkplug’ lights to masonry conical towers. In The Historic Lighthouse Preservation Handbook, a number of lighthouse types were identified: wood tower, masonry tower, wave-swept tower, concrete tower, cast-iron plate tower, skeletal tower, straightpile, screwpile, crib, caisson and, Texas Tower. The NHLPA program has conveyed all these types except for two types: the wood tower and straightpile. The majority of lighthouses in the program are masonry tower and offshore caisson lighthouses. (Fig. 6.1-6.10). When asked “What are the primary building materials of the lighthouse?”

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Figure 6.1 - Gurnet (Plymouth) Lighthouse (MA), an example of a wooden tower. The lighthouse is owned by USCG, but leased by nonprofit, Project Gurnet and Big Lights (Image: http://www.buglight.org).

Figure 6.2 - Gay Head Lighthouse (MA), an example of a masonry tower. The lighthouse is owned by the Town of Aquinnah and a part of the NHLPA program (Image from Library of Congress).

Figure 6.3 - Minot’s Ledge Light (MA), an example of a wave-swept tower. The lighthouse is in the NHLPA program and owned by a private owner (Image from Library of Congress).

Figure 6.4 - Five Fingers Light (AK), an example of a concrete tower. The lighthouse is in the NHLPA program and owned by a nonprofit (Image: http://www.5fingerlighthouse.com/index.html).

Figure 6.5 - Thomas Point Shoal Light (MD), an example of a screwpile lighthouse. The lighthouse is owned by the Town of Annapolis and managed by a nonprofit. It is also a part of the NHLPA program. (Image from U.S. Coast Guard Database).

Figure 6.6 - Liston Rear Range Light (DE), an example of a skeletal tower. This lighthouse is in the NHLPA program and owned by a private owner. (Image from Library of Congress).
owners responded with “cast iron” as the most prevalent. In many offshore lighthouses, the exterior is composed of cast iron plates, while masonry towers can contain cast iron elements, such as stairs, within their interiors. Brick, steel, and concrete are also other common materials used in these lighthouses.

The building materials utilized are reflective of their construction era and building type, primarily late nineteenth century to early twentieth century, when these materials
became popular for construction (See Table 6.1). This is also consistent with the finds of the *1994 Inventory of Historic Light Stations*, where cast iron and masonry were found to be the primary building materials in all existing lighthouses (Fig. 6.11). The lighthouses within the NHLPA program were constructed from early 1800s to 1960s. The oldest lighthouse in the program is New London Harbor Light in Connecticut, constructed in 1801 when the U.S. Department of Treasury was in charge of the lighthouses in the early years of administration. The youngest lighthouses are Charleston Light (1962) in South Carolina and Frying Pan Shoals Light (1966) in North Carolina, being the last lighthouses built in the United States.\(^{200}\) The survey responses include lighthouses from all construction time periods but are primarily from the late nineteenth to early twentieth century. Just as all lighthouses are unique, the ownership groups under the NHLPA Program are also varied. The following section will discuss the new lightkeepers of the 21st century.

**Types of Owners**

Four different types of owners participate in the NHLPA program: federal agency, local/state government, nonprofit, and private.\(^{201}\) Within the methodology, it states that twenty five percent of each category was needed in order to have a successful survey. Out of the 52 responses, the following number of surveys were received from each type

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\(^{201}\) It should be noted that the NHLPA program separates the ownerships into five categories: federal, local, nonprofit, state, and private. For the purpose of this thesis, local and state governments were combined. Within the program, only three lighthouses have been conveyed to state governments. For the purpose of this survey, the local and state governments were combined together, due to their similar management structure.
Figure 6.11 - Chart showing building materials of lighthouses in 1994 inventory. This chart shows that brick and iron were the top building materials, similar to the survey. (Image from 1994 Inventory of Historic Light Stations)

Table 6.1 - Primary Building Materials. Responses from owners when asked “What are the primary building materials of the lighthouse? (Check all that apply).” Cast iron and brick had the highest responses, reflective of the height of lighthouse construction during the late nineteenth century and early twentieth century.
Table 6.2 - Response Rate for NHLPA Owner Survey. As can be seen in the chart, a 25% response rate was achieved in three of the four categories. Private owners were more difficult to get a hold of due to lack of contact information.

Table 6.3 - Type of Ownership. Within the NHLPA program, there are four different types of ownerships: federal agency, local/state government, nonprofit organization, and private owner. Each owner is responsible for the preservation and maintenance upkeep of their station.

Table 6.4 - Type of Transfer. There are two different types of transfers within the program. First, there is a no-cost stewardship transfer, where federal agencies, local/state governments, and nonprofit organizations submit applications to the National Park Service for review. If no suitable applicant is chose, the lighthouse is offered up at an auction run by General Services Administration for public sale.
of owner: 37% federal agencies (3 out of 8); 64% local/state governments (16 out of 25); 56% non profit organizations (23 out of 41); and 15% private owner (7 out of 46) (Table 6.3). Contact information was found for about 75% of the total number of owners (approx. 90 owners). With the owners of 52 lighthouses submitting a survey for a program of 120 lighthouses, the survey responses analyzed represent a 54% response rate from the number of owners who had available contact information and a 40% response rate for the entire program. The response content will be key in the analysis sections that follow. Enough surveys were received from the different ownership categories to reach the goal of a 25% response rate except for the private ownership category. Private owners make up the largest category of ownerships within the NHLPA program, with a total of forty-six lighthouses. While conducting the survey, private owners were the most difficult to reach due to the lack of contact information available (Table 6.2).

There are two different types of conveyances in the program: stewardship transfer and public sale. As mentioned earlier, the stewardship transfers relate to applicants (federal agencies, local/state governments, and nonprofits) who submit applications to the National Park Service (NPS) for review. The Secretary of Interior, based on the National Park Service’s recommendations and their plans for the lighthouse, ultimately chooses the steward. For public conveyance, any organization or individual (private owner) can bid on the lighthouse through an auction run by the General Services Administration. Stewardship

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202 It should be noted that the federal agencies are only owners of eight lighthouses within the NHLPA program. Three responses were received from federal owners, which constitutes a sizable proportion, but due to the small sample size, analysis of such a small number of surveys could introduce anomalies which are not moderated over a large sample set as in the other sample sets for other categories of ownership.
transfers generally make up 60% of the entire NHLPA program. The survey results come from a slightly disproportional number of lighthouse owners who became owners of their lighthouses through stewardship transfer; 85% of lighthouses described in the survey responses had been conveyed through stewardship transfer, while the remaining owners were public sale (15%) (Table 6.4).\textsuperscript{203}

The survey revealed an interesting relationship between owner and manager. Arrangement between owners and managers creates a subset within the categories by creating an important hybrid type of ownership. Within the local/state government ownership group, the lighthouses can be owned by a local or state government, but managed by a separate nonprofit organization. In fact, 61% of the local/state governments in the survey

\textsuperscript{203} Both stewardship transfers and public sales require that the aids to navigation be the property of the United States as long as they continue to serve as navigational aids for the federal government. It also allows the U.S. Coast Guard to change and maintain the light at any time. All owners are required to comply with the Secretary of Interior’s Standards for the Treatment of Historic Properties. In addition, the stewardship transfers are required to make the lighthouse “available for the education, park, recreation, cultural, or historic preservation purposes for the general public.” The stewardship transfers are not allowed to sell or exchange any part of the light station including lenses unless approved by the Secretary of Interior. Also, they are not allowed to “conduct any commercial activities” unless the Secretary of Interior approves it. The private owners are excluded from these restrictions.
had a partnership with a local nonprofit organization or local museum (Table 6.5). In most cases, it was found that the nonprofit takes on the majority of the maintenance costs and upkeep of the lighthouse. For this particular ownership group, the individual submitting the survey responses could either be from the town or the nonprofit, depending on the contact information that was available. Through the data collected, another type of ownership has become apparent where governmental entities combine efforts with nonprofit organizations. Although more explicitly found in local/state government ownership in this survey, it can also be found in the federal ownership. This ownership structure is very successful in improving conditions of lighthouses in the program. Within the hybrid ownership, the duties can be divided up, including funding, maintenance, and administrative tasks. The leading government authority and volunteers from the nonprofit are both invested in the project, allowing for a stronger ownership structure.

**Location/Access**

Lighthouses have been transferred under the NHLPA in twenty two states and one territory, Puerto Rico. More than half of the lighthouses in the program (68) are located along the East Coast. The other lighthouses in the program are located in the Great Lakes, on the West Coast, Hawaii and Alaska. One of the areas that is underrepresented in this program is the Gulf Coast. This is probably due to the fact that there are few lighthouses along the Gulf Coast and many are located in remote areas. In fact, many of them are

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204 In the case of the Grand Haven Outer and Inner Lights, a representative from the local government and nonprofit filled out the survey. The responses from each survey were found to be very similar.
Table 6.6 - Locations of Lighthouses. The pie graph shows the distribution of onshore, pierhead/breakwater, island and offshore lighthouse within the entire program.

Figure 6.12 - New London Harbor Light (CT), an aerial of an onshore lighthouse. They can often be found in residential neighborhoods (Image from Google Maps).

Figure 6.13 - Kenosha North Pierhead Lighthouse (WI), an example of a pierhead lighthouse. They are accessed from the mainland by a pier (Image from Google Maps).

Figure 6.14 - Little Gull Island (NY), an aerial of an island lighthouse. Island lighthouses can be considered very remote (Image from Google Maps).

Figure 6.15 - Robbins Reef Light (NY), an example of an offshore lighthouse. These lighthouses can be the most remote and often do not have proper access (Image from Google Maps).
owned by nonprofits or other entities, not the U.S. Coast Guard, thus the NHLPA program contains few lighthouses from this area since its inception. Also, Hurricane Katrina in 2005 heavily damaged or destroyed many of the lighthouses along the Louisiana coast, further diminishing the number of lighthouses in the region and eligible for participation in the NHLPA program.\textsuperscript{205} Michigan, with the most lighthouses in the United States, has the most transfers within the program at thirty lighthouses.\textsuperscript{206} In this survey, fourteen lighthouses from Michigan are represented in the survey data.

There are a wide variety of lighthouses within the NHLPA program including locations on the mainland, on islands, and offshore. The lighthouse locations are divided into four different categories, based on access, for further analysis: onshore (Fig. 6.12), pierhead/breakwater (Fig. 6.13), island (Fig. 6.14), or offshore (Fig. 6.15). Onshore lighthouses are located on the mainland or an island with easy accessibility by car. For example, Tybee Island Lighthouse in Georgia, although located on an island, is easily accessible by car by way of a bridge and is therefore listed as an onshore lighthouse. Pierhead/Breakwater lighthouses are located near the shore and connected to the shore by a wall or jetty. These lighthouses have limited access due to the width and roughness of the jetty. They can be primarily found in the Great Lakes region, as they mark where a river meets one of the large lakes. Other lighthouses are located on islands and are only accessible by boat. In some cases, the light station is the only building occupying the


island. The final category, offshore lighthouses, offer very limited access, most with just a step over step ladder coming off of a boat and over water. Within the entire program, offshore lighthouses are the most prevalent at 46%. The other categories were evenly distributed with onshore lighthouses at 19%, pierhead/breakwater lighthouses at 18%, and island lighthouses at 16%. Survey results capture a relative sample in proportion to the program with 24% onshore (12), 24% pierhead (12), 14% island (7) and 38% offshore (19) lighthouses represented in the survey results (Table 6.6).

Several observations emerge about the locations of the lighthouses listed above. Federal agencies primarily own island lighthouses with some onshore and offshore lighthouses. The federal government does not own pierhead/breakwater lighthouses in this program. The two federal government agencies that own lighthouses in this program are the National Park Service and U.S. Fish and Wildlife Service. Many of these lighthouses are located in the vicinity of park lands and wildlife management areas, making ownership of the nearby/adjacent lighthouse an obvious choice for these particular ownerships. On the other hand, local/state governments primarily own pierhead/breakwater and mainland lighthouses, accessible to local towns and cities. Nonprofit organizations tend to own more remote lighthouses such as offshore or island lighthouses. Private owners own a majority of the offshore lighthouses, with very few onshore, pierhead/breakwater, or island

207 The following list of lighthouses are federally owned and list their associated park unit or agency:
lighthouses.

Historically, lighthouses in danger of destruction from coastal erosion have been relocated to new locations, and are either rebuilt or moved. Most famously, the Cape Hatteras Lighthouse was moved in 1999, a huge engineering feat. In more recent years, additional lighthouses have been moved from offshore to onshore and also moved from one location to another. Owners were asked whether their lighthouse is in its original location. Six owners (13%) replied with ‘no.’ Some indicated that other lighthouses had once existed on the site but are not there now. However, they are documented in photographs. In one case, the lighthouse was moved out 1,200 feet with the extension of the break wall due to the increase in the shipping industry in the area. Most recently, Gay Head Light, located on Martha’s Vineyard, was moved 135 feet from an eroding cliff (Fig. 6.16 and 6.17).
Figure 6.17 - Gay Head Light on the move in 2015. With the lighthouse located forty feet away from the cliff, the Town of Aquinnah raised funds to move the lighthouse to a new safe location (Image: www.gayheadlight.org).

