

N.C. Wildlife Resources Commission's Report on Lake Mattamuskeet

January 15, 2017

SUBMITTED BY:

THE NORTH CAROLINA WILDLIFE RESOURCES COMMISSION



Lake Mattamuskeet Lodge (Photo by D. Mims)

January 15th, 2017

Honorable Pat McElraft
N.C. House of Representatives
300 N. Salisbury Street, Room 416B
Raleigh, NC 27603-5925

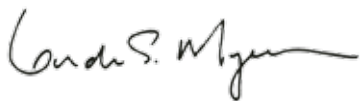
Honorable Brent Jackson
N.C. Senate
16 W. Jones Street, Room 2022
Raleigh, NC 27603-5925

Honorables:

The 2015 General Assembly directed the N.C. Wildlife Resources Commission to undertake advanced planning for the completion of renovations of the Mattamuskeet Lodge in Hyde County. I am submitting this report to the Joint Legislative Oversight Committee on Agriculture and Natural and Economic Resources in fulfillment of the requirements of *Sec. 14.14 of S.L. 2016-94*. As directed in statute, this report by the N.C. Wildlife Resources Commission describes advanced planning for the completion of renovations to the Lodge and opportunities for a public-private partnership for future operation of the Lodge to optimize the sustainability and benefit of the Lodge to the community.

If you have questions or need additional information, please contact me by phone at (919) 707-0151 or via email at gordon.myers@ncwildlife.org.

Respectfully,



Gordon Myers
Executive Director

EXECUTIVE SUMMARY

Located on the Hyde County mainland, Mattamuskeet Lodge (Lodge) is an iconic structure of great historical and cultural significance not only within the state of North Carolina, but also nationally. The Lodge represents one hundred years of history, business, agriculture and coastal identity. Significant funding to preserve the Lodge has been invested to date; however, additional funding is required to complete the restoration of the structure before it is opened to the public. While renovations will require an additional one-time \$7.7 million investment, during the construction period this investment is anticipated to yield a \$9.9 million benefit directly to the local economy. (Dabson, 2016).

In 2008, the N.C. Wildlife Resources Commission engaged North Carolina State University Tourism Extension and representatives from the hospitality industry to assist in developing a business plan for the operation of the Lodge as a state agency-run facility. This business plan indicated that the annual cost to operate the Lodge would exceed income. Although the N.C. Wildlife Resources Commission recognized the need to preserve the Lodge for its hunting heritage, conservation, education and natural and cultural historic merits, the agency also recognized the need to find a solution that could make operation of the Lodge economically sustainable.

Therefore, in order to fully realize the potential economic benefits of the Lodge, a public-private partnership is proposed to create a “hub” model. This model incorporates traditional uses of the building and integrates local and regional businesses. By incorporating these businesses, the revenues generated by the hospitality and service functions are augmented by licensing and marketing services that are shared across all of the participating businesses. The amenities of the Lodge will include 14 simple but refined guest rooms, a farm-and-sea-to-table dining room, and ample common areas for visitors and guests to connect with the rich natural and cultural identity of the region.

The Lodge has long served as a symbol of Hyde County's community and culture. The reopening of the Lodge would restore its cultural significance and serve as a hub connecting the public to the area's natural resources.



Photo by NCWRC

INTRODUCTION

The beautiful and historic Mattamuskeet Lodge is adjacent to Mattamuskeet National Wildlife Refuge in Hyde County, North Carolina. When it was built in 1914, it was the largest pump house in the world. The building was constructed to drain Lake Mattamuskeet, to allow farmers to sow the rich soils below. By 1915, a seven-mile-long canal was excavated from the lake to the sound, and the pump house, now known as Mattamuskeet Lodge, was completed, straddling the new canal. The building comprised a long pump room housing four cross-connected poppet-valve steam engines (each driving enormous cast iron water pumps), and a boiler room housing four huge coal-fired boilers that provided steam to the pump engines. A 120-foot-tall smoke stack provided the exhaust for the coal smoke. To support the massive weight of this structure,



Lake Mattamuskeet (Photo by NCWRC)

645 wood piles were driven through the soft soils to the bedrock 50 feet below the canal. Concrete pile caps then formed the foundation for a network of eight concrete tunnels from 20-foot-deep concrete sumps on the lake side of the building to water outlets in the levee wall at the beginning of the outfall canal leading to the Pamlico Sound. The four pump bodies, reaching 19 feet down into the sumps, had the theoretical capacity to impel the lake water through the tunnels at a combined rate of 1.2 million gallons per minute. Thirty-five tons of coal were consumed each day to run the pumps.

New Holland, the first town to be built in the dry lake bed, included an inn, school, post office, and modern houses with indoor plumbing and electricity. Robust farming operations were conducted in the lake bed. Expert farm managers were employed to utilize the best agricultural practices and the most modern farming equipment available at the time. The rich soil and efficient agricultural methods resulted in record crop yields for many years. Ownership of the project changed hands several times during its fifteen years of operation. As the market for agricultural products collapsed during the Great Depression, the project's owner faced ruin in other investments as well and was forced to sell. After changing ownership three times, the Lodge was sold to the federal government in 1933.

The federal government purchased the site with the intention of restoring the lake and surrounding lands to establish what would become the Mattamuskeet National Wildlife Refuge. To aid in the nation's economic recovery, the site served as a Civilian Conservation Corps (CCC) project from 1933 until 1937. The major achievement of the CCC was the conversion of the building from a pump station into a world-re-

owned hunting lodge. The CCC dismantled the pumps, engines, boilers and pipe systems, which were sold for scrap. They dismantled the other buildings in the lake bed and used the wood to construct floor platforms and frame the interior walls. New window openings were cut into the brick walls and steel windows were installed. The top 20 feet of the smokestack was removed. A steel and glass observation cab was built atop the smokestack, and a 121-step spiral staircase was installed to access the view. In the heart of the renovated interior, a large ballroom and a lounge, complete with a hearth, balcony (leading to the tower) and display cases, were built. On the ground level was a kitchen and a wood-paneled dining room with fireplace. A steel and wood balcony, accessed through four sets of glass doors leading into the ballroom, provided a view of the lake to the north. The eighteen sleeping rooms were hand-finished with plaster walls and wood trim. Built-in furnishings, chairs and tables were hand-made on site by the CCC crews.

From its opening in 1937, the Lodge became a favorite destination of waterfowl hunters from across the country. In the winter, game birds darkened the sky and blanketed the lake as they migrated south for the season. High-profile figures as well as common sportsmen came to stay in the Lodge and hunt in the lake and on the game lands of Hyde County. Local citizens employed their knowledge and experience as hunting guides and developed celebrated reputations amongst the Lodge's clientele. Spanning 37 hunting seasons, Mattamuskeet Lodge



The lodge, at one time, was a destination for waterfowl hunters in the winter when game birds would darken the sky and blanket the lake. (Photo by NCWRC)



In the 1930s, the Civilian Conservation Corps completed several renovations to the lodge, including installing a 121-step spiral staircase to access the lake's beautiful view. (Photo by D. Mims)

and Hyde County became well known for the natural beauty of the landscape, the bountiful wild game, the friendly and capable guides, and the beauty of the iconic Lodge structure. During the off-season the Lodge was a center of local culture. Civic events, festivals, weddings, receptions, and scout meetings were held in the Lodge, as were Mattamuskeet High School proms and dances.

The Lodge served thousands of hunters and anglers until 1974, when alarming declines in waterfowl populations nation-

wide caused the U.S. Fish and Wildlife Service to declare a moratorium on hunting at the lake and closed the Lodge to the public, with the exception of the occasional special event or meeting, from 1974 until 1996. From 1996 through 2000, the building was managed by Partnership for the Sounds, in cooperation with the U.S. Fish and Wildlife Service and East Carolina University. The building hosted weddings, conventions and regional events until 2000.

Although the Lodge appears to be a masonry structure, it actually has a steel frame with steel columns embedded in masonry walls supporting steel roof trusses. The original smokestack, now the observation tower, is a cast-in-place, reinforced concrete tube. The U.S. Fish and Wildlife Service hired engineers to investigate the condition of the Lodge. The engineers found that the original steel columns had significantly corroded. In some critical places, more than 50 percent of the steel cross section had disintegrated. Furthermore, the engineers calculated that the original steel columns, before corrosion, were under designed per current code. The masonry walls surrounding the columns were built with mortar containing sand with a high salt content, and the absence of expansion joints or control joints in the brick walls along with the impact of vibration from the years running the pumps had caused numerous cracks to form in the walls. Water entering through these cracks blended with the salt in the mortar and accelerated corrosion of the steel.



After years of being unused the Lodge has many critical structural issues, including the beam supporting the spiral staircase that had deteriorated over the years. (Photo by NCWRC)

Closer evaluation of the structure uncovered other issues of concern. In the conversion from the pump station to hunting lodge, the CCC had cut away the diagonal bracing where the columns connect to the trusses, weakening the building's resistance to wind or seismic forces. The CCC installed wood floor platforms, which theoretically added rigidity to the walls, but the platform-to-wall connections were too weak to transfer these loads effectively. Analysis proved that the wood floors were not strong enough to meet current code requirements for the maximum occupancy of the fully loaded assembly spaces.

The tower was evaluated as well. Core samples of the concrete and reinforcing were tested. Horizontal cracks were observed to encircle the tower at several locations. The beam supporting the spiral staircase was found to have deteriorated. Significant corrosion was occurring at the base of the observation cab. However, the most alarming evidence appeared when the engineers commissioned a surveyor to pinpoint the location of the top of the tower before a major storm and again after the storm. It appeared from the

survey data that the tower had moved 1.5 inches, deformed by the force of the wind. Based on this information the engineers concluded that the tower could be in danger of collapse if subjected to hurricane force winds. In response to the conclusions reached regarding the condition of the tower and the measured decay of the building columns, the choice was made to evacuate and close the structure in 2001.

Mattamuskeet Refuge managers tried for years to obtain federal funding to correct structural deterioration problems with the Lodge, but each time that funding seemed immanent, more pressing needs would cause the funds to be diverted. Grassroots efforts by local citizens, as well as organized efforts by the non-profit Partnership for the Sounds, resulted in some stop-gap repair initiatives such as spot repairs of the clay tile roof, plumbing upgrades and other minor repairs. But to address structural repairs would require a significant investment of funds.



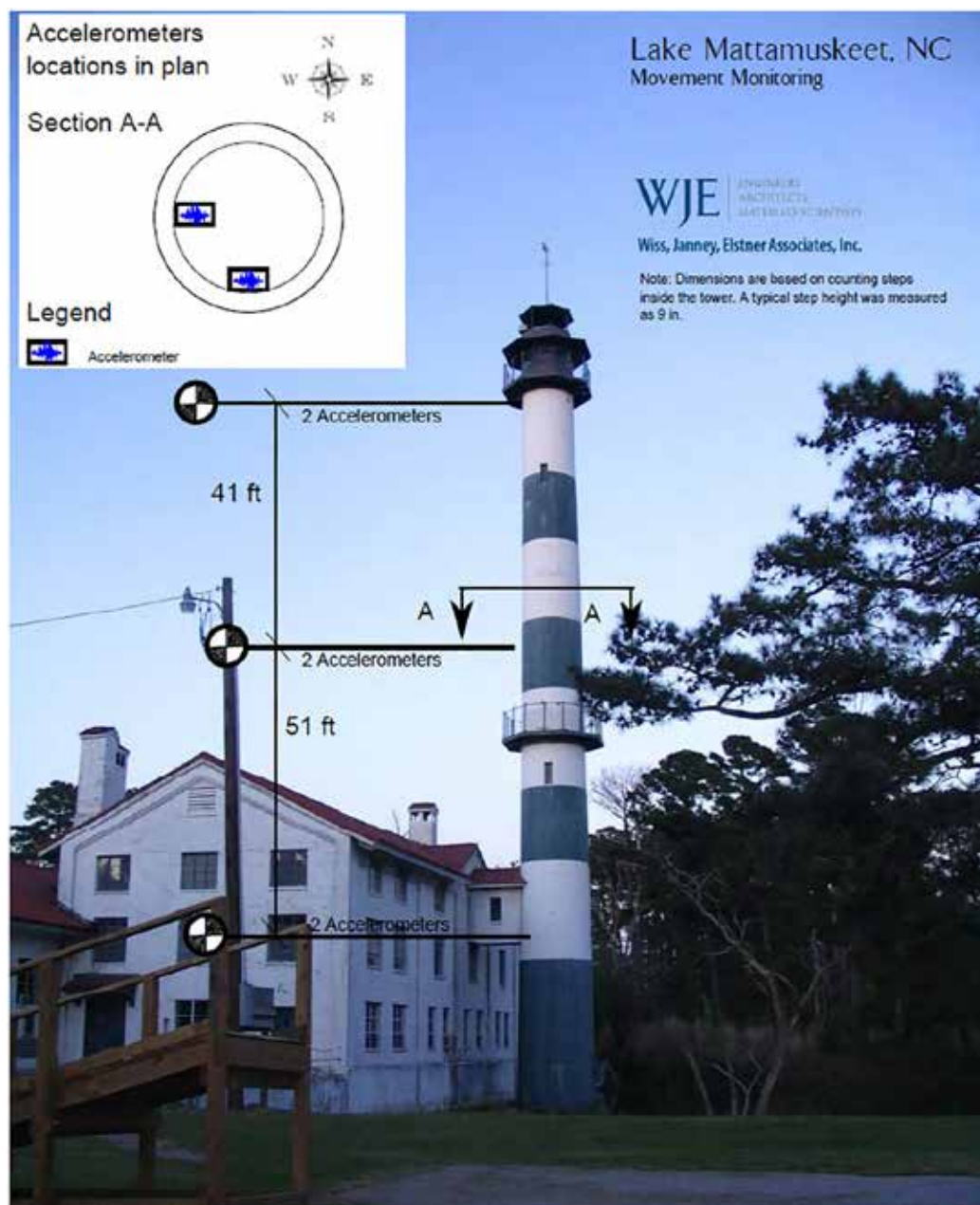
Lake Mattamuskeet today. (Photo by NCWRC)

Faced with the threatened loss of this iconic cultural and historic landmark, state and federal officials met to discuss a possible transfer of deed to the Lodge from the federal government to the State of North Carolina. In 2006, Congress passed HR 5094 conveying the title to the Lodge and 6.25 acres of land to the State of North Carolina “for the purpose of permitting the State to use the property as a public facility dedicated to the conservation of the natural and cultural resources of North Carolina.” Pursuant to Senate Bill 153, the State accepted the transfer of property under the Lake Mattamuskeet Lodge Preservation Act. The Department of Cultural Resources was charged to implement design and construction efforts, and the N.C. Wildlife Resources Commission was designated to manage the Lodge once construction was completed.

STRUCTURAL REHABILITATION BEGINS

In July 2007, the N.C. State Construction office developed an opinion of probable cost for the restoration of the Lodge, establishing the OC-25 budget at \$14,996,908 (escalated to 2008 dollars). Limited capital funding was approved in increments for design and construction. Barnhill Construction Company was selected as construction manager and Risk and Williard Firm Architects was selected to provide architecture, engineering and construction administration.

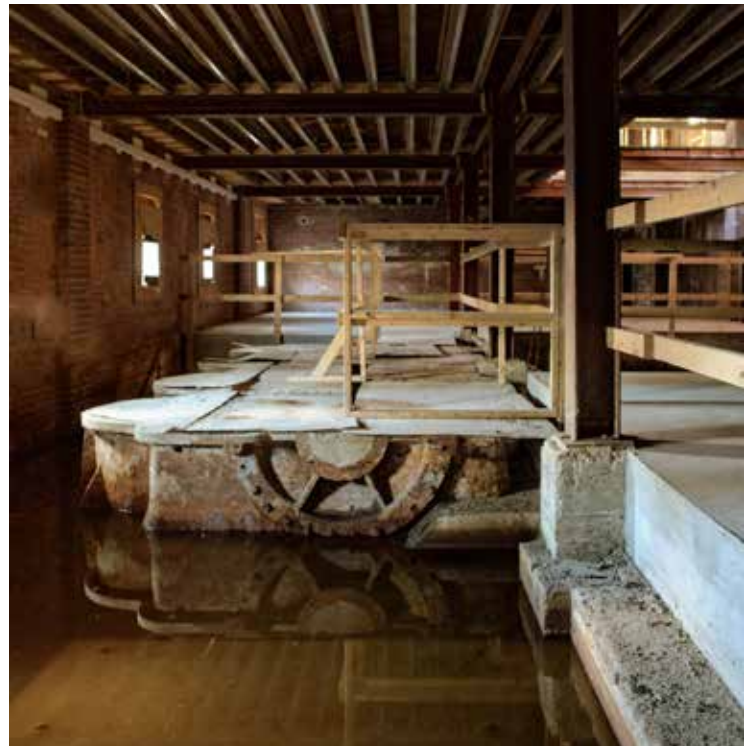
The design team began by commissioning additional structural testing. Since the condition of the tower was of high concern, the designers began by coring through the pile caps to test the condition of the wood piles supporting the weight of the tower. The pile caps were found to be structurally sound. To test the previous engineer's opinions about the deformation of the tower under wind loads, six accelerometers were placed in the tower to measure and record the movement of the tower in wind. During the testing period there was a storm event at the site with winds recorded in excess of 53 mph. The team's structural engineer, David Fischetti (the engineer responsible for moving the Cape Hatteras lighthouse), reviewed the data and concluded that the tower performed properly under wind loading, and thus was not in danger of collapse as previously concluded.



The first phase of construction work consisted of selective demolition and storage. Furnishings, fixtures, wood trim, doors and hardware were carefully removed, tagged, numbered and stored for later reinstallation. The floor slab installed by the CCC on compacted fill over the old pump room floor was removed along with the fill dirt that had washed out, causing the slabs to buckle. Removal of the slabs exposed the remaining pump bodies for the first time in 75 years. Plaster wall finishes with high lead-content paint were removed along with the paint after it was determined that the cost of removing the lead from the plaster would exceed the cost of total removal and replacement with new plaster. Shoring was installed and brickwork removed at each building column location. Lead paint was removed from the end beams and trusses in contact with the columns.