This work was completed by the International Chimney Company, the same company that moved the Cape Hatteras Lighthouse and several other lighthouses. Prior to the move, the lighthouse was 43 feet away from the edge of the cliff and geologists suggested that the cliffs were eroding at an alarming rate of over a foot a year. It was considered to be one of America’s most endangered lighthouses. Once Gay Head Lighthouse was acquired by the town of Aquinnah, plans quickly moved into place and $3 million in funds were raised to move the lighthouse. In May 2015, the lighthouse was moved over the course of three days and the town ultimately saved the lighthouse from impending or immediate destruction.208

Location can play a key role in the preservation of these lighthouses. Besides a lighthouse’s location on or offshore, two other factors may come into play: proximity to a local community and mode of transportation. In the survey, one of the questions posed was “How far is the lighthouse from the local community?” The majority of the owners indicated their lighthouses were less than one to three miles away from the local community. Only

Figure 6.18 - Access to Graves Light (MA). The image above shows the ladder covered in ice at the bottom and visitors attempting to access the lighthouse by a dinghy. A tall step over step ladder allows access (Image: http://graveslightstation.com).

Figure 6.19 - Access to DeTour Reef Light (MI). Visitors wear a harness while climbing the step over step ladder to the top of the crib (Image: http://drlps.com).
several lighthouses were noted as being more than ten miles away from a local community. These lighthouses were primarily located on remote islands in Alaska and Maine. One thing to note is that the farthest lighthouses are not necessarily owned by private owners. Many nonprofit organizations and local/state governments own remote lighthouses, which often require more travel hours and oftentimes access to a boat (Fig. 6.18 and 6.19). For transportation to and from lighthouses, most owners said a boat was their primary mode of transportation (24), while car was the second most popular (16). Several lighthouses can be accessed by foot such as the pierhead and breakwater lighthouses (9). Two respondents indicated helicopters are used to reach their lighthouses and one owner said a snowmobile

![Image](http://www.waugoshance.org/)

**Figure 6.20** - Volunteers accessing Waugoshance Lighthouse (MI) by snowmobile. Access to lighthouses can be difficult for many lighthouses in the winter. This is especially true for lights located in the northern states such as Alaska or the Great Lake and New England regions.
was used to gain access to a lighthouse in Michigan (Fig 6.20). Many owners expressed that access is one of the major challenges they faced. This is especially true for offshore lighthouses. One owner stated, “Access is a challenge as the lighthouse is on an island with no real beach landing or place to keep a boat. Our only options are to be dropped off by boat or fly out by helicopter so access is expensive.”

Another owner stated, “It takes our volunteers two to three hours to get to the dock and then it’s another forty-five minutes on boat to the lighthouse. Currents are very swift there and docking long enough to get our volunteer preservationists on and off the lighthouse is hit or miss.” This complicates matters when trying to bring contractors out to work on the light stations for major projects, bringing in supplies, and even conducting general maintenance.

**Application Process**

One of the questions included in the survey asked about the owners’ experience during the initial application and transfer process. The sentiment from the owners about the experience was overall good with 76% of owners choosing an excellent or good rating, from the four options offered. Within the ownership categories, the participants rate the application process at excellent to good at a least above 66%. No ownership category appeared to be highly discontent with the application process, whether it be a stewardship transfer or public sale. However, private owners did have the most poor responses in

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relationship to other ownership structures.

For those owners that did rate their experience fair to poor, the respondents indicated the application was a very long process, citing issues with state bottomlands and legal cases as previously discussed in Chapter Five. The Baker’s Island Lighthouse in Massachusetts took eleven years from submitting application to the actual transfer due to legal cases with the island community.211 In a case related to public sales, an issue occurred when individuals were awarded the lighthouse but then defaulted on the deal. If this happened, the lighthouse would go up to auction again, rather than going to the second highest bidder. This seemed

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211 This is discussed more in the previous section, Chapter Four: National Historic Lighthouse Preservation Act.

Table 6.7 - Rating of Application Process. Owners responded to the question, “What was the experience during the initial application process and transfer process?” The responses were generally a positive experience.
to be a consistent problem for lighthouses sold at auction and caused long delays in transfer. However, this changed with the Fairport Harbor West Breakwater Light in Ohio after three winners defaulted in three separate auctions. For this particular property, the ownership required procuring insurance and leasing the platform on which the lighthouse sits on from the Army Corps of Engineers. Many private owners tended to default in the early auctions when the lighthouse required bottomlands leases or other requirements. The GSA amended the requirements for auctions just prior to the third auction for the Fairport Harbor West Breakwater Light. The new amendment allows the lighthouse to be awarded to the second highest bidder, if the first successful bidder defaults. When the *National Historic Lighthouse Preservation Act* was passed in 2000, it was intended to reduce the difficulty of acquiring lighthouses for nonprofit organizations. However, the ownership application process of a lighthouse still remains complex, and can be slowed down even further by the number of organizations involved.

**Intended Use**

Since lighthouses are no longer utilized for their original purpose of being active aids to navigation and housing the men and women who kept them, many of the structures have changed their primary program function. In *Building Pathology*, David S. Watt explains the general present notion that “for the vast majority of unoccupied premises...the best solution

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Figure 6.22 - Interior of residence at Newport News Middle Ground Light. The image shows one of the levels of the ‘spark plug’ lighthouse rehabilitated (Image: www.middlegroundlight.com).

Figure 6.21 - Interior of keeper’s quarters at Tybee Island Lighthouse (GA). Tybee Island Lighthouse interprets the site to a specific time period and includes period furniture and allows visitors to explore the lighthouse (Photograph by author).
Therefore, reuse is a preferable preservation option to vacancy. Many of these lighthouses have been abandoned by the U.S. Coast Guard for many years since the lights were automated. However, due to their unique shape and remote locations, it has become difficult for owners to reuse the space efficiently. In many cases, the lighthouses undergo a restoration, which is defined as “the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time” by removing features from previous time periods and adding elements that have been lost.\textsuperscript{214}

If a lighthouse is restored, it most likely is turned into an educational center or museum for education/museum which correlates with percentage of stewardship transfers. Other answers include private residence and preservation.

\textbf{Table 6.8 - Intended Use of Property.} Owners responded to the question, “What is the intended use of the property? (Check all that apply)” The majority of owners responded with education/museum which correlates with percentage of stewardship transfers. Other answers include private residence and preservation.


the local community. According to the survey, 80% of the owners who responded utilize their lighthouse for educational purposes or museums, which correlated with the number of stewardship transfers in the survey.

Private owners have different intentions with their properties. The majority use the structure as a private residence (55%) while others cited they purchased the lighthouse to strictly preserve it for future generations (45%). Some owners open their lighthouse each year for the general public to enjoy. Recently, according to a *New York Post* article, an owner, Frank Sciame, has plans to develop the Old Saybrook Breakwater Lighthouse in Connecticut into a clubhouse for his grandchildren. The lighthouse is a typical ‘sparkplug’ design with four floors and still contains much of its original character defining features and materials including cast iron windows and portholes.215

None of the owners indicated in the survey that they use their lighthouse as a bed and breakfast. Several lighthouses, however, have been turned into or associated with an inn or hostel. For example, there is the hostel at Pigeon Point Lighthouse in California and an inn at Cuckolds Lighthouse in Maine, which are both stewardship transfers. Several nonprofit organizations hold overnight lodging programs, or ‘keeper’s programs’ on weekends, such as DeTour Reef Light, which also helps fund the lighthouse. In some cases, private owners have turned their lighthouse into inns, with prices ranging from $300 to $900 a night, allowing visitors to be keepers for the night. Nick Korstad owns several

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lighthouses through the program including Borden Flats in Massachusetts and Spectacle Reef in Michigan. He restores the lighthouses himself and then opens them to the public when finished.\textsuperscript{216} The media has promoted many of these lighthouses due to the unique experience. In a CNN news video, Frying Pan Shoals Light, located 35 miles off the coast of North Carolina, is considered a “bed and breakfast for the adventurous.” Transportation to this particular lighthouse can be expensive due to access, which is situated in international waters and raises the price but it provides a once in a lifetime opportunity. Nonetheless, enough visitors see value in this type of adventure to keep the inn functioning. \textsuperscript{217}

In 2009, Michael Gabriel of Nevada who owns several lighthouses on the East Coast proposed to install microbreweries in his lighthouses. His proposal includes the installation of a desalination system within the lighthouse, which would allow him to make beer from seawater. Based on his estimates, the brewery would make 20 to 40 barrels a week. The funds produced by the brewery would be returned back to the maintenance of the lighthouse. However, he needed to receive approval from the Massachusetts State Historic Preservation Office.\textsuperscript{218} As of the present day, it is unclear if Mr. Gabriel was successful in his attempts to turn his lighthouses into microbreweries but it is an example

\textsuperscript{218} Michael Gabriel made successful bids on Borden Flats Lighthouse but defaulted. He currently owns Bloody Point Light and Fourteen Foot Bank Light. He made unsuccessful bids on West Point Light and Old Orchard Shoal, both located in New York harbor, and a lawsuit was filed by Gabriel against the General Services Administration. (Gabriel v. GSA); Jay Pateakos, “Something Is Brewing at Borden Flats Lighthouse,” The Herald News, Fall River, MA, accessed February 25, 2017, http://www.heraldnews.com/article/20090826/NEWS/308268976.
of an innovative reuse idea.

**Community Outreach**

The intended use of the lighthouse often dictates the number of visitors and the nature of the relationship fostered between the lighthouses as a historic resource and the local community. One of the major stipulations in the legislation for stewardship transfers is that they “shall make the historic light station available for education, park, recreation, cultural or historic preservation purposes for the general public at reasonable times, and under reasonable conditions.”\(^{219}\) This section of the legislation has increased access to lighthouses after stewards conduct large restoration projects.

Unfortunately, some of the lighthouses used as educational purposes are not accessible on the interior. In “Lighthouse Symbolism in the American Landscape,” Kevin Blake makes the point that “people bond more to lighthouses they can climb.”\(^{220}\) Ascending a tower can be exciting for visitors and allow the public to take advantage of the wonderful vantage points from the top. Lighthouses owned by nonprofit and local/state governments see the greatest number of visitors, with many lighthouses seeing over 10,000 visitors each year. Survey results show St. Augustine Lighthouse in Florida has the most visitors annually with about 200,000 visitors. The lighthouse is one of the most iconic lighthouses from the late nineteenth century, similar to design to Cape Hatteras Lighthouse in North

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Table 6.9 - Visitors. Owners responded to the question, “Approximately, how many visitors visit the lighthouse each year?” The two ownerships that received the most visitors were nonprofit and state/local governments.
Several owners (14%) indicated that they don’t allow visitors in their lighthouses. This was found only within federal and nonprofit owners. Federal owners appear to have the least amount of visitors. In many cases, these lighthouses include interpretation boards outside the lighthouse, such as Charleston Light (6.23). In its current state, Charleston Light contains an inoperative elevator. Instead, visitors would have to ascend stairs and use step over step ladders to access the lantern room. The lighthouse also contains hazardous materials such as asbestos and lead paint. Prior to visitors experiencing the lighthouse, the elevator would need to be repaired and the hazardous materials removed. In many cases, only volunteer workers are allowed to visit the lighthouse in order to perform routine maintenance or if necessary, large restoration projects. Many of these same owners indicated that they wished more visitors could access their lighthouse’s interior. However, they make
Figure 6.24 - Site Plan of Fort Gratiot Lighthouse and Park (MI). The site of lighthouse include a park and recreation area, providing a gathering place for local community members (Illustration provided by owner).

the point that the lighthouse grounds are open and the iconic structure can still be viewed from the outside. For private owners, most respondents chose the 1-100 range but several picked the 101-10,000 range. Private owners generally just share their lighthouses with family and friends but some are becoming more flexible about opening and sharing them with the public. In fact, the owner of Fairport Harbor West Lighthouse holds an annual open house for the lighthouse so she can share her restoration work with the public.

Many owners discussed the rewards of ownership in the survey, which were
primarily related to community outreach and the visitors coming to see their lighthouse. Many stewardship transfers take great pride in preserving an icon in their community. The Gay Head Lighthouse has created revenue for the town by attracting more visitors to the community through their lighthouse tours. The lighthouse is now considered a “chess piece for [an] overall cultural arts district involving the Gay Head Cliffs, shop, tribal museum, beaches, and picnic grounds.”

On the other hand, a few owners have expressed a lack of local community interest. One owner cited that this was partially due to an economic decline within the town, where many residents have lost their jobs. Another lighthouse owner initially believed that funding would be supported by local enthusiasts but that was not the case. Most lighthouse owners have a positive sentiment about the relationship between residents of the nearby community and the lighthouses in their possession based on the results from the survey. For the majority of the owners, the most rewarding part of owning the lighthouse is the positive support from the public. One owner stated “Rewards are seeing the people enjoy the lighthouse and the kids who are experiencing it for the first time and loving it.”

One of the main goals of the NHLPA was to preserve historic lighthouses for future generations. Now with more restored lighthouses accessible to the public, thousands of people have been reaping the benefits of the legislation since its passage in 2000.

Fresnel Lenses

Several lighthouses today contain operational classical Fresnel lenses in the United States.223 According to a survey conducted by the U.S. Lighthouse Society, eighty-one Fresnel lenses within lighthouses are still operational aids to navigation. Within this list, ten lighthouses are listed in the National Historic Lighthouse Preservation program (Fig. 6.25 and 6.26).224 However, many Fresnel lenses are no longer operational and are now on display in museums or at U.S. Coast Guard facilities. Indeed, about half of the lighthouses in the NHLPA program have Fresnel lenses. Ten of those Fresnel lenses are in operation while the other retired Fresnel lenses are on display nearby with a managing museum or in another location.