Next, each building column was replaced, one by one, with new steel columns specially coated to reduce salt-induced corrosion. The similarly corroded steel lintels over each window were removed and new lintels and replica windows were installed. Brickwork was reinstalled around the columns and lintels, and cracks in the exterior brickwork were repaired by re-pointing the mortar and installing stainless steel horizontal reinforcing for added strength. The exterior wall restoration concluded with the installation of a new cementitious coating, a higher performance modern version of the coating installed by the CCC in 1937.

The pump room floor slab and back-fill were replaced with a flowable concrete fill that will not wash out; a robust drainage and sodium bentonite water-proofing system; and a new, finished slab. One of the four original pump bodies was retained and exposed for future historic exhibition.



One of the four original pump bodies was retained and exposed for future historic exhibition. (Photo by D. Mims)

To strengthen the building against seismic and wind lateral loads, two steel portal frames were installed on the ground floor, locked into concrete foundations and then bolted to the floor structure above. The attachment of these stiffened floor platforms to the exterior walls was then strengthened by the attachment of steel plates and hurricane washers. Wood floor joists supporting high live loads were augmented with steel channels. To keep the structure from racking under wind loads, new wood diaphragms of wood truss-joists and plywood were installed wall to wall at the attic floor levels and bolted to the exterior walls.

The final act of restoration was to remove, repair, coat and reinstall the cantilevered exterior balcony on the north face of the building.

Funding ended at the completion of the structural rehabilitation, following the economic downturn of 2008 and resulting state budget shortfalls. Temporary wooden work platforms remain in the canals and the unfinished building remains battened down behind chain link construction fence. The work completed to date has completely stabilized the building structure and sealed the vertical portions of the building envelope. No work has been done to repair the tower. The roof has numerous broken tiles and leaks that are beginning to cause damage to the wood roof decking and to interior hardwood floors.

ECONOMIC DEVELOPMENT IMPACT

The University of North Carolina School of Government was commissioned by Hyde County, in partnership with the N.C. Wildlife Resources Commission, to prepare a report on the likely short- and long-term impacts of the renovation of Mattamuskeet Lodge on the economy of Hyde County and the broader region. It is important to note at the outset that the actual impact of the renovation will be largely influenced by the final end use. As such, quantifiable returns on public investment are estimated. This report, *The Economic Development Impact of Renovating Mattamuskeet Lodge* (Appendix A), provides data and analysis to describe an economic context for an operational scenario and to guide strategies and decisions that have the potential to increase the return on investment. The following are conclusions found in the economic report:

1. The historical and cultural importance of Mattamuskeet Lodge to the State of North Carolina may be justification in of itself for completing the renovation.

Mattamuskeet Lodge is an iconic building with great historical and cultural significance nationally, for the state of North Carolina, and for the community of Hyde County. It is a potent symbol for generations of Hyde County families. Further state investment in completing the renovation of the Lodge might be justified on these grounds alone. The state has already spent almost \$6 million on safeguarding the structure of the building and has committed to restoring and maintaining the Lodge as a public facility dedicated to the conservation of natural and cultural resources of North Carolina.

2. State investment to complete the renovation will bring short-term construction jobs and longer-term local economic benefits from Lodge operations.

Investing \$7.5 million in completing the renovation of the Lodge would create 64 construction-related jobs in the short-term and a further 20 jobs in the economy. This result would equate to \$2.2 million in direct wages, \$323,000 in the supply chain, and \$223,000 in additional household spending. Overall, the investment would have a \$9.9 million impact on the local economy, a multiplier of 1.32 for every dollar spent in the region. In addition, after three years, the proposed accommodations in the Lodge would create 20 direct jobs and generate over \$2 million in revenues providing an additional increase of \$900,000 into the economy.

3. **The more the Lodge renovation can catalyze (a) an increase in the number of visitors to the Lake Mattamuskeet National Wildlife Refuge, particularly those from out of state who wish to observe and photograph wildlife, and (b) the continued attraction of high value non-resident hunters, the greater the longer-term economic benefit.**

The Lodge is an integral part of the Lake Mattamuskeet National Wildlife Refuge, which already attracts around 30,000 to 50,000 visitors per year. One study showed that each visitor on average spends \$76.62 directly related to the visit to Lake Mattamuskeet and a further \$49.15 on other spending in the area. This amounts to total annual spending of over \$11.5 million in the local economy.

Another study on a nearby refuge showed that over 90 percent of resident visitors and over 83 percent of non-resident visitors were there to observe and photograph wildlife. Hunting (including for big game) accounted for nearly 17 percent and fishing for 0.5 percent of non-resident visitors. Of note is that non-residents as compared to residents, spent over five times more on observing and photographing wildlife, over three times more on hunting, and over twice more on fishing. Spending per non-resident visitor was highest for hunting at \$84.85, with observing and photographing at \$32.88 and fishing at \$22.86. These data are consistent with national trends.



Lake Mattamuskeet National Wildlife Refuge attracts around 30,000 to 50,000 visitors per year, many of whom come to observe and photograph wildlife. (Photo by NCWRC)

4. **The renovation of the Lodge will create a new destination or anchor for tourists, particularly for those visiting or staying on the Outer Banks.**

An important component of visitor attraction will be the ability to reach the large numbers of people who stay on the Outer Banks and who seek experiences away from the crowds. The county manager talks about “completing the loop,” where travelers along the Outer Banks to Ocracoke catch a ferry to Swan Quarter and then proceed back to Manteo via Mattamuskeet (as well as Swan Quarter and Engelhard). The Lodge in this scenario assumes the role as a destination or anchor along the “Road Less Traveled.”

5. **Increased levels of visitors will only generate positive economic impacts on Hyde County if there are opportunities for spending money locally.**

Visitors expect to spend money on food and drinks, lodging, shopping, transportation and recreation. The higher the quality of the visitor experience, the more they will spend. Data on tourism spending in 13 counties in northeastern coastal Carolina show that Hyde County already has the second highest spending per capita of resident population, second only to Dare County. This indicates both current tourism orientation and potential for growth. The peak visitor seasons for Hyde County are January–February for hunting and July–August for summer fishing. Analysis of the 10 existing lodging proper-

ties shows that they are in total operation at only 32 percent of theoretical capacity, suggesting they can accommodate substantially more guests if they can offer the quality and type of lodging desired by out-of-season visitors. Investment in new tourism infrastructure, such as a mid-price hotel, although desirable, may be a long-term prospect, so a priority should be to support the incremental upgrading of existing accommodation and the development and marketing of additional bed and breakfast and self-catering options. For every 10 percent increase in tourism, spending \$600,000 could be injected into the county's economy creating 40 jobs, and increasing local taxes by \$167,000 and state taxes by \$147,000.

6. The renovation of the Lodge could be a catalyst for a variety of complementary entrepreneurial opportunities associated with increased visitation.

An important idea currently being developed is the use of Mattamuskeet Lodge as a brand for an entrepreneurial network that would assure quality standards and customer satisfaction for products and services offered by Hyde County businesses and entrepreneurs. Possible entrepreneurial activities that would reinforce the purpose of the Lodge as a catalyst for the enjoyment and conservation of the region's natural and cultural resources might include guiding services, fishing and hunting equipment and supplies, recreational equipment rental (bicycles, kayaks, paddleboards), branded local foods (fresh and processed), lodging, campgrounds, convenience and gift shops, game processors, dog kennels, and laundry services. There is already in place a system of business support centered on the County Office of Planning & Economic Development that extends to a network of local, regional, state and federal resources. Existing and emerging business ventures auger well for the possibility of a strong entrepreneurial response to these opportunities..

The economic report also included the following information:

The Local and Regional Context

Mattamuskeet Lodge is in Hyde County, one of the least populated counties and one of seven "completely rural" counties in North Carolina. Its 2015 population was 5,526, which was a decrease of 5.1 percent from 2000 — the state's population in the same period increased by 24.8 percent. Hyde County is designated by the N.C. Department of Commerce as a Tier One county, meaning "most distressed," reflecting the county's high poverty rate of 23.4 percent (NC: 17.2 percent), a low median household income of \$36,891, 79.2 percent of the state level 13 and high unemployment of 8.9 percent (NC: 6.1 percent). Although Hyde County is one of eight counties forming a commuting zone with Greenville/Pitt County at its core, commuting flow data show that Hyde County has the closest economic connections with Beaufort County and Dare County. Of those who are employed in Hyde County, half live outside the county — primarily in Washington and Belhaven in Beaufort County and Manteo in Dare County. Of the workforce who live in Hyde County, nearly 70 percent work in the county, while the other 30 percent work in Raleigh (Wake County), Greenville (Pitt County), Belhaven (Beaufort County), Manteo (Dare County), and Washington (Beaufort County). Work destinations in Hyde County are Swan Quarter, Ocracoke, Engelhard and Fairfield.

Hyde County is one of 14 counties in the Northeast Coastal nonmetropolitan area as designated by the Bureau of Labor Statistics. As of May 2015, this area had 96,460 employees across all occupations with an annual mean wage of \$35,210, just under 80 percent of the mean for North Carolina and 73 percent of the national mean. These relatively low wage levels are largely determined by the region's occupational structure, where four of the five top occupations, which together account for 45 percent of total employees, have annual mean wages substantially below the overall regional and statewide means and below their respective occupation annual means.