223 See Chapter Three: History of Lighthouse Management and Maintenance for more information on the history of Fresnel lens.
Due to their extreme frailty of Fresnel lenses, the U.S. Coast Guard requires an Historic Preservation Maintenance Plan for Fresnel Lenses, especially for lenses still used as active aids to navigation. The lantern room, where the light is held, can be an extremely harsh environment and certain considerations must be made in order to continue to preserve the Fresnel lens. For the most minimal protection, the lantern room should be protected from ultraviolet rays from the sun, with the use of shades, curtains, or applying a UV rated film to the windows. The lantern room should be held in proper condition with windows and roof properly sealed to prevent water intrusion that will harm the lens. The guidelines further state that the access to the lantern room should be limited to six people, if necessary. Additionally, it is advised that lighthouse visitors do not have access to the lantern room in order to prevent damage to the fragile lens.225

When the lighthouse is originally transferred to the new owner, the Fresnel lens requires a condition assessment. This allows the new owners to devise a long term preservation plan with the U.S. Coast Guard. For Fresnel lenses located in museums or nearby facilities, there are important considerations when displaying or storing the lens. The lens display must have some type of enclosure. Similar to museum settings, the temperature and humidity must not fluctuate and be controlled. For overall maintenance of the lens, “minimal contact is considered best practice for long term preservation and damage.”226 Fresnel lenses are an important element of lighthouse heritage and they should

226 Ibid.
be handled with care and concern for their future preservation.

**Natural Disasters**

Historically, lighthouses have been affected and highly damaged by natural disasters. Due to their locations near or in the water, they can be fully exposed to hurricanes and large storms with no protection. The majority (38%) of the owners replied ‘no’ to if natural disasters (large storms, hurricanes, earthquakes) affected their lighthouse. In fact, one federal owner said “Surprisingly, hurricanes have done little damage. The structure is threatened by neglect. The worst thing that ever happened to it was full automation in the early 1970s. At that point, keepers permanently left the structure, and with them regular upkeep.” But the fact remains, storms do continue to weaken these once neglected lighthouses. The owners (62%) who did reply ‘yes’ explained large storms such as Superstorm Sandy caused much devastation to lighthouses in the New Jersey and New York area in 2012. The Charleston Earthquake of 1886 was cited as causing cracks and damage to both the tower and keeper’s dwelling at St. Simon’s Lighthouse in Georgia. One private owner suggested that the docks and small buildings on the site have been knocked down in large storms since 1871. In October 2016, Hurricane Matthew hit the southeastern United States, causing damage in Florida, Georgia, South Carolina, and North Carolina. The lighthouses affected fared relatively well. The most damage received were primarily downed trees on each of the sites with some minor damage to roofs and broken windows. Although Mother Nature may not be the biggest threat to the preservation of lighthouses,
Table 6.10 - General Conditions (Upon Transfer) of Lighthouses. Owners responded to the question, “What was the general condition of the lighthouse and the other buildings upon transfer of ownership?” These refers to the conditions found when the lighthouse was transferred to them by the U.S. Coast Guard The majority of owners replied with Fair to Poor ratings.

Table 6.11 - Current Conditions of the Lighthouses. Owners responded to the question, “What are the current conditions of the lighthouse?” The majority of owners responded with a Excellent to Good rating, showing lighthouses have improved due to transfer. These conditions were confirmed by photographs.
constant battering by the elements does take its toll.\textsuperscript{227}

**Conditions of Lighthouses (Before and After Transfer)**

A proper assessment of the conditions of the lighthouses both prior and subsequent to the transfer of ownership was important to see if improvements actually occurred under the NHLPA program. When the U.S. Coast Guard established the Lighthouse Automation and Modernization Program (LAMP) in the 1960s, it left the lighthouses unmanned, and therefore unmaintained. The majority of the lighthouses in this program were automated when the LAMP program was initiated in the 1960s and 1970s.\textsuperscript{228} This means that the light

\textsuperscript{227} Ellen Rankin, Personal Correspondence, October 17, 2016.
Figure 6.27 - Various conditions found at Fowey Rocks Lighthouse (FL) in 2002. Many conditions were found including barnacles on iron structural components, severe corrosion and cracking of iron components, as well as missing iron components, and impacts on guardrails (Photographs from 2002 Florida Lighthouse Study).

Figure 6.28 - Various conditions found at Newport News Middle Ground Light (VA) upon transfer. A lot of debris was found in the lighthouse, the floors were all ripped and rotted on the deck. Several iron components of the railing were missing (Image: http://www.middlegroundlight.com/).
stations had no regular upkeep for thirty to fifty years, leaving the lighthouses in fair to poor condition. Owners (80%) gave a fair to poor rating for conditions upon transfer of the ownership from the U.S. Coast Guard. The poorest conditions were found within the private and local/state government ownerships. However, many of these lighthouses saw conditions improve with the new ownership. When asked “What are the current conditions of the lighthouse?” the owners responses increased 51% (from 20% to 71%) in the ‘excellent to good range.’ At 71%, the majority of lighthouses seemed to be in much better condition than prior to transfer. It appears that federal lighthouses had decreased in rating or stayed stagnant since time of transfer. When asked if conditions had improved since transfer of ownership, 61% said yes, and 39% said no. Federal, local/state, and nonprofit all were split with a small percentage of no. All private owners said yes, meaning all private owners achieved improvement.

Local/state governments and nonprofit organizations saw a wide range of conditions from “staying stagnant to increasing from poor to excellent.” Private owners appear to have experienced the most significant change from poor to excellent or poor to good. These condition ratings were helpful in understanding if lighthouses have improved over time since initial transfer. This appears to be true from the majority of the owners’ responses with 61% indicating they have seen improvements in the overall condition of their structure. The lighthouses which did not improve or had very little change were newly acquired at the time of survey or had a lack of funding and/or interest in the project, as expressed by the owner. The conditions were verified through before and after photographs provided by the
Figure 6.29 - Various conditions found at Fort Gratiot Lighthouse (MI) upon transfer. Conditions included vertical cracks in masonry, spalling brick and peeling paint, deteriorated flashing where roof meets masonry tower, and delaminating cast iron panels on the gallery level (Photographs provided by owner).

Figure 6.30 - Various conditions found at Kewaunee Lighthouse (WI) upon transfer. Conditions included peeling paint, and other deterioration (Photographs provided by owner).

Figure 6.31 - Various conditions found at Brandywine Shoals Light (NJ) upon transfer. Corrosion of metal components in the facade and steps (Image: http://brandywineshoal.org/).
owners as well as succinct descriptions of the conditions found upon transfer. In the field of historic preservation, condition assessments and historic structure reports are utilized to identify current conditions of the lighthouse and create treatment plans. The following paragraphs will discuss the types of conditions owners initially experienced when first assessing the lighthouse.

It appears that most lighthouses in the program seemed structurally sound upon transfer. A few lighthouses had full restorations prior to the transfer, improving their initial condition rate and the conditions upon transfer rating for the others were generally perceived as “good.” Because many of the lighthouses had not been regularly maintained, many owners found conditions related to water infiltration. Water can cause major damage to any structure including floors, structure, and roof. Since many of these lighthouses are made with cast iron, (and as building type are inherently near large bodies of water) they are vulnerable in marine environments. When iron is exposed to moisture and salts, the iron will begin to oxidize and deteriorate in the form of rust (hydrated iron oxide).\(^{229}\) The current U.S. Lighthouse Society Vice President and manager of Thomas Point Shoal Light and Hooper Island Lighthouse, both located in Maryland, stated that the conditions of Hooper Island Lighthouse were alarming upon transfer. He stated:

\(^{229}\) David Watt, *Building Pathology*, 120–121.
corroded, causing structural integrity issues in a few areas. Porthole windows in the caisson were missing and water had penetrated into the basement over the years.\textsuperscript{230}

This detailed description explaining the extent of the water intrusion at Hooper Island is fairly typical for many offshore and remote lighthouses. With the lighthouses entirely surrounded by water and years of neglect, these structures can be very vulnerable to rapid decay.

Also, many lighthouse owners were concerned with the presence of asbestos and peeling lead paint, both hazardous materials for humans that need proper removal as they cited issues associated with the condition rating they gave in the survey. Other conditions included severe to minor cracking in various materials including masonry, concrete, and iron. In one particular case, moisture intrusion into metal components of reinforced concrete walls caused large cracking in the concrete. In colder, northern states, owners found damage inflicted by ice and freeze/thaw cycles.

In some cases, lighthouse owners had to undo some of the projects the U.S. Coast Guard implemented that were unkind to historic materials. At Sentinel Island Light in Alaska, the original windows had been removed. Concrete was filled in their place and covered with plexiglass. When the nonprofit took ownership of the lighthouse, they removed the concrete fill and replaced it with new windows for interpretation as well as material compatibility. In addition, some lighthouse owners saw anthropogenic damage

such as fire and vandalism. In one case, the Waugoshance Lighthouse in Michigan was used as target practice during World War II, leaving the keepers’ quarters in ruins after a fire. Also, some owners found a large amount of debris on the interior from deterioration and even seagull infestation. More concerning conditions that were found were bulging of the masonry facade, settlement, and collapsed pieces of the structure including chimneys and ladders.

The improvement of conditions play the largest factor in the success of the program in preservation terms. Further synthesis of these improvements will be discussed in the following chapter, where each ownership structure will be looked at as a whole.

**Major Rehabilitation/Restoration Projects**

In the Secretary of Interior’s Standards for the Treatment of Historic Properties, four approaches are identified: preservation, rehabilitation, restoration and reconstruction. Lighthouses across the country have employed these approaches for their future preservation. The lighthouses in the NHLPA program primarily focus on two approaches, preservation and rehabilitation.

preservation. The lighthouses in the NHLPA program primarily focus on two approaches, preservation and rehabilitation. According to the Secretary of Interior’s Standards for Historic Properties, the first approach, preservation, is “sustain[ing] the existing form, integrity and materials of a historic property.” Rehabilitation, a popular method for adaptive reuse projects, is preserving character defining features while altering the building into a new use. Restoration, utilized primarily in educational centers and museums, is returning a built structure to a particular time period and removing later additions not relevant to the restoration time period. The final technique, reconstruction is constructing a building that no longer exists and “replicating its appearance” through new construction.

An example of preservation is Morris Island Lighthouse, located in Charleston, South Carolina, where the local nonprofit Save the Light has sustained its current form. For an example of rehabilitation, Middle Ground Light (a part of the NHLPA program), located in the Chesapeake Bay has been turned into a private summer residence. A restoration precedent is Tybee Island Lighthouse Complex (a part of NHLPA program), near Savannah Georgia, has returned the complex to its heyday when lighthouse keepers managed the lighthouse. An example of a reconstruction is St. George’s Light in Florida, which was weakened by a large storm and eventually destroyed. The lighthouse was reconstructed with the remaining pieces in a separate location, to ensure structural stability of the soil.
Table 6.13 - Restoration Projects Prior to Transfer. Owners were asked “Are you aware of any restoration projects done prior to transfer of ownership?” Nonprofits were most likely to have restoration work prior to the transfer of ownership. Nonprofits often managed the lighthouse property prior to ownership.

Table 6.13 - Major Restoration Projects during Ownership. Owners responded to the question, “Have the conditions improved since transfer of ownership?” Generally, the conditions have improved significantly since owners have taken over ownership of these lighthouses.
Figure 6.32 - Newport News Middle Ground Light (VA), before and after rehabilitation. This lighthouse is owned privately and the rehabilitation conducted by their family (Image: http://www.middlegroundlight.com/).

Figure 6.33 - Fairport Harbor West Breakwater Light (OH), before and after rehabilitation. This lighthouse is owned privately and rehabilitated into a summer residence (Photograph provided by owner).
rehabilitation and restoration. Since some lighthouses have changed their primary function, rehabilitation is a reasonable method for moving forward, particularly for private owners as discussed previously. For those organizations which want to transform their lighthouse sites into educational centers and museums, restoration is the treatment option utilized in order to allow for interpretation of the site. Both rehabilitation and restoration projects will be addressed in the following paragraphs.

Several survey questions elicited commentary about both prior and current restoration projects. When asked whether the owners were aware of any major restoration projects prior to the transfer, 64% of owners replied ‘no’ (Table 6.13). Stewardship transfers to federal, local/state and nonprofits were mostly likely to have restoration work completed prior to their transfer (36%). This is probably due to the fact that this particular owner entity had an established relationship with the U.S. Coast Guard as a lessee and was performing routine maintenance prior to the transfer. This is especially true for lighthouses within the pilot program of 2002 such as Florida’s St. Augustine Lighthouse and Georgia’s Tybee Island Lighthouse. In a 2002 Florida Lighthouse Study, architects inspected St. Augustine Lighthouse and with the restoration completed in 1994, the lighthouse only required minor repainting and repointing of the masonry and small repairs in the lantern and keeper’s house. In the report, it stated, “The success of the restored St. Augustine Lighthouse and Museum is an excellent example for the restoration and use of other Florida lighthouses.”

233 Kenneth Smith Architects, Inc. and Bender & Associates, Architects, P.A., “Florida Lighthouse Study,” The State of Florida Department of State, Division of Historical Resources and Department of Community Affairs, Florida Coastal Management Program.
Figure 6.34 - Whaleback Ledge Lighthouse (ME), before and after rehabilitation. This lighthouse is owned by a nonprofit. Access has been a major issue at this site (Photograph provided by owner).
Figure 6.35 - Fort Gratiot Lighthouse (MI), before and after rehabilitation. This lighthouse is owned by a county and has created a park around the lighthouse (Photograph provided by owner).

Figure 6.36 - DeTour Reef Light (MI), before and after rehabilitation. This lighthouse is owned by a nonprofit and has had success with funding and weekend lighthouse keepers programs (Photograph provided by owner).
other hand, private owners all said no that no restoration work was done. Private owners have the most remote lighthouses, and with that, most likely less routine maintenance during U.S. Coast Guard ownership.