A 2016 analysis for the Northeastern Workforce Development Board estimated that 10 industries provided 1,573 jobs in Hyde County, including 639 in state and local government, including elementary and secondary education. Agriculture (animal and crop production, including contract laborers) accounted for 553 jobs, seafood processing 88 jobs, and restaurants 154 jobs, with wholesale trade agents/brokers and real estate agent/brokers providing a further 139 jobs. In these estimates, total earnings amounted to over \$57.9 million, \$30.3 million from government jobs and \$27.6 million from private sector jobs.

A different perspective is provided by the U.S. Census County Business Patterns, which showed in 2014 that there were 164 business establishments in Hyde County with a total of 858 employees and an annual payroll of \$25.7 million. The top five business sectors (by annual payroll) were accommodation and food services (28 establishments and 157 employees), retail trade (37 establishments and 115 employees), wholesale trade (11 establishments and 72 employees), construction (22 establishments and 86 employees) and manufacturing (5 establishments and 64 employees). These five sectors accounted for 63 percent of establishments, 58 percent of employees, and 61 percent of annual payroll.

Tourism is an important but relatively undeveloped part of the Hyde County economy, compared with the main economic driver of agriculture with \$133.4 million in 2012 in crop and livestock sales, and with its neighbor Dare County. In 2015 tourism in Hyde County generated \$33.54 million in spending (73rd in the state), up by 1.1 percent from 2014; 380 jobs; \$6.61 million in payroll; \$1.59 million in state taxes; and \$1.82 million in local taxes. Dare County, which ranks fourth in the state for tourism spending at \$1.05 billion (up by 3.3 percent from 2014), generated 12,710 jobs; \$223 million in payroll; \$50.48 million in state taxes; and \$47.03 million in local taxes. A comparison of tourism spending per capita of the resident population in 13 northeastern coastal North Carolina counties shows that Hyde County ranks second, indicating a strong competitive tourism orientation. A 2014 report by Western Carolina University estimated that "As a result of taxes generated by tourist spending in Hyde County, each of the 3,353 Hyde County households pay \$984 less in local and state taxes."

The Visitor Attraction Context

A 2014 survey by the N.C. Wildlife Resources Commission of over 2,000 anglers at Lake Mattamuskeet found that 47 percent came from Hyde County and neighboring four counties (Dare, Beaufort, Tyrrell, and

Washington) and 53 percent from a total of 54 North Carolina counties and from 17 states outside North Carolina, primarily Virginia, but also Nebraska, West Virginia, Maryland, Pennsylvania and New York. Three-quarters (77.3 percent) of the out-of-state visits were in the summer months May through August, whereas in-state visits were concentrated in April and May. Further data on Lake Mattamuskeet's attractiveness come from a 2006 survey by East Carolina University of visitors to eight national wildlife refuges in North Carolina and Virginia, including Mattamuskeet, as well as Pocosin Lakes (Hyde, Tyrrell, and Washington counties) and Alligator River (Dare and Hyde counties). Two-thirds (65.9 percent) of visitors to Mattamuskeet described themselves as tourists, of which nearly all (91.6 percent) describe visiting the refuge as the primary purpose of being in the region. The average travel distance from home was 174 miles, with 43 percent traveling over 100 miles. Average visitor spending at Mattamuskeet was \$76.62. Calculations of economic impact of an estimated 86,000 visitors showed total expenditures directly related to the refuge visits of \$7.03 million and a further \$4.51 million in other expenditures while in the region.



The majority of visitors to two nearby refuges participated in non-consumptive wildlife activities, such as birdwatching and photographing wildlife. (Photo by NCWRC)

In addition, the survey revealed that visitors to Mattamuskeet also visited Alligator River (60.2 percent), Pea Island (55.8 percent), Swan Quarter (50.4 percent), and Great Dismal Swamp (41.6 percent). Visitors to Roanoke River (69.6 percent), Pocosin Lakes (44.2 percent), Pea Island (30.9 percent), Mackay Island (26 percent) and Alligator River (25.7 percent) also visited Mattamuskeet. These combination visits indicate the potential for cross-marketing among the region's refuges. A major 2015 report from the U.S. Fish and Wildlife Service calculated economic benefits to local communities of national wildlife refuges. A sample of 92 refuges across the United States were analyzed including 16 from the Southeast (Region 4), of which two are close to Mattamuskeet (which was not in the sample): Alligator River and Pocosin Lakes. This study is particularly helpful in distinguishing between three different types of visitor purposes: non-consumptive (photography, bird-watching), hunting

and fishing. The key findings are that for both refuges, non-consumptive visits accounted for the clear majority of both residents and non-residents, and that expenditures per non-resident visitor were up to five or six times greater than for a resident visitor. Although expenditure per head was highest for hunting visits, particularly in Pocosin Lakes where big game accounted for 16.8 percent of visits, the relatively smaller numbers mean a much smaller economic impact than for non-consumptive visits.

The 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation indicated that in North Carolina there was a modest growth in the number of anglers and wildlife watchers and their expenditures

over the period 2001–2011, but a small decline in the number of hunters and their expenditures. The survey showed that 1.2 million resident anglers and 329,000 out-of-state anglers fished in North Carolina, spending a total of \$1.5 billion in trip-related and equipment expenses, equivalent to \$43 per day. In addition, 1.9 million residents and non-residents observed and photographed wildlife in the state, spending \$930 million or \$40 per day. Similarly, 259,000 in-state and 76,000 out-of-state hunters spent \$525 million or \$30 per day.

An indicator of the seasonal flows of visitors is provided by an analysis of occupancy rental income in Hyde County. Peak months are in January and February for the hunting season and in July and August for summer fishing. There have been no forecasts of the additional visitation levels over and above the current levels, estimated to be between 32,750 and 58,000 refuge visitors that might be generated by a refurbished lodge. The 2009 study referred to an annual average of 8,856 visitors to the Lodge over the five-year period 1996–2000 just before it was closed, but visitation levels to other eastern North Carolina tourism landmarks suggest considerable scope for growth. For instance, in 2015, 106,549 people climbed the Cape Hatteras lighthouse and 48,271 climbed the Bodie Island lighthouse; National Park Service counts showed 289,885 visitors to the Fort Raleigh National Historic Site and 437,184 to the Wright Brothers National Memorial.

The Economic and Business Development Context

As described earlier, Hyde County is characterized by many indicators of economic distress, which means that the retention and growth of businesses and jobs is a high priority at the county, regional, state, and federal levels. Of concern is the continuing loss of young people who leave and do not return because there are insufficient job and career opportunities. The existing local infrastructure of economic development support will be vital for maximizing the economic impact of the Lodge renovation. The main elements are:

Hyde County: The county's Office of Planning and Economic Development provides local leadership in supporting business start-ups and expansions, and in highlighting emerging business opportunities in Hyde County. Following initial interviews with potential businesses, referrals are made to counsellors either at the Small Business and Technology Development Center (SBTDC) at Elizabeth City State University in Pasquotank County or at Beaufort County Community College in Washington. The county also provides funding for business investment up to \$300,000 through its Golden Leaf Foundation-supported revolving loan fund. The Office is well networked with other economic development organizations and resources that can support Hyde County businesses and projects.

Hyde County Chamber of Commerce: The Chamber, with approximately 100 members, promotes the commercial and civic interests of Hyde County, and organizes activities and events to showcase the county's visitor attractions.

Albemarle Commission: The Albemarle Commission is a council of governments serving 10 counties in northeast coastal North Carolina, including Hyde County. Its functions include the Area Agency on Aging,

Rural Planning, Workforce Development (through the Northeastern Workforce Development Board), Economic Development, and Senior Nutrition. The Commission has been recognized as an Economic Development District by the U.S. Economic Development Administration (EDA) and as such is responsible for coordinating the region's Comprehensive Economic Development Strategy (CEDS). It operates a revolving loan fund for the region's businesses supported by EDA, making loans of \$10,000 to \$100,000. The Commission is the lead organization for the *Balancing Nature and Commerce in Northeastern North Carolina* initiative to develop a regional ecotourism strategy in conjunction with the U.S. Fish and Wildlife Service, the National Park Service, and a number of public and nonprofit organizations and local community leaders. There is also an array of regional, state and federal resources that can be accessed to support economic development in Hyde County.

LODGE OPERATIONS

The Public-Private Partnership Concept

In 2008, the N.C. Wildlife Resources Commission engaged N.C. State University Tourism Extension and representatives from the hospitality industry to assist in developing a business plan for the operation of the Lodge as a state agency-run facility. From this effort it became evident that the annual cost to operate the Lodge would exceed income. The small number of lodging rooms available to generate income, the remote location of the Lodge, and the lack of other tourist attractions in the immediate area, meant that a sophisticated and targeted marketing effort and business operation would be essential. Although the N.C. Wildlife Resources Commission recognized the need to preserve the Lodge for its hunting heritage, conservation, education, and natural and cultural historic merits, the agency also recognized the need to find a solution that could make operation of the Lodge economically sustainable.

In early 2015, the non-profit North Carolina Land of Water (NCLOW) identified the Lodge as a keystone economic stimulus project for the region, and therefore, sought and received a grant to fund an updated business plan based on a public-private operational model. N.C. Wildlife Resources Commission coordinated efforts with NCLOW and Hyde County by convening a working group to envision a new model for how a public-private operation might work. The group consulted with local industry involved in ecotourism to provide private business perspectives for the region.

The group acknowledged the challenges of making the Lodge economically viable as a stand-alone operation. However, with its iconic image and its 80-year hunting and waterfowl history, Mattamuskeet Lodge has authentic intangible qualities that can be marketed and applied not only to the facility itself but also licensed to related local supporting businesses such as hunting guides, outfitters, local hotels and restaurants, seafood markets and artists. The Mattamuskeet Lodge brand can become a seal of quality assurance and additional source of revenue beyond the stand-alone Lodge model. By extending the status and bene-

fits of the brand to many other businesses in the region, the Lodge could provide economic stimulus to the region. Further, local businesses could also benefit from referrals, scheduling and reservations provided by the Lodge.

The reopening of the Lodge would restore its cultural significance and serve as a hub connecting the public to the area's natural resources. The renovated Lodge facilities will include guest rooms, meeting and event spaces, break-out areas, restaurant and catering services, interpretive exhibits depicting the rich and fascinating history the Lodge, a reception area and gift shop, staff offices, equipment storage, outside gathering spaces, over six acres of grounds and walkways and various scenic vista observation points including the Lodge observation tower, and direct access to the waters of Lake Mattamuskeet. The Lodge of the 21st century will operate congruently with its cultural significance, including accommodations reflective of its historical context and locally sourced dining experiences. With Lake Mattamuskeet as its natural setting, the Lodge will also provide a unique meeting and event facility. However, just as critical will be its role as a major attractor, a hub for regional tourist information, a home base for many outdoor recreational experiences supplied by outfitters and guides, a source of environmental education for permanent and transient audiences, and a connection for residents to their collective past.

Mattamuskeet Lodge can once again be the keystone of mainland Hyde County. By working collaboratively, Hyde County and its citizens can achieve complementary objectives that would increase the economic growth of the region. The future direction and operational decisions of the Lodge are based on several factors: the provisions of the federal transfer act, the economic context of the geographical region, needs and success criteria of the partners, and the input of the Hyde County community.

LODGE PRODUCT

In order to be effective as a hub, the Lodge must provide every guest with an enjoyable and memorable experience. Whether they have come to hunt, observe nature, get married or learn about history, every guest should be comfortable and welcome to enjoy any of the amenities the Lodge offers.

The primary products and services offered by the Lodge include:

- Accommodations – The accommodations at the Lodge will be designed and furnished in keeping with the historical character of the Lodge while providing comforts of modern living. Room rates will fluctuate seasonally and be based on demand. With such a limited supply of a unique resource, initial target rates are expected to significantly exceed costs of other local accommodations. The Lodge is anticipated to draw far more than its capacity to the region, thereby increasing demand for other facilities to fulfill the overflow rental demand across an array of rate levels.

- Special event & retreat venue – The Lodge should be a popular destination for weddings, business retreats and other special events. With stunning views, a large ballroom, meeting facilities, onsite and nearby accommodations, and ample catering options, these events will be a large part of Lodge revenues. This portion of the business will take slightly longer to jumpstart due to the time horizon that most clients use to plan large events (most are planned 12 to 24 months in advance).
- Food service – The Lodge will operate a full service, high quality restaurant, which is not currently offered in the immediate area. The restaurant will have a unique focus on locally sourced farm-to-table and sea-to-table fare, elements that support the regional agriculture and fishing industries.
- Gift shop – The Lodge will include a general provision center and gift shop specializing in items crafted throughout the area.
- Brand – Mattamuskeet Lodge brand development and licensing are key components of making this plan sustainable.
 - Outfitter facilitation and booking - The Lodge will feature an indoor location where guides and outfitters can meet with clients and facilitate introductory seminars and learning workshops.
 - Affiliates – By integrating with the marketing and advertising of the Lodge, other local businesses can promote their products and services to a wide variety of customers searching for individualized experiences.
- Public use of the Lodge – The Lodge and all of its common spaces will be open for the general public free of charge
 - Lodge tours – Tours of the Lodge will be provided free of charge to the public. These tours will highlight the rich history and natural diversity of Mattamuskeet Lodge, Mattamuskeet National Wildlife Refuge, and the region.
 - Community use – The Lodge will provide a venue for community meetings and functions, which restores the longstanding cultural use of the facility.
 - Research – The Lodge will provide a central location for students and researchers to study the rich diversity of plants and animals of the area.

PROPOSED BUILDING DESIGN

In order to realize the full potential of the Lodge as a hub of regional hunting, birding and eco-tourism business, certain modifications to the building plans are proposed. The Mattamuskeet Lodge Repair and Renovation Cost Summary (Appendix B) outlines key features of the Lodge including:

Guest Rooms

The current design includes 14 bedrooms with accommodations for up to 34 guests. While original rooms at the Lodge only had hand sinks and bathrooms were shared, the new design provides private bathrooms for each guest room.

Reception

Reception space will be located near the main entrance to facilitate the hub concept and provide a meeting location for visitors launching an excursion or just coming to tour the Lodge.

Meeting Room

The old wood-paneled dining room will be restored to its original condition and appearance. However, due to its inadequate size for food service, it will function as a rentable private meeting room for conferences or board meetings.

Commercial Kitchen

A new commercial is proposed for the second floor adjacent to the primary dining space and the main ballroom. The kitchen is designed to provide restaurant or banquet service for up to 200 persons with the flexibility and capacity to prepare and serve any menu.

Dining Room / Restaurant

The main dining will be located on the main central assembly floor adjacent to the new kitchen. The dining space, which can accommodate approximately 75 patrons, will occupy the Lodge's grandest room, with abundant natural light and panoramic views of the lake. Tables and chairs can be removed for dances and other uses.

Lounge

The upper level lounge space, with its grand fireplace and balcony, will be restored to its original condition to the maximum extent possible. A movable bar will be available and stored in an adjacent service room furnished with an ice machine, beverage stations and storage accommodations.

Mud Room and Gear Storage

The lowest level entrance will be designed especially for guests returning from the field. The first third of the lowest floor will contain a mud-room with lockers, secure storage and space for service providers (possibly including gunsmith or other service vendors). Depending on the season, the users of this space could be hunters, birdwatchers, other outdoor enthusiasts, or students returning from outings.

Common Areas

The 23,000-square-foot Lodge will feature exhibit areas throughout the common spaces focusing on the cultural and natural history of the region and building, including the exposed remaining pump body that

will be visible through a structural glass floor. A boardwalk surrounding the rear of the Lodge will provide visitors a comfortable outdoor retreat to enjoy the natural scenery and local wildlife.

PROPOSED BUSINESS MODEL FOR MATTAMUSKEET LODGE

In order to maximize opportunities to expand revenue streams necessary to support operational costs and engage local businesses, the N.C. Wildlife Resources Commission recommends establishing a public-private partnership to operate the Lodge. While the revenue generated by the hospitality functions of the Lodge is the primary means of offsetting operational costs, licensed marketing efforts and associated services provide a unique opportunity to generate required additional revenue from a vast array of support services.

It is proposed that local businesses meeting certain quality control standards can enter into a contract to become an “affiliate” of the Lodge. Affiliates will be included in marketing opportunities, advertising campaigns and Lodge booking services. They will also be able to use the Mattamuskeet Lodge brand to promote their business.

The area encompassing northeastern N.C., especially Hyde County, has few recognizable brands, information centers or customer experience reviews. Nevertheless, the demand for high quality outdoor adventure is high, and the region around the Mattamuskeet Lodge has one of the most plentiful natural resource bases of anywhere in the world. The region lacks market exposure and a well-documented and searchable review history that customers seek when planning an outdoor adventure. The lodge marketing and branding efforts, along with its affiliate program, will provide this much-needed quality assurance aspect for area visitors.

To facilitate the recommended public-private partnership for operation of the Lodge, the N.C. Wildlife Resources Commission recommends:

An independent board, appointed by N.C. Wildlife Resources Commission, N.C. Department of Natural and Cultural Resources and Hyde County, be established to develop and administer a contract with a private corporation to operate the Lodge. Appointments should be generally informed on natural, cultural or economic resources. It is further recommended that N.C. Wildlife Resources Commission retain a majority of appointments due to their statutory long-term stewardship responsibility.

LEGAL CONSIDERATIONS

The Umstead Act

According to the Umstead Act (G.S. 66-58), government agencies cannot operate facilities that will compete with private businesses. The use of an independent board to manage the Lodge operations contract would conceivably remove the agency from direct operations. Further, this approach would provide an open market opportunity for a vendor to operate the Lodge under conditions prescribed by the board and consistent with the transfer act. According to G.S. 113-305: "The Wildlife Resources Commission is empowered to enter into cooperative agreements with public and private agencies and individuals..."

Further examination is needed to identify any additional potential conflicts with the Umstead Act. _

MAJOR WORK REMAINING

On-Site Sewage Treatment

Although the building was once connected to the septic system owned by U.S. Fish and Wildlife Service, the Service has indicated the drain field no longer has the capacity to handle the projected sewage flow from the Lodge without major upgrades.

Site improvements

Efforts have been made in the current design to minimize the cost of site work for the project. By eliminating plans to build a new parking lot in the woods adjacent to the Fish and Wildlife Service facility and plans for supplemental parking spaces around the current lot and driveway, site costs have been reduced.