In another question, the survey asked “During your ownership, have you done any major restoration?” 72% of owners replied with ‘yes.’ Out of those owners who did respond ‘yes,’ 42% said they had restoration projects done prior to the transfer, and 58% of owners having no major restoration projects done prior to ownership. One concerning matter is that none of the federally-owned lighthouses had completed restoration work during their ownership. This is most likely due to a lack of funding. In fact, ten owners out of the fifty-two total owners who responded said that no restoration work had been completed prior or during their ownership.

Most of the documented restoration work was completed in the 1980s and 1990s by the U.S. Coast Guard or lessees and primarily involved routine maintenance including painting the lighthouse. Other projects as described in the survey included cleaning up debris, installing new windows and doors, as well as larger projects such as installing new roofs. In general, private owners were not aware of any restoration work prior to their acquisition of the lighthouse. In fact, many found their lighthouses neglected from many years of abandonment. This is not to say that the U.S. Coast Guard does not necessarily complete large scale projects or routine maintenance on the lighthouses they do own. In fact, the New Cape Henry Lighthouse in Virginia is undergoing major restoration work including replacing and repairing historic materials and repainting the lighthouse. The New Cape
Henry Lighthouse continues to be own by the U.S. Coast Guard, which is responsible for its maintenance. However, the Old Cape Henry Lighthouse nearby is owned by a nonprofit organization, Preservation Virginia. Since little funding is allocated to lighthouses, the U.S. Coast Guard is more selective in the types of restoration projects conducted.\textsuperscript{234} Prior to Baker Island Light in Massachusetts being transferred, the U.S. Coast Guard performed extensive site remediation project which entailed removing the lead contaminated soil from around the buildings. This was mostly likely attributed to the preparation work required prior to the transfer of ownership due to an environmental assessment.

Many of the rehabilitation and restoration projects which occurred required the introduction of utilities for thermal comfort and commodities for visitors. When asked if the owners had made any modern improvements or modifications, 40% replied ‘yes’ and 60% replied ‘no.’ The majority (70%) of private owners said they had made modern improvements and modifications. Since many of the lighthouses in private ownership are turned into private residences, upgraded electrical and plumbing systems for both water and sewage may have been needed. At Fairport Harbor West Breakwater in Ohio, the private owner uses a composting toilet and buckets of water from the lake. She has not been successful in acquiring fresh water to make the bathrooms, kitchen, and laundry room usable. The electrical source at the lighthouse is a large gasoline generator, allowing her to run kitchen appliances and charge her phone while at the lighthouse. Modifications, if done well, are essential in attracting private owners to these remote locations. Many of these lighthouses do not have the regular infrastructure (electrical, running water, mechanical systems) for 21st century living and owners must come up with creative ways to generate power and collect water to address basic creature comforts. Due to these large scale rehabilitation and restoration projects, the conditions of lighthouses have improved. The new owners are investing a lot of money into these projects but the effects are paramount.

**Funding**

As stated earlier, one of the biggest challenges faced by owners of all types is acquiring the funds to preserve these lighthouses. In comparison to other buildings,
Q27: What are your approximate yearly maintenance costs (not including major restoration projects)?

- $0 - $25,000
- $25,001 - $50,000
- $50,001 - $100,000
- $100,001 - $250,000
- Over $250,000

Q28: Is your budget sufficient to cover maintenance costs?

- Yes: 51%
- No: 49%

Table 6.16 - Approximate Yearly Maintenance Costs. Owners were asked the question, “What are your approximate yearly maintenance costs (not including major restoration projects)?” The majority of lighthouses cost less than $50,000 per year. Those lighthouses costing more than $50,000 per year own multiple buildings and have the most visitors.

Table 6.17 - Sufficient Budget. Owners were asked the question, “Is your budget sufficient to cover maintenance costs?” Private owners said their budget was sufficient for general maintenance costs. The other ownerships were more split in their answers.
lighthouses can be described as ‘large money pits’ due to their proximity to water and exposure to a harsh marine climate, both of which cause rapid deterioration. When asked about their approximate yearly maintenance costs, the majority of owners (75%) replied within the $0 to $25,000 range (Table 6.16). The most costly lighthouses, St. Augustine and Tybee Island Lighthouse owners stated they spend between the $50,001 to $100,000 range annually. This may partially be due to the number of buildings located on the site as well as the number or “volume” of visitors coming to the site. Tybee Island Lighthouse has several buildings on site including keepers’ quarters, and an oil house. When asked if their budget was sufficient to cover maintenance costs, owners were split in half (51% yes; 49% no) (Table 6.17). Some owners are responsible for several lighthouses and must split up their available funds between the lighthouses.

There are several sources of funding and revenue streams available to lighthouse owners, including donations, grants, entry fees, and private income. When asked to rank their source of funding, owners who procured their lighthouses through stewardship transfers (federal, local/state, and nonprofit) ranked donations as their highest source, followed by grants. Entry fees were primarily ranked third. As to be expected, private owners received their funding from their own private incomes. For stewardship transfers, grants and large donations appear to be the most helpful in large scale restoration projects, since they bring in the most funding. Most owners said that funding was one of the major challenges they face in order to maintain the lighthouse. In one survey, the owner said:

Potential owners should not underestimate the costs of maintaining fabric.
Table 6.18 - Funding Sources. Owners were asked the question, “What is your main source of funding for maintaining the lighthouse (Please rank them. 1 = highest, 4 = lowest)” Stewardship transfers were primarily funded through grants and donations while private owners chose private income.
Many have fund drives to raise the initial monies to restore the structure without realizing these costs recur. Historic lighthouses will need corrosion abatement and paint every 5-6 years at a minimum and this work can cost in the hundreds of thousands of dollars each time it is done, not to mention periodic monitoring by a structural engineer or restoration architect.\footnote{\textit{St. Augustine Light},” National Historic Lighthouse Preservation Act Owner Survey, Survey Monkey, October 2016- February 2017.}

A review of some of the funding sources available specifically for lighthouse preservation, both from the past and present is pertinent. In 1989, Congress passed a bill to create a Bicentennial Lighthouse Fund to commemorate the 200th year anniversary of the Lighthouse Act of 1789. Run by the National Park Service and with assistance from the Lighthouse Preservation Society, the grant program provided $3 million in funds to 160 lighthouses across the country.\footnote{“Accomplishments of The Lighthouse Preservation Society,” The Lighthouse Preservation Society, accessed February 17, 2017, http://www.lighthousepreservation.org/accomplishments.php.} The U.S. Lighthouse Society recently started their own lighthouse grant program in 2014. Several lighthouses in the NHLPA program have been awarded grants in the past several years. This includes Muskegon South Pierhead Light (Michigan), Sentinel Island Light (Alaska), Race Rock (New York), and Toledo Harbor (Ohio). Projects included restoring elements of the lantern including glass, framing, and mullions as well as window replacement.\footnote{“Preservation Grants Program,” U.S. Lighthouse Society, accessed February 19, 2017, http://uslhs.org/about/preservation-grants-program.}

The National Park Service also manages the National Maritime Heritage Grant Program, which was created in the National Maritime Heritage Act of 1994. However, grants were only awarded to eligible projects in 1998. The grant program was discontinued until 2014, but now again grants fund eligible maritime heritage projects. In 2015, the...
Maritime Heritage Grant Program provided the Michigan State Historic Preservation Office with funds to complete Historic Structure Reports for four offshore lighthouses owned by nonprofits. The Stepping Stones Light was also provided a grant “to make critical repairs to halt further deterioration of the lighthouse.” Most of these grant programs are still limited in the amount of funding they can provide organizations. The grants typically range from $30,000 to $200,000, which is only a fraction of many rehabilitation and restoration costs.238 These grants can jumpstart preservation projects but other sources of funding are needed. Similarly, fundraisers are minimal and cannot possibly cover the funds needed for general upkeep and large restoration projects.

Some owners, such as DeTour Reef Light, which is managed by the nonprofit DeTour Reef Light Preservation Society (DRLPS), found creative ways to fund their restoration projects. Early on, the society held fundraisers and created a strong membership base of volunteers. Funding was mostly provided through grants from the federal and state governments. The nonprofit was able to raise $1,190,156 in grants for the restoration of the lighthouse. Their grants were not through the usual sources, however. In fact, state funds from Michigan Department of Environmental Quality - Clean Michigan Initiative (MDEQ-CMI) provided $705,000 and federal funds from Michigan Department of Transportation - Transportation Equity Act (MDOT-TEA21) provided $241,500. Both of these grants require matching funds from the organization. However, the group realized they could use federal grants to match the state grants and vice versa. The lighthouse was also supported

by Michigan SHPO with their Michigan Lighthouse Assistance Program ($199,456) and
the Michigan Coastal Management Program ($42,500). Initially, DRLPS encountered
challenges with the Department of Transportation and required a lot of collaborative effort
between the nonprofit, a local community DeTour Village, and the federal government.
Chuck Feltner said it was all hard work, that the grants did not necessarily come easily.
Securing funds required a lot of planning and negotiating in order to achieve their goals.239
With the restoration now completed, this lighthouse has been a leading example in the
NHLPA program of preserving an offshore lighthouse. In fact, Port Austin Reef Light
Association stated in their survey, they would model their restoration efforts on the DeTour
Reef Light.

Future Preservation Work

The list for ongoing and future preservation work is endless for lighthouses as
expressed in the responses to the final questions in the survey “What are some of the
anticipated expenses that you might face in the next five years?” and “If you had an extra
$50,000 (hypothetically) to spend on your property, what would you spend it on?” The
answers do not necessarily follow a pattern among owners. According to owners’ responses,
general maintenance and administrative concerns were a major part of future concerns as
well as more complex restoration projects.

Not surprising, general maintenance was mentioned in the majority of the responses.

239 Jeri Baron Feltner, “The DRLPS Story;” Jeri Baron Feltner and Chuck Feltner, Personal
Correspondence, February 2, 2017.
These included projects such as painting, cast iron replenishment, protective coating applications, brickwork cleaning, roof replacement, and landscaping. One response that was consistent among all owners was the need to install new docks or platforms to the lighthouse so as to allow proper access for visitors. For Waugoshance Light in Michigan, owned by a nonprofit, rebuilding a roof above the keepers’ quarters is a major focus since the structure is currently exposed to the elements. The nonprofit would also like to secure the base of the structure. In another case, at Fowey Rocks in Florida, currently owned by the NPS, a major project desperately needs to be completed to reverse a prior project conducted by the U.S. Coast Guard. When the Coast Guard was responsible for the lighthouse’s maintenance they attached non-historic stainless steel components to historic structural iron elements. The stainless steel is now causing an acceleration in the corrosion of the iron. The National Park Service would also like to perform lead abatement to the painted surfaces, since lead paint is a hazardous material to human health.

Other owners responded to “What have been the challengers and the rewards during your ownership?” with additional concerns such as annual liability insurance, transportation, and installation of educational signage. Owners discussed funds going to historic structure reports of the buildings and archaeological surveys of the site. These essential reports are important for the restoration as well as the interpretation of the site, specifically those used as education centers or museums. As mentioned before, many of these lighthouses do not have proper utilities and many owners, especially at offshore and remote lighthouses, desire to install self-sustaining water treatment systems and electricity sources, such as
wind or solar systems. Other projects seemed more complex such as seismic retrofitting a lighthouse in California and preparing for repatriation of its Fresnel lens. Future restoration projects also included new interactive visitor centers in reconstructed buildings on the site. Private owners tended to discuss their future work towards interior renovation and improvements for sustainable living, such as installing utilities. Private owners did have the same basic concerns as stewardship transfers in general upkeep and repairing elements on the lighthouse.

Owners have been able to achieve many of their goals but the obligations they assumed continue with no foreseeable end. The lighthouses have generally improved through however, through the program, some just faster than others.
CHAPTER SEVEN
RECOMMENDATIONS AND CONCLUSION

Both Congress and lighthouse enthusiasts recognized during the 1990s that if our nation’s lighthouses were to be saved, aggressive action needed to be taken. Earlier legislation dating back to 1906 and the eventual passage of the *National Historic Preservation Act of 1966* set precedent for the *National Historic Lighthouse Preservation Act of 2000*. The NHLPA was passed by Congress to set guidelines for the transfer of ownership of these unique structures for their ultimate protection and preservation. Over one hundred and twenty lighthouses have been transferred through the program since its passage. Survey data, and photographs provided by owners, revealed that lighthouse conditions have improved over the course of this program. Problems still exist and questions remain as to what more should be done to guarantee the future preservation of light stations across the country.

In evaluating the questionnaire data received, drawing conclusions, and making recommendations, a breakdown by ownership entity was deemed the most relevant. Ownership groups include the federal government, local/state governments, nonprofits and private entities. Two factors, access and funding, played a large part in determining if the ownership entity was successful in their preservation efforts. Often these factors are interrelated because access often relies on funding. Properties with restricted access often have increased transportation costs (i.e. boats or even helicopters) to/from the lighthouse.
This in turn causes an increase in construction costs, when transporting supplies, equipment and crews to remote areas. Therefore, more funding is required for less accessible lighthouse properties. Also, if proper access does not exist upon transfer of title, owners must spend funds on docks or boat landings. Funds expended to acquire access could have otherwise gone to restoration costs of the structure.