Wood Trim and Carpentry

Restoration and reinstallation of stored wood trim, stairs and other features will be required. Hardwood floors, protected during previous phases of construction, will be repaired and refinished.

Insulation

New insulation will be added to the underside of the roof deck. The solid masonry, plaster-finished exterior walls will not be insulated. Changing the composition and thermal behavior of the cementitious-coated historic masonry walls in this wet environment could trap moisture and cause damage to the masonry. The project is qualified as an historic site. Therefore, it is not required to comply with 2012 N.C. Energy code. While the exterior walls will not be insulated, high efficiency HVAC systems will be provided to offset energy costs.

Clay Tile Roof Replacement

In at least forty locations, water is penetrating the roof and damaging the wood roof deck. The wood deck supporting the tiles is made of 2x6 tongue and groove decking. At each of the leak locations the decking

below is beginning to decay, with white rot forming and spreading along the water-soaked deck boards. This project will remove the original clay tiles and replace them with new, matching tiles. Damaged wood decking will be replaced. An ice and water shield membrane system will be installed below the tiles. Copper half-round gutters and downspouts will be installed.

Doors

Wood doors will be restored and reinstalled except where code requires higher fire ratings. New replicated and existing hardware components will be used in combination where possible. The State's adoption of the new 2015 Existing Building Code now reduces the previous fire-rating requirement making preservation of the majority of the original doors now feasible.

Interior Plaster Restoration

Plaster wall finish removed during the earlier structural stabilization phase will be replaced with new plasterwork in accordance with the Secretary of the Interior Standard for Historic Preservation.

Plumbing

The building will be supplied with a new 2.5-inch copper water service. A new reduced pressure zone (RPZ) backflow device will be installed. A new propane second stage regulator will be installed. New schedule 40 steel gas pipe will be installed to service the kitchen and domestic water heaters. Bulk gas storage tanks will be located on the site by a local provider.

Domestic hot water will be produced by condensing-style, gas-fired water heaters located in the mechanical rooms. A thermostatic mixing valve will be installed to temper water supplied to the guest rooms. The hot water will be recirculated with a small recirculation pump.

New water pipe will be type k copper with solder joints and insulated with 1-inch fiberglass. New waste lines will be schedule 40 PVC solid core pipe. A new pre-cast concrete grease interceptor will be installed outside.

New plumbing fixtures in common areas will consist of flush valve water closets, flush valve urinals and lavatories with meter faucets. Guest room fixtures will be floor-mounted flush tank water closets, fiberglass bath tub/showers and lavatories.

Mechanical Systems

New mechanical equipment will be a Variable Refrigerant Volume (VRV) system. The system will utilize a combination of ductless and ducted fan coils, heat recovery condensing units, and controls. A series of refrigerant selector boxes will direct refrigerant as needed to fan coils to cool and heat spaces. Guest suites will have individual fan coils for independent temperature control. Common spaces such as meeting rooms, dining room, lounge and kitchen will share multiple units.

Toilet exhaust will be ducted to attic space and collected to an inline exhaust fan. Exhaust air will be discharged to the outside via louvers in the gable. Outside air will be ducted to individual fan coils from ductwork and intake louver in attic.

New Type 1 kitchen hoods will be provided for new cook lines. A Type 2 hood will be provided over the dishwasher. Hood fans will be located in the attic and discharge through the gable end. Make-up air fans in the attic will be ducted to make-up plenums at the hood.

Demand control ventilation will be used to reduce ventilation when not needed, by measuring carbon dioxide levels in the return air.

A new digital device computer (DDC) control system will be installed to control all aspects of the HVAC system. The system will provide remote monitoring of the system, scheduling and set point adjustment. The system can be accessed via the Internet.

Electrical Systems

Electrical Service: Per the local utility company, the available 3-phase system is 120/240V 3P, 4W hi-leg. The utility will provide a pole-mounted transformer. The project will provide the secondary from the pole to the service locations. There are three service locations:

1. Main building. The main building will be with 1200A 3 phase service. Main service panel will be located at first floor.
2. Mechanical yard: The service will be a 400A 3 phase service.
3. Fire pump house: The service to be determined by the pump information. Expect to be 200A phase service.

An emergency generator is not required. Per NEC 695.3(A)(1), the electric utility can be used if it is considered as a reliable power source.

Lighting: Selected existing historic surface and pendant fixtures will be re-conditioned and reused. Additional new LED fixtures will be used to augment the original fixtures. Egress lighting will be achieved by using fixture with battery backup. Emergency light units will be used only in service areas such as the electrical and mechanical rooms. Occupancy sensors will be used in office, public toilets and some specific rooms.

An addressable fire alarm system will be provided in compliance with 2012 NC Fire Code.

Fire Suppressions System, Pumps, and Storage Tanks

The water service to the site has inadequate pressure and volume to serve the requirements for the proposed building sprinkler system. Consequently, in addition to the building sprinkler system, a new

50,000-gallon water storage tank with fire-pumps will be required.

Tower Restoration

Cracks in the walls of the tower are still of some concern, but these cracks will be stitched together with carbon fiber rods installed with epoxy in vertical dados cut into the walls from the outside and then sealed in a carbon fiber wrap before painting.

The interior spiral staircase will be removed, stripped of lead paint, refinished and reinstalled. The spalled interior surface of the tower shaft will be parged and recoated.

The observation decks at the mid-level and at the top of the tower will be disassembled. The embedded and cantilevered steel beams will be removed from the tower walls, sandblasted, recoated with high performance paint and reinstalled. New decking and guardrails will be installed.

Finally, the observation cab at the top of the tower will be unbolted and removed by crane. On the ground it will be sandblasted, repaired as required, recoated with a high-performance coating system, re-glazed with laminated glass, and then reinstalled.

PROJECT COST SUMMARIES

SUMMARY OF TOTAL EXPENDITURES TO DATE (2007-2010)

Construction	\$4,524,735
Architecture and Engineering	\$764,622
Structural and Hazmat Testing and Abatement	\$423,156
Total Spent to Date	\$5,712,513

FUNDING REQUIRED TO COMPLETE THE PROJECT

General Conditions and Supervision	\$387,276
Selective Demolition	\$187,275
Onsite Sewer System Upgrades	\$353,435
Site Work	\$175,941
Concrete	\$86,822
Waterproofing	\$42,940
Observation Tower Restoration	\$576,111
Carpentry	\$100,569
Insulation	\$93,100
Clay Tile Roof Replacement	\$397,755

Doors and Windows	\$265,340
Finishes	\$659,055
Specialties	\$36,460
Commercial Kitchen Equipment	\$569,000
Elevator	\$95,000
Sprinkler System including Storage and Pumps	\$346,495
Plumbing	\$356,000
Heating, Ventilation and Air Conditioning	\$588,060
Electrical	\$557,656
BARE COST SUBTOTAL	\$5,841,681
Contractor's OH&P	\$350,500
Bonds and Insurance	\$128,517
SUBTOTAL	\$6,320,699
Estimating Contingency (10%)	\$632,070
Escalation (6%)	\$350,500
Design and Construction Administration	\$410,000
TOTAL CONSTRUCTION AND DESIGN	\$7,713,270
Furniture Allowance*	\$355,824
Exhibit Allowance*	\$232,500
TOTAL FURNISHED PROJECT COST	\$8,301,594

* Costs anticipated to be incurred by others.

REFERENCES

1. Anderson, C.J., Carr, J. and Kline, C., 2008, rev. 2009. Mattamuskeet Lodge: Business Management and Tourism Study. NC State University Tourism Extension and NC Central University for North Carolina Wildlife Resources Commission.
2. Dabson, B., 2016. The Economic Development Impact of Renovating Mattamuskeet Lodge Report to Hyde County, North Carolina and North Carolina Wildlife Resources Commission.
3. Vogel song, H., 2006. East North Carolina National Wildlife Refuge Visitor Use Study. East Carolina University Department of Recreation & Leisure Studies.

APPENDICES

Appendix A: The Economic Development Impact of Renovating Mattamuskeet Lodge

Appendix B: Mattamuskeet Lodge Repair and Renovation Cost Summary



Lake Mattamuskeet (Photo by NCWRC)

The Economic Development Impact of Renovating Mattamuskeet Lodge

Report to Hyde County, North Carolina and
North Carolina Wildlife Resources Commission

Brian Dabson

November 2016



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Preface

The University of North Carolina School of Government was commissioned by Hyde County, North Carolina in partnership with the North Carolina Wildlife Resources Commission to prepare a report on the likely short- and longer-term impacts of the renovation of Mattamuskeet Lodge on the economy of Hyde County and the broader region.

It is important to note at the outset that the actual impact of the renovation will be determined by a host of policy, operational, and individual choices. As such, there can be no definitive quantifiable return on public investment. What this report provides is data and analysis to describe the economic context for the Lodge and to guide strategies and decisions that have the potential to increase the return on investment.