Federal owners (generally falling under the auspices of the Department of the Interior) appear to be the least successful ownership group within the program. This is largely due to their lack of funding, since federal agencies are dependent on the funding granted by Congress. According to a recent *U.S. News & World Report* article, funding appropriated to the National Park Service has been cut 15% in the past 15 years.240 The Department of the Interior is often one of the first federal agencies whose funding is cut from the national budget, as can be seen by recent developments with the current administration. In a recent *Washington Post* article, the Interior Department’s budget could be slashed by 12% or nearly $2 billion according to a proposed spending plan from the White House.241 Even prior to the recently announced budget cuts, a federal owner states, “[National Park Service] accepted ownership of the lighthouse because of the mission our agency is to preserve historic properties, but we are underfunded, and it is among many other properties nationwide competing for funds.”242 This is a consistent concern for many

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other federal owners, based on survey responses. As can be seen based on the conditions reported by federal owners, conditions of lighthouses saw little to no improvement in the federal ownership. In fact, no federal owner had a major restoration project completed so far. If the proposed spending plan, or even a modified version is eventually approved by Congress, the National Park Service could experience major funding cutbacks, that might affect lighthouse preservation projects.

However, there is an exception within the federal ownership. Although not represented in the survey, the Rock of Ages Light in Michigan is currently owned by the National Park Service but is primarily maintained by a nonprofit group called the Rock of Ages Lighthouse Preservation Society. This hybrid partnership between two different ownership groups appears to work very well as evidenced in the final reports prepared by the nonprofit on the completion of their lighthouse work. National Park Service Rangers help transport volunteers from the nonprofit to the lighthouse to clear debris, replace failing bolts, and other tasks. The trips occur once a year, over the course of several days. The work is slow but there is progress in maintaining the structure.243

Local/state governments tend to work well, but often are even more productive when also connected to a nonprofit. This ownership type is also successful when the community is fully invested in the lighthouse project. One of the weaknesses that can exist under state ownership is that lighthouses are often not the only property that the local/state government owner manages. They often own multiple lighthouses and other properties and this can

cause less diligence over ongoing projects when staff is limited. Local communities have been successful in gathering together to raise funds for the lighthouse. For example, Gay Head Light in Martha’s Vineyard raised millions of dollars to move the lighthouse away from the edge of the cliff, saving one of the most endangered sites in the United States.244

Private owners have the most freedom among ownership types. Although restricted by the Secretary of Interior’s Standards for Rehabilitation, they are able to modify the lighthouse into their private residence. They can also generate commercial profit with no restrictions, which is in direct contrast to stewardship transfers who must initially receive approval from the Secretary of Interior for all commercial activity. In most cases, it appears that private owners are more discreet in how they rehabilitate their tower. Once it is sold by the GSA, it is considered private property and in many cases there is little information available about the present conditions of the lighthouses and the restoration projects in process, if any. Prime examples are two lighthouses owned by private owners, which are currently on the Lighthouse Digest Doomsday List. One is the Sharp’s Island Light in Maryland, an offshore ‘sparkplug’ lighthouse, damaged by ice floes, causing it to lean at a 15 degree angle. Little is known about the rehabilitation efforts of this precarious lighthouse. Romer Shoal Lighthouse, another offshore ‘sparkplug’ lighthouse, is also listed on the Doomsday List. Setbacks, such as Hurricane Sandy, have caused delays in the rehabilitation by the private owner.

On the other hand, however, several private lighthouse owners are very proud of

what they have accomplished and are very open about their progress, setting up websites with photographs of their work. The transformations can range from simple clean-up to complete overhauls of the structure’s interior. Although the lighthouses are now private property and the private owners have more freedom to do what they want, they still must comply with the Secretary of Interior’s standards, which can be a nuisance to some owners, based on survey responses. It is interesting that the private owners do not have to complete a lengthy application or provide a detailed preservation plan as the other ownership entities are required to do. The private owners only need a desire to own a lighthouse and submit a bid.

Nonprofits appear to be the strongest ownership entity based on the improved conditions and large restoration projects nonprofits invest in to preserve the history integrity. Also, nonprofits’ connection with other ownership structures provides for a strong hybrid ownership. The nonprofits bring community members and preservationists together to achieve a specific goal. When Congress passed the NHLPA, it was the original hope that the act would primarily benefit nonprofit owners. Nonetheless, there has been a decline in stewardship transfers in the last few years, with a corresponding increase of private ownerships since 2010. However, nonprofits seem to be a constant through the program and seem to dominate and succeed all ownership structures. Many federal, state, and local government entities have partnered with nonprofits to complete their preservation work. Several private owners have even established nonprofits in order to acquire more lighthouses through a stewardship transfer in order to rehabilitate them. In the few cases
where lighthouses did not see improved conditions in the nonprofit category, the lighthouses had just been acquired and the restoration work had only just begun. Many of the nonprofit-owned lighthouses are turned into museums to fulfill the educational and public access requirement by the National Park Service upon transfer. Unfortunately, it is not feasible for all lighthouse to be historic house museums. The logistics for some lighthouses are obviously too difficult to make public access possible. This is where the private owners have stepped in and taken ownership and responsibility for these remote access lighthouses.

After completing the research and analyzing the owner survey results, several recommendations can be made to the National Park Service and General Services Administration. This includes updating the current list of light stations within the National Historic Lighthouse Preservation Act program. It was noted that several lighthouses were not listed in the 2015 NHLPA report including several in Michigan (Waugoshance Lighthouse, South Haven Pierhead, Middle Island Lighthouse, and St. Joseph’s Outer and Inner Lights). Several databases indicate that these lighthouses have been transferred from the GSA after the act was passed. It is probable that the lighthouses were transferred through the program and just never listed.

Based on the overall findings, nonprofit and hybrid ownership were the strongest ownerships within the program. Therefore, priority should be given to nonprofits or hybrid ownerships with extensive preservation plans. One of the weaknesses in the program is the auction. Although originally thought as a last resort, the public sale is becoming the primary option in the program. Besides the covenants and easements within the deed,
private owners are not held accountable like stewardship transfers for their preservation efforts. Instead, the outcome of lighthouses under private ownership is relatively unknown.

When the Congressional Budget Office (CBO) completed their cost estimate of the NHLPA, they stated in their report, “it is unlikely the government would sell a lighthouse under S.234, ...as opposed to transferring it a no cost, CBO estimated that enacting the bill would not have any significant impact on direct spending.” However, forty-six lighthouses have been sold through a public action and have resulted in funds. According to the report, those funds are made available to the National Maritime Heritage Grant Program or the U.S. Coast Guard. Instead, these funds could be utilized to establish an endowment or revolving fund to preserve historic lighthouses within the program or the U.S. Coast Guard. Funding is one of the major challenges owners face and this could be one of the solutions to this problem.

Perhaps an increase in publicity and creative marketing strategies about the availability and rewards in owning a lighthouse could attract potential local stewardship owners. Regional newspaper articles may generate community interest. This was done early on in the program but appears to have dwindled with the passage of time. With the Maine Lights Program, the vision was related to local communities taking on the responsibility of lighthouses and the program proved to be very successful. The increase in publicity about the rewards of lighthouse ownership could also generate interest by private owners having the financial resources who might see this as an attractive investment opportunity.

It is also important to focus on the lighthouses which have not been transferred but are potentially eligible for transfer. Pending issues which may be delaying ownership transfer should be resolved through joint cooperation of local organizations working with associated federal agencies or state governments. National Historic Lighthouse Preservation Act Highlights Report should continue to list potential lighthouses (indicating where it is in the process and include reasons for its lack of transfer). It might be helpful for the U.S. Coast Guard to release an updated list of lighthouses still owned by them and which ones are considered eligible for transfer. No such listing was located as a result of this research.

Another area of concern was the need to exchange ideas among the lighthouse owners. One owner requested more support after the transfer from the National Park Service and General Services Administration, to assist in unforeseen legal issues associated with the site. The owner also writes, “There is no support group of lighthouse owners, either to share technical expertise and experiences.” In the past, St. Augustine Light in Florida has hosted seminars for lighthouse owners on how to apply for lighthouses and other related topics. Perhaps, a program similar to this could be jumpstarted by the National Park Service and then further administered by a national lighthouse organization. Since many lighthouses are located all across the country, it may be easier to set up an online forum, where lighthouse owners can ask questions, and other owners can respond and comment. It may be helpful to create webinars for funding sources, grant writing, and establishing proper access, especially to remote lighthouses. These are all challenges current owners are

facing. For those owners who are currently struggling with ownership issues, it would be beneficial for an avenue of discussion about the challenges they face. An exchange of ideas and new perspectives from successful owners in the program could provide solutions to the day-to-day problems that arise. Of course, many of these same topics have been discussed in past conferences, including the 2016 Great Lakes Conference: Lighthouse Organization Excellence through Resilience and Change. Based on survey responses, owners are willing and open to share their experience with others but better mechanisms for the exchange of information is warranted.

Figure 7.1 - Runners dressed in lighthouse costumes at Cooper River Bridge Run, Charleston, South Carolina. In order to raise awareness of lighthouse preservation, runners dressed as Charleston Light and Morris Island Lighthouse to raise awareness of their preservation efforts (Photograph by author).
One important factor that needs to be addressed is the pioneers of the lighthouse preservation movement of the 1990s are “maturing” and soon will not be able to lead the preservation efforts. The next generation, a new set of lighthouse keepers, needs to step up to the plate and take on the responsibility that the previous generation has so diligently begun. One important consideration is that organizations who own lighthouses should attract younger community members to get involved so that the work of their predecessors can continue forward. Alex Dias, a young lighthouse preservationist in his twenties, featured in the Wandergroove film series “The Last Lightkeepers,” addressed that there is concern for his generation to take over. He says, “our generation should take some pride to preserve” these lighthouses.\textsuperscript{247} Acquiring community involvement is key when trying to raise funds for lighthouse projects. Social gatherings, whether they be annual barbeques or even a local 5K Run for the lighthouse, should be considered in attracting interest from community members, young and old. It’s amazing what can be accomplished once a source of pride and homegrown ownership is established.

One concerning issue discovered in the study was the possible reversion of lighthouses back to the federal government if the original transfer was not successful. In February 2016, the GSA announced that Hooper Island Lighthouse was reverted back to the federal government from the U.S. Lighthouse Society. Henry Gonzalez, manager of the lighthouse, cited the reasoning was primarily funding and lack of interest. He stated, “We had sufficient funding for the first five years of ownership, but then the problem became

fundraising as well as attracting sufficient volunteers to make the long trip out there and to help manage the project.” He further explained that currently the lighthouse needs several structural repairs, as well as removing exterior coatings and replacing them with long-term protective paints. He also says the lighthouse needs a better dock to allow people to access it in all weather conditions. The GSA has released a Notice of Availability for Hooper Island Lighthouse for stewards interested in a no cost transfer. It is the hope that this will not be the case for other lighthouses in the program.

While this study focused on lighthouses, the results of the research can also be applied to a broader base: ownership types of all historic properties. All four types of ownership are represented in all historic properties, not just lighthouse properties. The trends observed in this particular study can address the positives and negatives of each ownership type and hopefully be used in evaluating other preservation projects across the board. In addition, legislation similar to the NHLPA, which protected just lighthouses may be useful in protecting other specific building types, such as industrial buildings or banks, in the future.

While it is not realistic to think that all lighthouses can be saved, many still have the potential for rehabilitation and preservation. In The Little Red Lighthouse and the Great Grey Bridge, the little red lighthouse (Jeffrey Hook’s Light in New York) worries about his future since he became obsolete due to the new lights from the nearby George Washington Bridge. He says, “Perhaps they will give me up. Perhaps they will tear me down. Perhaps
they will forget to turn my light on!" Although merely a young child’s storybook, it is the hope that this fictional plea will not turn into a reality for the many lighthouses across the nation. *The National Historic Lighthouse Preservation Act of 2000* did help to solve many of the federal government’s concerns about lighthouses in its time and was successful in saving many of them. There is, however, much more work to be done if these historic iconic structures are to be saved for future generations to admire and enjoy.

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Appendix A:
List of Lighthouses in the Maine Lights Program (1996)

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Lighthouse</th>
<th>Owner</th>
<th>Type of Owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Burnt Island Light</td>
<td>Maine Department of Marine Resources</td>
<td>State/Local</td>
</tr>
<tr>
<td>2</td>
<td>Rockland Harbor Breakwater Light</td>
<td>City of Rockland</td>
<td>State/Local</td>
</tr>
<tr>
<td>3</td>
<td>Monhegan Island Light</td>
<td>Monhegan Historical and Cultural Museum Association</td>
<td>Nonprofit</td>
</tr>
<tr>
<td>4</td>
<td>Eagle Island Light</td>
<td>Eagle Light Caretakers</td>
<td>Nonprofit</td>
</tr>
<tr>
<td>5</td>
<td>Curtis Island Light</td>
<td>Town of Camden</td>
<td>State/Local</td>
</tr>
<tr>
<td>6</td>
<td>Moose Peak Light*</td>
<td>Private Owner</td>
<td>Private Owner</td>
</tr>
<tr>
<td>7</td>
<td>Great Duck Island Light</td>
<td>The College of the Atlantic</td>
<td>School</td>
</tr>
<tr>
<td>8</td>
<td>Goose Rocks Light*</td>
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<td>Wood Island Light**</td>
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<td>Deer Island Thorofare (Mark Island) Light</td>
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*The lighthouse was transferred later through the National Historic Lighthouse Preservation Act of 2000.
**The U.S. Coast Guard continues to own this lighthouse.

Note: This compiled list contains all lighthouses identified in the Coast Guard Reauthorization Act of 1996. However, only twenty eight lighthouses were transferred through this program.
# Appendix B:
## List of Lighthouses in the
### National Historic Lighthouse Preservation Act program

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Lighthouse</th>
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<th>Type of Owner</th>
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<td>2007</td>
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<tr>
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<td>102</td>
<td>Conneaut Harbor West Breakwater Light</td>
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<td>2011</td>
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<td>103</td>
<td>Fairport Harbor West Breakwater Light</td>
<td>Ohio</td>
<td>2011</td>
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<td>Toledo Harbor Lighthouse</td>
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<td>105</td>
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<td>Puerto Rico</td>
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<td>Local/State</td>
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<td>2004</td>
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<td>Private</td>
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<td>109</td>
<td>Charleston Light</td>
<td>South Carolina</td>
<td>2008</td>
<td>Federal</td>
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<td>110</td>
<td>Newport News Middle Ground Light</td>
<td>Virginia</td>
<td>2005</td>
<td>Private</td>
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<td>111</td>
<td>Smith Point Lighthouse</td>
<td>Virginia</td>
<td>2005</td>
<td>Private</td>
</tr>
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<td>Thimble Shoal Lighthouse</td>
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<td>2005</td>
<td>Private</td>
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<td>Wolf Trap Lighthouse</td>
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<td>2006</td>
<td>Private</td>
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<td>114</td>
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<td>Washington</td>
<td>2004</td>
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<tr>
<td>115</td>
<td>West Point Light</td>
<td>Washington</td>
<td>2005</td>
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<td>116</td>
<td>Kenosha North Pierhead Light</td>
<td>Wisconsin</td>
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<td>Private</td>
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<td>Kewaunee Light</td>
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<td>2011</td>
<td>Local/State</td>
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<td>Manitowoc Breakwater Light</td>
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<td>Milwaukee Breakwater Light</td>
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<td>120</td>
<td>Sturgeon Bay North Pierhead Light</td>
<td>Wisconsin</td>
<td>2014</td>
<td>Private</td>
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</tbody>
</table>
Appendix C:
National Historic Lighthouse Preservation Act
Owner Survey

National Historic Lighthouse Preservation Act

General Information

1. What is the name of the lighthouse?

2. Who is the official owner of the property?

3. Who manages the property?

4. When was the light station property conveyed to you?

Next
National Historic Lighthouse Preservation Act

Ownership

5. What type of owner do you consider yourself?
   - Federal Government Agency
   - State/Local Government
   - Non-profit organization
   - Private Owner

6. How was the ownership transferred to you?
   - Stewardship Transfer
   - Public Sale

7. What was your experience during the initial application and transfer process?
   - Excellent
   - Good
   - Fair
   - Poor

   Comments, if any.

8. What is the intended use of the property? (Check all that apply)
   - Education/Museum
   - Private Residence
   - Bed and Breakfast
   - Other (please specify)

9. What have been the challenges and rewards during your ownership?
National Historic Lighthouse Preservation Act

Lighthouse Information

10. When was the current tower built?

11. What are the primary building materials of the lighthouse? (Check all that apply)

- Wood
- Brick
- Cast Iron
- Steel
- Concrete
- Other (please specify)

12. Does your lighthouse have an original Fresnel lens?

- Yes
- No

If yes, what order is it? If no, what is the light source?
National Historic Lighthouse Preservation Act
Site, Location, and Accessibility

13. What other buildings are associated with the site (besides the lighthouse tower)? (Check all that apply)
   - ☐ Keeper’s Quarters
   - ☐ Fog Signal Building
   - ☐ Oil House
   - ☐ Storage
   - ☐ Boathouse
   - ☐ Other (please specify)

14. Is the lighthouse in its original location?
   - ☐ Yes
   - ☐ No
   
   If no, please explain.

15. What is your primary mode of transportation to the property? (Check all that apply)
   - ☐ Car
   - ☐ Boat
   - ☐ Plane
   - ☐ Other (please specify)

16. How far is the lighthouse from the nearest local community? (in miles)

17. Approximately, how many visitors visit the lighthouse each year?
National Historic Lighthouse Preservation Act

Conditions

18. What was the general condition of the lighthouse and other buildings upon transfer of ownership?
   - Excellent
   - Good
   - Fair
   - Poor

19. What kind of conditions were found upon transfer of ownership? Were any detrimental to the structure of the lighthouse?

20. Have the conditions improved since transfer of ownership?
   - Yes
   - No
   Comments?

21. What are the current conditions of the lighthouse?
   - Excellent
   - Good
   - Fair
   - Poor

22. Have any natural disasters affected the state of your lighthouse either before or during your ownership period?
   - Yes
   - No
   If yes, please list them including year and damages.
23. Are you aware of any restoration projects done prior to transfer of ownership?
   - Yes
   - No
   If yes, please list them including completed projects, year, and costs.

24. During your ownership, have you done any major restoration projects?
   - Yes
   - No
   If yes, please list them including projects completed, year, and costs.

25. During your ownership, have you made any modern improvements/modifications to the lighthouse?
   - Yes
   - No
   If yes, please explain.
### National Historic Lighthouse Preservation Act

**Finances and Funding**

**26.** What is your main source of funding for maintaining the lighthouse? (Please rank them: 1 = highest, 4 = lowest)

<table>
<thead>
<tr>
<th>Source</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>N/A</th>
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</thead>
<tbody>
<tr>
<td>Grants</td>
<td></td>
<td></td>
<td>o</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donations</td>
<td>o</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Entry Fees</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
<td></td>
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<tr>
<td>Private Income</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td>o</td>
<td></td>
</tr>
</tbody>
</table>

Other (please specify):

**27.** What are your approximate yearly maintenance costs (not including major restoration projects)?

- o $0 - $25,000
- o $25,001 - $50,000
- o $50,001 - $100,000
- o $100,001 - $250,000
- o Over $250,000

**28.** Is your budget sufficient to cover maintenance costs?

- o Yes
- o No

Comments:
What are some of the anticipated expenses that you might face in the next five years?

If you had an extra $50,000 (hypothetically) to spend on your property, what would you spend it on?
National Historic Lighthouse Preservation Act

Contact Information

Please enter the name of recorder and contact information related to lighthouse.

Name
Address
City/Town
State/Province
ZIP/Postal Code
Email Address
Phone Number

Thank you for taking this survey. It will be an important aspect to my thesis as I move forward. Please do not forget to send overall pictures, historic structure reports, and condition assessments to my email address (jmeads@clemson.edu). Good Luck with all of your preservation efforts!
## Appendix D: Survey Graphs and Data

### Q1-3: What is the name of the lighthouse? Owner? Manager?

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Lighthouse</th>
<th>State</th>
<th>Owner</th>
<th>Manager</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Cape Decision Light Station</td>
<td>Alaska</td>
<td>Cape Decision Lighthouse Society</td>
<td>Cape Decision Lighthouse Society</td>
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<tr>
<td>2</td>
<td>Sentinel Island Light</td>
<td>Alaska</td>
<td>Gastineau Channel Historical Society</td>
<td>Gastineau Channel Historical Society</td>
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<tr>
<td>3</td>
<td>Point Pinos Light Station</td>
<td>California</td>
<td>City of Pacific Grove, CA</td>
<td>The City and the Heritage Society of Pacific Grove</td>
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<tr>
<td>4</td>
<td>Point Sur Light</td>
<td>California</td>
<td>California State Parks</td>
<td>CA State Parks and the Central Coast Lighthouse Keepers</td>
</tr>
<tr>
<td>7</td>
<td>Brandywine Shoal</td>
<td>Delaware</td>
<td>Brandywine Shoal Lighthouse Friends</td>
<td>Brandywine Shoal Lighthouse Friends</td>
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<tr>
<td>8</td>
<td>Fowey Rocks Lighthouse</td>
<td>Florida</td>
<td>National Park Service - Biscayne National Park</td>
<td>National Park Service - Biscayne National Park</td>
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<tr>
<td>10</td>
<td>St. Simon Island Light</td>
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<td>Coastal Georgia Historical Society</td>
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<tr>
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<td>Tybee Island Historical Society</td>
<td>Tybee Island Historical Society</td>
</tr>
<tr>
<td>12</td>
<td>Halfway Rock Light Station</td>
<td>Maine</td>
<td>Private Owner*</td>
<td>Private Owner</td>
</tr>
<tr>
<td>13</td>
<td>Moose Peak Light</td>
<td>Maine</td>
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</tr>
<tr>
<td>14</td>
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<td>Friends of Portsmouth Harbor Lighthouses</td>
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<td>Baltimore Lighthouse</td>
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<td>U.S. Lighthouse Society</td>
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<td>Thomas Point Shoal Light</td>
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<td>City of Annapolis</td>
<td>U.S. Lighthouse Society</td>
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<tr>
<td>19</td>
<td>Turkey Point Light Station</td>
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<td>Maryland Department of Resources</td>
<td>Elk Neck State Park</td>
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<td>Edgartown Lighthouse</td>
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<tr>
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<td>Graves Light and Fog Signal</td>
<td>Massachusetts</td>
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<td>Private Owner</td>
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<tr>
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<td>26</td>
<td>Charlevoix South Pierhead Light</td>
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<td>Charlevoix Historical Society</td>
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<td>28</td>
<td>Fort Gratiot Light Station</td>
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<td>Grand Haven Lighthouse</td>
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<td>Muskegon South Pierhead Lighthouse</td>
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Q1-3 : What is the name of the lighthouse? Owner? Manager?

<table>
<thead>
<tr>
<th>No.</th>
<th>Name of Lighthouse</th>
<th>State</th>
<th>Owner</th>
<th>Manager</th>
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<td>35</td>
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<td>Oswego West Pierhead Lighthouse</td>
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<td>Louisiana</td>
<td>Town of Madisonville, LA</td>
<td>Town of Madisonville, LA and Lake Pontchartrain Basin Maritime Museum</td>
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Response Rate of Survey (Based on Owner)

<table>
<thead>
<tr>
<th>Type</th>
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<td>Federal</td>
<td>37%</td>
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<tr>
<td>Local/State</td>
<td>64%</td>
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<tr>
<td>Nonprofit</td>
<td>60%</td>
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<tr>
<td>Private</td>
<td>15%</td>
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</table>

*Table D.1- Response Rate for NHLPA Owner Survey: As can be seen in the chart, a 25% response rate was achieved in three of the four categories. Private owners were more difficult to get a hold of due to lack of contact information.*
Q5: What type of owner do you consider yourself?

Table D.2 - Type of Ownership. Within the NHLPA Program, there are four different types of ownerships: federal agency, local/state government, nonprofit organization, and private owner. Each owner is responsible for the preservation and maintenance upkeep of their station.

Q6: How was the ownership transferred to you?

Table D.3 - Type of Transfer. There are two different types of transfers within the program. First, there is a no-cost stewardship transfer, where federal agencies, local/state governments, and nonprofit organizations submit applications to the National Park Service for review. If no suitable applicant is chosen, the lighthouse is offered up at an auction run by General Services Administration.
Q4: When was the light station property conveyed to you?

Table D.4 - Year of Transfer. Since 2002, lighthouses have been transferred through the program. The data displayed above is representative of when lighthouses were conveyed through this program.

Q10: When was the current tower built?

Table D.5 - Year of Construction. Most lighthouses in this program were constructed during the late nineteenth and early twentieth century. This is similar to the trend of lighthouses all across the United States.
Q7: What was the experience during the initial application process and transfer process?

Table D.6 - Rating of Application Process. Owners responded to the question, “What was the experience during the initial application process and transfer process?” The responses were generally a positive experience.

Selected Comments:

“Very involved and lengthy. We actually led a series of seminars to teach other lighthouse groups the process.” - Nonprofit

“Our application was approved almost immediately in 2005 by the Secretary of Interior, but legal issues with the State of Michigan over the lake bottom on which the lighthouse rests continued for 5 years...eventually negotiated a non-burdensome use agreement to allow the lighthouses to continue to rest on the Lake Huron bottomlands.” - Nonprofit

“My auction was a 2 year process because several auction ‘winners’ (3 actually) defaulted after being awarded the lighthouse. The GSA then had to change the process to provide for the second place ‘finisher’ to be awarded the lighthouse if the winner defaults.” - Private

“The National Park Service was good to work with, but it was a very long process.” - Local/State Government

“This was a government property transfer between two agencies. NHLPA was referenced and GSA conducted the transfer, but it was a simplified experience.” - Federal Agency
Q8: What is the intended use of the property?
(Check all that apply)

Selected Comments:

“Tourist attraction, we don’t have a keepers quarters for a museum, only the towers.” - Nonprofit

“Just a restored lighthouse for public benefit...” - Private

“Great Lakes climate research.” - Nonprofit

“We are currently restoring the keepers house which will house summer keepers in 2018” - Nonprofit

“People rent the lighthouse for special events.” - Private

“Iconic structure that is a part of local heritage.” State/Local Government

“Overnight lodging.” - Nonprofit

“Open for community events and an annual tour.” - Private

Table D.7 - Intended Use of Property. Owners responded to the question, “What is the intended use of the property (Check all that apply)?” The majority of owners responded with education/museum which correlates with percentage of stewardship transfers. Other answers include private residence and preservation.
Q9 : What have been the challenges and the rewards during your ownership?