The report has three sections:

1. The Economic Development Impact of Renovating Mattamuskeet Lodge: Conclusions
2. Analysis of Data and Research: Narrative
This section is organized into four parts:
 - The history and potential of the Mattamuskeet Lodge
 - The local and regional context
 - The visitor attraction context
 - The economic and business development context
3. Data Sources and Additional Information

The report was prepared in October 2016 based upon the compilation and analysis of secondary source materials, and a series of interviews conducted during a site visit to Hyde County on October 25-27, 2016. Much appreciation for their time and insights are due to Kristen Noble (Hyde County) and Ashton Godwin (NC Wildlife Resources Commission) together with Mark Williard (Williard Stewart Caliendo Architects), John Mullins, Janet Russ, and Averil Simmons (Hyde County Chamber of Commerce), Judy McLawhorn (Mattie Arts), Cathy Davison and Sandra Powers (Albemarle Commission), Jan Moore (Senior Tar Heel Legislature), Peter Campbell (U.S. Fish & Wildlife Service, Mattamuskeet NWR), Brandon Martelle (Martelle's Feed House Restaurant), Chris Williams (Chris's Grocery), Jamin Simmons and Rob Orr (Mattamuskeet Management & Consulting/Dare To Hyde), Dawson Pugh (Pamlico Shores Produce), Bill Rich (Hyde County Manager), and Earl Pugh (Hyde County Commission).

THE ECONOMIC DEVELOPMENT IMPACT OF RENOVATING MATTAMUSKEET LODGE: CONCLUSIONS

1. **The historical and cultural importance of Mattamuskeet Lodge to the State of North Carolina may be justification in of itself for completing the renovation.**

Mattamuskeet Lodge is an iconic building with great historical and cultural significance nationally, for the state of North Carolina, and for the community of Hyde County. It is a potent symbol for generations of Hyde County families. Further state investment in completing the renovation of the Lodge might be justified on those grounds alone. The state has already spent almost \$6 million on safeguarding the structure of the building, and has committed to restoring and maintaining the Lodge as a public facility dedicated to the conservation of natural and cultural resources of North Carolina.

2. **State investment to complete the renovation will bring short-term construction jobs and longer-term local economic benefits from Lodge operations.**

Investing \$7.5 million in completing the renovation of the Lodge would create 64 construction-related jobs in the short-term and a further 20 jobs in the economy. This would equate to \$2.2 million in direct wages, \$323,000 in the supply chain, and \$223,000 in additional household spending. Overall, the investment would have a \$9.9 million impact on the local economy, a multiplier of 1.32. In addition, after three years, the proposed accommodation in the Lodge would create 20 direct jobs and generate over \$2 million in revenues providing an additional boost of \$900,000 into the economy.

3. **The more the Lodge renovation can catalyze (a) an increase in the number of visitors to the Lake Mattamuskeet National Wildlife Refuge, particularly those from out of state who wish to observe and photograph wildlife, and (b) the continued attraction of high value non-resident hunters, the greater the longer-term economic benefit.**

The Lodge is an integral part of the Lake Mattamuskeet National Wildlife Refuge, which already attracts around 30,000 to 50,000 visitors per year. One study showed that each visitor on average spends \$76.62 directly related to the visit to Lake Mattamuskeet and a further \$49.15 on other spending in the area. This amounts to total annual spending of over \$11.5 million in the local economy.

Another study on a nearby refuge showed that over 90 percent of resident visitors and over 83 percent of non-resident visitors were there to observe and photograph wildlife. Hunting (including for big game) accounted for nearly 17 percent and fishing 0.5 percent of non-resident visitors. Of note, is that non-residents as compared to residents, spent over five times more on observing and photographing wildlife, over three times more on hunting, and over twice more on fishing. Spending per non-resident visitor was highest for hunting at \$84.85, with observing and photographing \$32.88 and fishing \$22.86. These data are consistent with national trends.

4. The renovation of the Lodge will create a new destination or anchor for tourists, particularly for those visiting or staying on the Outer Banks.

An important component of visitor attraction will be the ability to reach the large numbers of people who stay on the Outer Banks and who seek experiences away from the crowds. The County Manager talks about “completing the loop” where travelers along the Outer Banks to Ocracoke catch a ferry to Swan Quarter and then proceed back to Manteo via Mattamuskeet (as well as Swan Quarter and Engelhard). The Lodge in this scenario assumes the role as a destination or anchor along the “Road Less Travelled.”

5. Increased levels of visitors will only generate positive economic impacts on Hyde County if there are opportunities for spending money locally.

Visitors expect to spend money on food and drinks, lodging, shopping, transportation, and recreation. The higher the quality of the visitor experience, the more they will spend. Data on tourism spending in 13 counties in northeastern coastal Carolina shows that Hyde County has already the second highest spending per capita of resident population, second only to Dare County. This indicates both current tourism orientation and potential for growth.

The peak visitor seasons for Hyde County are January-February for hunting, and July-August for summer fishing. Analysis of the 10 lodging properties shows that they are in total operating at only 32 percent of theoretical capacity, suggesting they can accommodate substantially more guests if they can offer the quality and type of lodging for out-of-season visitors. Investment in new tourism infrastructure, such as a mid-price hotel, although desirable, may be a long-term prospect, so a priority should be to support the incremental upgrading of existing accommodation and the development and marketing of additional bed & breakfast and self-catering options.

For every ten percent increase in tourism, spending \$600,000 could be injected into the county's economy creating 40 jobs, and increasing local taxes by \$167,000 and state taxes by \$147,000.

6. The renovation of the Lodge could be a catalyst for a variety of complementary entrepreneurial opportunities associated with increased visitation.

An important idea currently being developed is the use of Mattamuskeet Lodge as a brand for an entrepreneurial network that would assure quality standards and customer satisfaction for products and services offered by Hyde County businesses and entrepreneurs.

Possible entrepreneurial activities that would reinforce the purpose of the Lodge as a catalyst for the enjoyment and conservation of the region's natural and cultural resources might include guiding services, fishing and hunting equipment and supplies, recreation equipment rental (bicycles, kayaks, paddleboards), branded local foods (fresh and processed), lodging, campgrounds, convenience and gift shops, game processors, dog kennels, and laundry services.

There is already in place a system of business support centered on the County Office of Planning & Economic Development that extends to a network of local, regional, state and federal resources. Existing and emerging business ventures offer encouragement to the possibility of a strong entrepreneurial response to these opportunities.

ANALYSIS OF DATA AND RESEARCH: NARRATIVE

The History and Potential of the Mattamuskeet Lodge

The Lodge has a long and varied history¹ which makes it an important cultural asset for Hyde County, the region, and North Carolina. Interest in draining Lake Mattamuskeet went back almost 250 years with the aim of reclaiming land for farming — an early attempt to boost the economy of Hyde County. In the early twentieth century, plans were advanced to dredge 87 miles of navigable canals and build a steam-powered pumping plant to drain the lake to the Pamlico Sound. The pumping station was designed to move 1.2 million gallons per minute making it the largest capacity pumping station in the world. Although the lake was drained — on three occasions — the project was abandoned in 1932, and subsequently bought by the U.S. Government as a migratory waterfowl refuge.

After renovation and adaptation by the Civilian Conservation Corps, the pumping station reopened as the Mattamuskeet Lodge in 1937. For 35 years, Mattamuskeet was nationally renowned for Canada goose-hunting until this was banned by the U.S. Fish & Wildlife Service as the winter migratory goose population sharply fell. The Lodge closed in 1974 and remained so for 20 years. It was designated as an historic structure by the National Register of Historic Places in 1980, and over the next 36 years the Lodge was the object of much attention to raise funds for its restoration and to consider a range of potential futures. It was in use for a variety of accommodation, recreational, and educational activities until 2000 when it was condemned and declared unsafe for public use.

The ownership of the Lodge was transferred in 2006 from the Federal government to the State of North Carolina², which committed incremental funding to allow two phases of work to stabilize and repair the structure under the supervision of the North Carolina Division of Cultural Resources. Unfortunately, budgetary pressures led to a cessation of state funding and the planned renovation was not completed.

It is important, however, to recognize that for decades, volunteers have devoted many thousands of hours to raising funds, carrying out repairs, and maintaining interest in the future of the lodge. This sweat equity arguably gives the local community, and nonprofits such as the Mattamuskeet Foundation, the Friends of Mattamuskeet Lodge, and Partnership for the Sounds, a voice in what happens next.

A business management and tourism study was prepared for the North Carolina Wildlife Resources Commission in 2009³ when it was anticipated that the Commission would be the operator of the Lodge after full refurbishment. The Lodge was seen as a potential center for a wide range of recreational, educational, and tourism activities serving niche markets complementary to the aims of the National Wildlife Refuge, particularly in relation to fishing and hunting. Special attention was given to seeking the support and engagement of the local community.

Since then the emphasis has shifted somewhat with encouragement from state legislators to pursue a public-private partnership to complete the Lodge renovation and establish financially viable operations. The legal and financial structures required to achieve such a partnership are still being developed, but the essence will likely be state investment of about \$7.5 million for renovation works and an agreement with a private company to operate the Lodge as an ongoing business. Current proposals⁴ anticipate up to 14 en suite bedrooms, a commercial kitchen, a 110-seat restaurant and adjacent lounge, an exhibit area, an educational lab, and facilities for hunters, fishermen, and birdwatchers.