Challenges
Selected Comments:

“It is an offshore lighthouse in a very remote area of the Chesapeake Bay. It takes our volunteers 2 to 3 hours to get to the dock and then another 45 minutes on boat to the lighthouse. Currents are very swift there and docking long enough to get our volunteer preservationists on and off the lighthouse is hit or miss.” - Nonprofit

“The added logistics and uncertainties of being an offshore lighthouse. We need to have a reliable boat and captain...and we have to rely on the weather (which cooperates most of the time)...Also, being offshore, the lighthouse is subject to all of the weather and forces of the Chesapeake Bay, which means we have to do routine maintenance and cleanups at the start of every season to repair damage done during the winter.” - Nonprofit

“Challenges are raising funds and grants that require matches, some more than others. There is no available seed money, which would have given us a better start.” - Nonprofit

“Access is our biggest challenge. To get to the property, we have a landing craft that disembarks passengers and materials on a rocky beach. The property is only accessible during the summer season - otherwise it is too rough and dangerous to land.” - Nonprofit

“Restoring 40 years of utter neglect by the USCG.” - Private

“I do feel somewhat limited in my ability to provide care for the lighthouse by the limitations of the historic preservation registry laws and the fact that is a functioning aid to navigation with deeded Coast Guard Access.” - Private

“It would have been helpful to receive some directions from the NPS as to steps to take (get your local zoning permit, for example) upon taking ownership of a lighthouse. Also, the NPS, USCG, GSA, etc. are not supportive of their stewards...There is no support group of lighthouse owners, either, to share technical expertise and experiences.” - Nonprofit

“Funding for the restoration of the lighthouse with the current economic environment (i.e. Grants, Fundraising). Safe access to the structure in the current configuration (i.e. no dock).” - Local/State Government

“The light is unsafe, mostly inaccessible, and closed to the public. NPS accepted ownership of the lighthouse because of the mission of our agency to preserve historic properties, but we are underfunded and it is among many other properties nationwide competing for funds. There has been little advancement in stabilization of the lighthouse.” - Federal Agency

“...The other issue is funding. A large part of our plan was to do local funding from lighthouse enthusiasts and it looks like the enthusiasm is dwindling for lighthouses based on our lighthouse cruise attendance.” - Nonprofit

“The challenges evolve around funding and minimizing vandalism.” - Local/State Government

“Some of the challenges have been access, power, ventilation, post superstorm Sandy repairs, interior and exterior painting, and shoring up on leaking.” - Nonprofit
Q9: What have been the challenges and the rewards during your ownership?

Challenges (cont’d)

Selected Comments:

“Maintenance is very costly. Painting the exterior costs tens of thousands of dollars. The interior of the lighthouse does not meet OSHA health and safety standards and so it is not open to ANYONE, except for occasions of necessary maintenance of the light, etc.. Park employees, island residents, and park visitors wish it could be opened to the public, but the rehab would be far too costly. Criticisms from those wishing to make the lighthouse open to the public are not uncommon.” - Federal Agency

“Our application was approved almost immediately in 2005 by the Secretary of the Interior, but legal issues with the State of Michigan over the lake bottom on which the lighthouse rests continued for 5 years. Fortunately, DRLPS Director...took a firm stand on behalf of all Michigan off shore lighthouses and after 5 years of State ineptitude eventually negotiated a non-burdensome use agreement to allow the lighthouse to continue to rest on the Lake Huron bottomlands.” - Nonprofit

“The lighthouse is on property that we do not own, so access onto the property has been challenging, despite official right of way.” - Federal Agency

“Major challenge has been raising the money to complete restoration of the 8 buildings that comprise the light station. The nonprofit has been the leader on this.” - Local/State Government

“Extremely difficult getting to/from station. Very expensive and difficult to get contractors to do work there.” - Private

“Access is a challenge as the lighthouse is on an island with no real landing beach or place to keep a boat. Our only options are to be dropped off by boat or fly out by helicopter so access is expensive.” - Nonprofit

“Our main challenge has been the lengthy process involved in procuring funding and carrying out the projects, for a variety of reasons.” - Local/State Government

“Whaleback Lighthouse is on a waveswept, offshore ledge, with no secure landing place for a boat. This has made access and preservation a daunting challenge...the establishment of a docking system is essential to facilitate complete restoration and public access.” - Nonprofit

“Funding the restoration/preservation, compliance with all the (necessary) Government regulations, and staffing with volunteers.” - Local/State Government

“Funding the on-going maintenance. Potential owners should not underestimate the costs of maintaining historic fabric. Many have a fund drive to raise the initial monies to restore the structure without realizing that theses costs recur. Historic lighthouses will need corrosion abatement and paint every 5-6 years minimum and this work can cost in the hundreds of thousands of dollars each time it is done, not to mention periodic monitoring by a structural engineer/restoration architect, etc.” - Nonprofit

“Significant cost of restoration - difficult to raise funds to complete needed repairs that are historically accurate/compliant with HSR.” - Local/State Government

“Difficulty of access. REALLY hard dirty work.” - Private
Q9: What have been the challenges and the rewards during your ownership?

Rewards

Selected Comments:

“We have been working on the lighthouse for 12 years now and have seen the results of the restoration of most of the interior and the preservation of the exterior. Also, the feedback we get from the tours we do, as well as VIP tours of former lighthouse keepers or their descendants.” - Nonprofit

“Rewards are seeing the people enjoy the lighthouse and the kids who are experiencing it for the first time and loving it.” - Nonprofit

“Rewards are seeing the response of people who tour and spend weekends and longer as volunteer keepers of DeTour Reef Light.” - Nonprofit

“Privately, I have made some great relationships through my participation. As with most historic preservation efforts, the returns are intangible but real.” - Private

“Generated community interest in preserving the structure. Used as an educational tool for elementary students.” - Local/State Government

“Positive public support.” - Nonprofit

“It has been wonderful to have full access to the lighthouse for school groups and education on our own watch.” - Local/State Government

“Visitors and friends reactions to the rehabilitation.” - Private

“Educating the community about the process of restoration and renovation.” - Local/State Government

“The rewards are many. We are honored to be the stewards of this site, continuing to explore ways to expand lighthouse education and accessibility to the public beyond our daily ticket sales and maintain this icon for our community.” - Nonprofit

“Iconic structure for the island community saved. Revenue to the town for lighthouse tours. Important chess piece for overall cultural arts district involving the Gay Head Cliffs, shops, tribal museum, beaches and picnic grounds.” - Local/State Government

“The rewards are numerous but the biggest is the pride in restoring an icon of the Northern Chesapeake Bay (and drinking rum drinks while watching sunset on the west side of the light).” - Private

“The greatest reward will be the preservation of an historic structure.” - Nonprofit

“The people of Maunabo feel deep pride knowing that this facility is an architectural heritage that belongs to our people. Observing its majestic structure in commercials, films, magazines and newspapers encourages us to continue our effort in its use and conservation.” - Local/State Government

“The reward is keeping old maritime devices relevant, having one of the oldest lighthouse structures functional and in good condition.” - Local/State Government
Q9 : What have been the challenges and the rewards during your ownership?

Rewards (cont’d)

Selected Comments:

“Rewards are listening to the intergenerational chit-chat regarding our 1950’s era keeper’s house. Mostly grandparents to grandchildren.” - Local/State Government

“But it’s a magnificent magical place and we’ve met wonderful people along the way. It’s changed our lives, and changes other’s lives, too.” - Private

“We have made slow but steady progress in restoration activities which is rewarding to see the place take shape.” - Nonprofit

“Our relationship with SHPO has been very positive, and we have been able to accomplish what we needed to in order to restore, preserve, and now, recently, repaint the lighthouse. The feedback from the public has been quite positive.” - Local/Private Government

“Visitor appreciation of the work that has been accomplished to date, support of the local citizenry, local foundations and City Council, use of the site for Community based events and citizen use for personal/family events (weddings, picnics) and general community support.” - Local/State Government

“Positive feedback from the large number of visitors and county residents has been the biggest reward.” - Nonprofit

“The reward is associated with preservation of an historic light.” - Local/State Government
Q11: What are the primary building materials of the lighthouse? (Check all that apply)

Table D.8 - *Primary Building Materials*. Responses from owners when asked “What are the primary building materials of the lighthouse? (Check all that apply).” Cast iron and brick had the highest responses, reflective of the height of lighthouse construction during the late nineteenth century and early twentieth century.
Q12: Does your lighthouse have an original Fresnel lens?

![Fresnel lens chart]

Table D.9 - Fresnel lens. Responses from owners when asked “Does your lighthouse have an original Fresnel lens?” The Fresnel lens is an important cultural heritage feature associated with light stations. In the NHLPA program, ten lighthouses are listed as having operational Fresnel lenses in the United States. The U.S. Coast Guard sets out important guidelines that the owners must abide in order to take care of their Fresnel lens.

Q14: Is the lighthouse in its original location?

![Original Location chart]

Table D.10 - Original Location of Lighthouse. Responses from owners when asked “Is the lighthouse in its original location?” Throughout history, lighthouses were rebuilt when encroaching waters undermined the lighthouse. However, today, lighthouses are no longer being rebuilt but rather moved further inland to protect it from shore and cliff erosion. Cape Hatteras Lighthouse in North Carolina and Gay Head Light in Massachusetts have both been successfully moved by the International Chimney Corporation.
Q15: What is the primary mode of transportation to the property? (Check all that apply)

Table D.11 - Primary Mode of Transportation. Responses from owners when asked “What is the primary mode of transportation to the property (Check all that apply)?”

Q16: How far is the lighthouse from the nearest community? (in miles)

Table D.12 - Distance from Nearest Community. Responses from owners when asked “How far is the lighthouse from the nearest community (in miles)?”
Q17: Approximately, how many visitors visit the lighthouse each year?

Table D.13 - Visitors. Owners responded to the question, “Approximately, how many visitors visit the lighthouse each year?” The two ownerships that received the most visitation are nonprofit and state/local governments.
Q18: What was the general condition of the lighthouse and the other buildings upon transfer of ownership?

Table D.14 - General Conditions (Upon Transfer) of Lighthouses. Owners responded to the question, “What was the general condition of the lighthouse and other buildings upon transfer of ownership?” This refers to the conditions found when the lighthouse was transferred to the new owners from the U.S. Coast Guard. The majority of the owners replied with Fair to Poor ratings.
Q21: What are the current conditions of the lighthouse?

Table D.15 - Current Conditions of the Lighthouses. Owners responded to the question, “What are the current conditions of the lighthouse?” The majority of owners responded with Excellent to Good rating, showing lighthouses have improved due to transfer. These conditions were confirmed by photographs, provided by owners.
Q19 : What kind of conditions were found upon transfer of ownership? Were any detrimental to the structure of the lighthouse?

Selected Comments:

“The lantern room door was partly unhinged causing water intrusion. All porthole windows on the 4th level were missing and covered with plexiglas from the inside. Water had entered the top level of the lighthouse for many years before we got there and had made its way down to lower levels. Some of the cast iron interior wall, and ceiling plates were rusted and extensively corroded, causing structural integrity issues in a few area. Porthole windows in the caisson were missing and water had penetrated into the basement over the years.” - Nonprofit

“The lighthouse was unmanned and automated in 1986 and we took possession in 2004. The USCH had maintained it in good condition during those 18 years, and it continues to be an aid to navigation to this date.” - Nonprofit

“The structures were in reasonably good condition but the roofs were leaking which caused interior damage to the plaster walls and wooden floors. Before the property was transferred to Essex Heritage in 2014, the USCG did an extensive site remediation project removing the lead contaminated soil from around the buildings.” - Nonprofit

“Wood crib was in good condition, cranes and windows missing. plaster terrible, roof bad, deck bad, fog horn missing, all mechanicals missing. The structure was sound.” - Nonprofit

“The granite structure is sound as the metal top. Inside was in disrepair and filthy. There is a dilapidated pier attached that is not sound.” - Private

“The lighthouse was in disrepair including collapsed chimney which caused a hole in the roof; collapsed access ladder; crows nest door needed replacement; bulging of masonry façade; wood fascia boards were rotting due to water damage.” - Local/State

“The entire structure is in exceedingly poor condition. It is primarily cast iron construction and all components are rusted.” - Federal Agency

“1/3 of main deck was missing from a ship collision. Not occupied for 50 years. Major rust issues. No electricity or plumbing. Rotting interior floor. Dead birds inside.” - Private

“There are 30 windows 17 are original 13 need replacement, they have been boarded up with steel plates. There is leakage in the rubber gasket in the roof to the lamp room. The general roof needs to be replaced. Fascia needs to be replaced. The siding needs to be replaced. Steel plate walls of the first floor need to be rehabilitated. The doors need to be rehabilitated with replacement of the hardware. The base concrete of the building is in need of maintenance.” - Local/State Government

“Upon acquisition by the City of Oswego, roughly $250,000 had to be allocated for the remediation of hazardous materials. PCBs, bird guano, and asbestos were all removed. Structurally, though, the lighthouse was sound.” - Local/State Government

“The structure was leaky, and the interior was fraught with rust and loose lead paint.” - Nonprofit

“Heavy water infiltration which caused massive rust and deterioration. Mortar joints failed. Dock rusted and rotted. Peeling paint and rotted wood floors.” - Private
Q19: What kind of conditions were found upon transfer of ownership? Were any detrimental to the structure of the lighthouse?

Selected Comments:

“Original windows had been removed and filled in with concrete or covered over with Plexiglas. We have removed all concrete infill and Plexiglas and installed wood authentic divided lite windows to match originals. We have repaired locations of water infiltration that had been unattended by the Coast Guard. The building is structurally sound.” - Nonprofit

“The lighthouse was in good physical and structural condition. Much of the preservation work will involve cosmetic or maintenance upgrades, as well as making safety-related renovations to make the lighthouse safe and accessible to visitors.” - Local/State Government

“Water and ice damage to the base and was used as target practice in WW2. It was a test area for drone planes.” - Nonprofit

“Structurally sound except for the tower which need reinforcement with epoxy based cement. We found some damage that we believe dated back to the 1906 earthquake. The original tower was brick and was replaced/repairs with reinforced concrete. That concrete cracked which in turn required repair. The overall interior, exterior and landscape restoration has been ongoing since 2009 (approx.).” - Local/State Government

“The structure was in need of painting upon conveyance of the property. There are also minor structural issues that need to be corrected.” - Local/State Government

“Brick facade of the tower was crumbling and needed to be replaced with a Save Americas Treasures grant.” - Local/State Government
Table D.16 - Improvement of Conditions. Owners responded to the question, “Have the conditions improved since transfer of ownership?” Generally, the conditions have improved significantly since owners have taken over ownership of these lighthouses.

Selected Comments:

“SAT grant was used to restore the lighthouse. Michigan Lighthouse Assistance grant was used to restore the roofs of the Fog Signal and Equipment Building. Coastal Zone Management grant was use to provide ADA accessible walkways and interpretive panels. Local donations were used to restore exterior and interior of Equipment Building. Park funds were used to construct ADA accessible restrooms in the Fog Signal Building and the Equipment Building.” - Local/State Government

“All structural repairs have been done. Most of the interior has been restored or preserved. Visitor exhibits are constantly being refreshed. The basement is the current project. Replacement of the non-original flooring will be accomplished by refurbishing the original brick floor and repair of any water intrusion damage. The building has recently (July) been painted on the exterior, interior reconditioned (when possible and applicable) interior flooring, replicated kitchen recently completed and the endless list goes on.” - Local/State Government

“We have cleaned up the interior and weatherproofed the structure.” - Nonprofit

“An electrical assessment and structural assessment is scheduled for 2017. HSR is planned for 2017/2018.” - Local/State Government

“It’s in like new condition now.” - Private

“Yes, the spiral staircase is a dream!” - Local/State Government
Q22: Have any natural disasters affected the state of your lighthouse either before or during your ownership period?

Table D.17 - Natural Disasters. Owners responded to the question, “Have any natural disasters affected the state of your lighthouse either before or during your ownership period?” Hurricanes, earthquakes, and large storms can cause serious damage to lighthouses.

Selected Comments:

“Surprisingly, hurricanes have done little damage. The structure is threatened by neglect. The worst thing that ever happened to it was full automation in the early 1970s. At that point, keepers permanently left the structure, and with them regular upkeep” - Federal Agency

“Over and over and over...Storms wipe out everything except tower and boathouse. Probably lost ten docks since 1871, ten or so boats, multiple small buildings.” - Private

“Superstorm Sandy demolished the back door on the first, or kitchen, level, destroyed the wooded first floor, dislodged the granite steps to the front door, flooded the basement, and destroyed the furnace, destroyed the museum’s equipment, including its generator and supplies.” - Nonprofit

“Due to wave action and winters here, we do get ice up to the second floor which causes damage to the paint and roof.” - Nonprofit

“1991 ‘Perfect Storm’ destroyed the lighthouse entry room which was never replaced by the Coast Guard and remains missing today.” - Local/State Government

“Charleston Earthquake of 1886: reportedly cracked the original glass portion of the flash panel, thus converting it to only white flash; we’ve also found damage to the brick in the keeper’s dwelling beneath one of the windows, which restoration experts attributed to earthquake damage.” - Nonprofit
Q23: Are you aware of any restoration projects done prior to transfer of ownership?

Table D.18 - Restoration Projects Prior to Transfer: Owners responded to the question, “Are you aware of any restoration projects prior to transfer of ownership?” Nonprofits were most likely to have restoration work completed prior to the transfer of ownership. Nonprofits often managed the lighthouse property prior to ownership.
Q24: During your ownership, have you done any major restoration projects?

Table D.19 - Major Restoration Projects during Ownership. Owners responded to the question, “During your ownership, have you done any major restoration projects?” Many lighthouses have completed large scale work on their lighthouses since transfer of ownership.
Q25: During your ownership, have you made any modern improvements/modification to the lighthouse?

Selected Comments:

“Complete Kitchen, Bathroom, Shower, Heating, and Air Conditioning & TV.” - Private

“We added an electrical system.” - Private

“Modern electrical and plumbing systems use historic style fixtures.” - Private

“We are trying to keep the lighthouse as close to its original form and have not changed to any modern type.” - Nonprofit

“In 2014, we built replicas of two historic outbuildings and are currently using them for an ADA compliant restroom facility and a gift shop. This includes compliant access walkways and a refinished parking area.” - Local/State Government

“We have not [made any modern improvements, the U.S. Coast Guard has.” - Nonprofit

“Interior lights and electrical outlets were added during the 90’s restoration.” Nonprofit

Table D.20 - Modern Modifications. Owners responded to the question, “During your ownership, have you made any modern improvements/modifications to the lighthouse?” Private owners tended to modify the lighthouse the most, primarily to add amenities for sustainable living.
Q26: What is your main source of funding for maintaining the lighthouse? (Please rank them. 1 = highest, 4 = lowest)

Table D.21 - Funding Sources. Owners were asked the question, “What is your main source of funding for maintaining the lighthouse (Please rank them. 1 = highest, 4 = lowest)?”
Q27: What are your approximate yearly maintenance costs (not including major restoration projects)?

![Bar chart showing approximate yearly maintenance costs]

Table D.22 - *Approximate Yearly Maintenance Costs.* Owners were asked the question, “What are your approximate yearly maintenance costs (not including major restoration projects)?” The majority of the lighthouses cost less than $50,000 per year. Those lighthouses costing more than $50,000 per year contain multiple buildings on the site and have more visitors.
Q28: Is your budget sufficient to cover maintenance costs?

![Pie chart showing 51% Yes and 49% No]

Table D.23 - Sufficient Budget. Owners were asked the question, “Is your budget sufficient to cover maintenance costs?” Private owners said their budget was sufficient for general maintenance costs. The other ownerships were more split in their answers.

Selected Comments:

“We had sufficient funding for the first 5 year of ownership, but then the problem became fundraising as well as attracting sufficient volunteers to make the long trip out there and to help manage the project.” - Nonprofit

“Not required much. The budget for major work (such as rebuilding the pier and improving access) is currently prohibitively high for this private owner.” - Private

“On going grant/donation fund raising is required. Historic preservation dollars are drying up and more competition is experienced as other organizations vie for limited funding.” - Local/State Government

“Budget comes from family only. Estimated yearly budget now is about $10,000/year.” - Private

“No. Major repairs at this facility alone would use up most of my yearly Recreation Passport funding for cultural resources. AHC budget does not allow for any major repairs without DNR funding or grant matches.” - Local/State Government

“Yearly maintenance costs are minimal, but the lighthouse needs a large-scale overhaul to be reopened for public use. Cost estimates of such an overhaul are over $250,000.” - Nonprofit

“Grants are few and far between since the government stop funding Save Americas Treasures. Not many local grants and no state grants.” - Nonprofit
Q29 : What are some of the anticipated expenses that you might face in the next five years?

Selected Comments:

“The USLHS is in the process of voluntarily reverting the lighthouse back to the federal government. We could not continue to maintain and restore the lighthouse...The lighthouse tower and caisson will need a complete exterior removal of coatings, some structural repairs, and coating it with long term protective paints. The lighthouse also needs the addition of a sturdy dock so that volunteers can come and go more freely under various weather conditions.” - Nonprofit

“We will need to do periodic maintenance on the iron and steel base frame, which consists of removing rust, repairing corrosion, removing coatings and recoating all the iron and steel elements above the waterline.” - Nonprofit

“General upkeep.” - Private

“Repairs on the exterior of the keepers houses and in 4-7 years it is likely that the lighthouse tower will need to be repaired and stuccoed again.” - Nonprofit

“We planning on spending $2.5 million on a complete restoration of the light (modeling after DeTour Reef Light. It will have a keeper program and tours).” - Private

“New dock to allow safe access including soil borings and engineering fees. Repairs to exterior facade. Repairs to chimney. Repairs to roof. We plan to secure and repair the outside of the structure before doing our interior work.” - Local/State

“Annual liability insurance, transportation to lighthouse, major improvements such as removal of fog signal building. Currently working with the state historic preservation office to develop a renovation plan. Based on the plan we will pursue funding to implement the plan.” - Nonprofit

“We depend on volunteers for most of our work and keepers to live on the island to provide security and public information. We plan to add a small museum and provide walking trails. Ongoing maintenance, repair, painting, will require funds. We will be installing a solar panel array to provide power, a triple water filtration system to reclaim rain water(only source of drinking water) and a composting toilet so a septic system will not be needed..” - Nonprofit

“Painting (vandalism cover up), exterior concrete work, and other enhancements in anticipation of public touring.” - Local/State Government

“Finishing kitchen and full bathroom, adding to the dock, adding wind /solar systems, converting oil house to sleeping cottage.” - Private

“Some of the challenges have been access, power, ventilation, post superstorm Sandy repairs, interior and exterior painting, and shoring up on leaking.”

“Painting the exterior of the lighthouse to preserve the integrity of the structure as well as be a good neighbor to the local residents and keep up a good aesthetic.” - Federal Agency
Q30: If you had an extra $50,000 (hypothetically) to spend on your property, what would you spend it on?

Selected Comments:

“A third of what I need to do.” - Private

“We will need to do periodic maintenance on the iron and steel base frame, which consists of removing rust, repairing corrosion, removing coatings and recoating all the iron and steel elements above the waterline.” - Nonprofit

“General upkeep.” - Private

“1) Towards $1.6 million for erosion abatement and prevention; 2) Cultural resource and structural assessment report. 3) Video documentation of lighthouse for possible virtual tour of property. 4) Bike/walkway plan for public access taking visitors closer to the lighthouse.”
- Local/State Government

“Use our Great Lakes Conservation Corps to begin basic maintenance and restoration projects including, but not limited to, install basic structural supports, removal of peeling paint, replacement of broken windows, general clean-up, plastering, painting, installation of educational signage (at lighthouse and on the mainland).” - Nonprofit

“50,000 would not do much. We need approximately 6 million for the structure’s rehab. There is very little you can do in an offshore environment with a cast iron lighthouse that does not come with a large price tag. There is an immediate need to remove non-historic and non-sympathetic stainless steel components that were added to the structure by USCG and hasten corrosion of historic structural fabric. This project would cost approximately 250,000.” - Federal Agency

“It would go toward the window restoration (we need an additional $28,000) at present. The nonprofit Friends of the Kewaunee Pierhead Lighthouse are running a sponsor a window for $1,000. It would be an additional $16,000 for the metal roof over asphalt shingles. A historical replica door would be $16,000. $9,000 for the steel plating and $34,000 for the concrete foundation. These are all needs not covered by the initial grant money. We have not begun the inside renovation.” - Nonprofit

“Repair to concrete; removing the bolts from the stairs into the concrete while maintaining the use of stairs; permanent repair to the platform; water and power to the site to facilitate safe visitor access; tree removal.” - Federal

“The lighthouse would soak up $50,000 in a heartbeat.” - Private

“Preparing LH for repatriation of Fresnel Lens and moving the lens.” - Local/State Government

“There is not such thing as ‘extra’ in an ongoing restoration project. But it would probably go toward the building of a replica barn that would actually house an interactive visitor center.” - Local/State Government

“Self sustaining water treatment system, bathrooms and a new dock.” - Private
Appendix E: Maps

Figure E.1 - Map of Chesapeake Bay - NHLPA Lighthouses. (Image from Google Maps)

Key:

- Green: Federal Agency
- Yellow: Local/State Government
- Blue: Nonprofit Organization
- Red: Private Owner
Figure E.2 - Map of North Carolina, South Carolina, and Georgia - NHLPA Lighthouses. (Image from Google Maps)

Key:

- **Green**: Federal Agency
- **Yellow**: Local/State Government
- **Blue**: Nonprofit Organization
- **Red**: Private Owner
Figure E.3 - Map of Florida - NHLPA Lighthouses. (Image from Google Maps)

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Figure E.4 - Map of Massachusetts, Connecticut, and Rhode Island - NHLPA Lighthouses. (Image from Google Maps)

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Figure E.5 - Map of Maine - NHLPA Lighthouses. (Image from Google Maps)

Figure E.6 - Map of New York, New Jersey, Connecticut, Rhode Island - NHLPA Lighthouses. (Image from Google Maps)
Figure E.7 - Map of Michigan and Wisconsin (Lake Michigan and Lake Huron) - NHLPA Lighthouses. (Image from Google Maps)

Key:

Green : Federal Agency
Yellow : Local/State Government
Blue : Nonprofit Organization
Red : Private Owner
Figure E.8 - Map of Michigan and Minnesota (Lake Superior) - NHLPA Lighthouses. (Image from Google Maps)

Figure E.9 - Map of Michigan (Lake Superior) - NHLPA Lighthouses. (Image from Google Maps)
Figure E.10 - Map of New York (Hudson River and Lake Ontario) - NHLPA Lighthouses. (Image from Google Maps)

Figure E.11 - Map of New York and Ohio (Lake Erie) - NHLPA Lighthouses. (Image from Google Maps)
Figure E.12 - Map of West Coast - NHLPA Lighthouses. (Image from Google Maps)
Figure E.13 - Map of Hawaii - NHLPA Lighthouses. (Image from Google Maps)

Figure E.14 - Map of Alaska - NHLPA Lighthouses. (Image from Google Maps)
Figure E.15 - Map of eastern coast of Puerto Rico - NHLPA Lighthouses. (Image from Google Maps)

Key:

- Green : Federal Agency
- Yellow : Local/State Government
- Blue : Nonprofit Organization
- Red : Private Owner
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