One vision for the Lodge is to emulate Honey Brake Lodge in Jonesville, Louisiana⁵, which is a high-end hunting, fishing, and outdoor recreation facility with an international reputation, where guests pay \$975 per day for lodging, meals, and access. A distinctive feature at Mattamuskeet would be to develop the Lodge as the hub of an entrepreneurial network, where local businesses and individuals could be accredited partners in the Mattamuskeet Brand, providing a range of complementary products and services⁶. There are no data on the local economic impact of the Honey Brake Lodge, but a 2013 study on wildlife tourism and the Gulf Coast economy⁷ pointed to the importance of guides and outfitters and their mutually beneficial relationships with lodging and dining establishments, and their combined impact on employment and visitor attraction.

An economic impact study of renovating the Mattamuskeet Lodge was conducted in 2015 by East Carolina University's Bureau of Business Research⁸. An investment of \$7.5 million in construction works, it was estimated, would create directly nearly 64 jobs in the short-term and a further 20 jobs through indirect and induced effects in the local economy. This would mean labor income of nearly \$2.2 million in direct wages, over \$323,000 in the supply chain, and nearly \$223,000 in additional household spending. Overall, the study estimated that the investment would lead to a \$9.9 million impact on the local economy, a multiplier of 1.32. Similar calculations were made for \$800,000 in furnishings, of which \$187,200 was assumed to be sourced locally. This would generate a further \$110,000 into the economy. In addition, the impact of lodging based on certain assumptions about occupancy rates over three years, would eventually create 20 direct jobs, and generate revenues of over \$2 million and a further boost of over \$900,000 into the economy.

The Local and Regional Context

Mattamuskeet Lodge is in Hyde County, one of the least populated⁹ and one of seven “completely rural” counties¹⁰ in North Carolina. Its 2015 population was 5,526, which was a decrease of 5.1 percent from 2000 — the state's population in the same period increased by 24.8 percent.

Hyde County is designated by the North Carolina Department of Commerce as a Tier One county, meaning “most distressed”¹¹ reflecting the county's high poverty rate of 23.4 percent (NC: 17.2 percent)¹², a low median household income of \$36,891, 79.2 percent of the state level¹³ and high unemployment of 8.9 percent (NC: 6.1 percent)¹⁴.

Although Hyde County is one of eight counties forming a commuting zone (298)¹⁵ with Greenville/Pitt County at its core, commuting flow data¹⁶ show that Hyde County has the closest economic connections with Beaufort County and Dare County (which is in a neighboring commuting zone (147)). Of those who are employed in Hyde County, half live outside the county — primarily in Washington and Belhaven in Beaufort County and Manteo in Dare County. Of the workforce who live in Hyde County, nearly 70 percent work in the county, while the other 30 percent work in Raleigh (Wake County), Greenville (Pitt County), Belhaven (Beaufort County), Manteo (Dare County), and Washington (Beaufort County). Work destinations in Hyde County are Swan Quarter, Ocracoke, Engelhard, and Fairfield.

Hyde County is one of 14 counties in the Northeast Coastal nonmetropolitan area as designated by the Bureau of Labor Statistics¹⁷. As of May 2015, this area had 96,460 employees across all occupations with an annual mean wage of \$35,210, just under 80 percent of the mean for North Carolina and 73 percent of the national mean. These relatively low wage levels are largely determined by the region's occupational structure, where four of the five top occupations, which together account for 45 percent of total employees, have annual mean wages substantially below the overall regional and statewide means and below their respective occupation annual means.

A 2016 analysis for the Northeastern Workforce Development Board¹⁸ estimated that ten industries provided 1,573 jobs in Hyde County, including 639 in state and local government, including elementary and secondary education. Agriculture (animal and crop production, including contract laborers) accounted for 553 jobs, seafood processing 88 jobs, and restaurants 154 jobs, with wholesale trade agents/brokers and real estate agent/brokers providing a further 139 jobs. In these estimates, total earnings amounted to over \$57.9 million, \$30.3 million from government jobs and \$27.6 million from private sector jobs.

A different perspective is provided by the U.S. Census County Business Patterns which showed in 2014 that there were 164 business establishments in Hyde County with a total of 858 employees and an annual payroll of \$25.7 million¹⁹. The top five business sectors (by annual payroll) were accommodation and food services (28 establishments and 157 employees), retail trade (37 establishments and 115 employees), wholesale trade (11 establishments and 72 employees), construction (22 establishments and 86 employees) and manufacturing (5 establishments and 64 employees). These five sectors accounted for 63 percent of establishments, 58 percent of employees, and 61 percent of annual payroll.

Tourism is an important but relatively undeveloped part of the Hyde County economy, compared with the main economic driver of agriculture with \$133.4 million in 2012 in crop and livestock sales²⁰, and with its neighbor Dare County. In 2015 tourism in Hyde County generated \$33.54 million in spending (73rd in the state) up by 1.1 percent from 2014, 380 jobs, \$6.61 million in payroll, \$1.59 million in state taxes, and \$1.82 million in local taxes²¹. Dare County which ranks fourth in the state for tourism spending at \$1.05 billion (up by 3.3 percent from 2014), generated 12,710 jobs, \$223 million in payroll, \$50.48 million in state taxes, and \$47.03 million in local taxes. A comparison of tourism spending per capita of the resident population in 13 northeastern coastal North Carolina counties shows that Hyde County ranks second, indicating a strong competitive tourism orientation.

A 2014 report by Western Carolina University estimated that “As a result of taxes generated by tourist spending in Hyde County, each of the 3,353 Hyde County households pay \$984 less in local and state taxes.”²²

The Visitor Attraction Context

A 2014 survey by the North Carolina Wildlife Resources Commission²³ of over 2,000 anglers at Lake Mattamuskeet found that 47 percent came from Hyde County and neighboring four counties (Dare, Beaufort, Tyrell, and Washington) and 53 percent from a total of 54 North Carolina counties and from 17 states outside North Carolina, primarily Virginia, but also Nebraska, West Virginia, Maryland, Pennsylvania and New York. Three-quarters (77.3 percent) of the out-of-state visits were in the summer months May through August, whereas in-state visits were concentrated in April and May.

Further data on Lake Mattamuskeet’s attractiveness comes from a 2006 survey by East Carolina University²⁴ of visitors to eight National Wildlife Refuge in North Carolina and Virginia, including Mattamuskeet, as well as Pocosin Lakes (Hyde, Tyrell, and Washington Counties) and Alligator River (Dare and Hyde Counties). Two-thirds (65.9 percent) of visitors to Mattamuskeet described themselves as tourists, for which nearly all (91.6 percent) visiting the refuge was the primary purpose of being in the region. The average travel distance from home was 174 miles, with 43 percent traveling over 100 miles. Average visitor spending at Mattamuskeet was \$76.62.

Calculations of economic impact of an estimated 86,000 visitors showed total expenditures directly related to the refuge visits of \$7.03 million and a further \$4.51 million in other expenditures while in the region.

In addition, the survey revealed that visitors to Mattamuskeet also visited Alligator River (60.2 percent), Pea Island (55.8 percent), Swan Quarter (50.4 percent), and Great Dismal Swamp (41.6 percent). Visitors to Roanoke River (69.6 percent), Pocosin Lakes (44.2 percent), Pea Island (30.9 percent), Mackay Island (26 percent) and Alligator River (25.7 percent) also visited Mattamuskeet. These combination visits indicate the potential for cross-marketing among the region's refuges.

A major 2015 report from the U.S. Fish & Wildlife Service calculated economic benefits to local communities of National Wildlife Refuges²⁵. A sample of 92 refuges across the United States were analyzed including 16 from the Southeast (Region 4), of which two are close to Mattamuskeet (which was not in the sample): Alligator River and Pocosin Lakes. This study is particularly helpful in distinguishing between three different types of visitor purpose: non-consumptive (photography, bird-watching), hunting, and fishing. The key findings are that for both refuges non-consumptive visits accounted for the clear majority of both residents and non-residents, and that expenditures per non-resident visitor were up to five or six times greater than for a resident visitor. Although expenditure per head was highest for hunting visits, particularly in Pocosin Lakes where big game accounted for 16.8 percent of visits, the relatively smaller numbers mean a much smaller economic impact than for non-consumptive visits.

The 2011 National Survey of Fishing, Hunting, and Wildlife-Associated Recreation²⁶ indicated that in North Carolina there was a modest growth in the number of anglers and wildlife watchers and their expenditures over the period 2001-2011 but a small decline in the number of hunters and their expenditures. 1.2 million resident anglers and 329,000 out-of-state anglers fished in North Carolina spending a total of \$1.5 billion in trip-related and equipment expenses equivalent to \$43 per day. 1.9 million residents and non-residents observed and photographed wildlife in the state spending \$930 million or \$40 per day. 259,000 in-state and 76,000 out-of-state hunters spent \$525 million or \$30 per day.

An indicator of the seasonal flows of visitors is provided by an analysis of occupancy rental income in Hyde County²⁷. Peak months are in January and February for the hunting season and in July and August for summer fishing.

There have been no forecasts of the additional visitation levels over and above the current levels estimated to be between 32,750 and 58,000 refuge visitors²⁸ that might be generated by a refurbished lodge. The 2009 study²⁹ referred to an annual average of 8,856 visitors to the Lodge over the five-year period 1996-2000 just before it was closed, but visitation levels to other eastern North Carolina tourism landmarks suggest considerable scope for growth. For instance, in 2015, 106,549 people climbed the Cape Hatteras lighthouse and 48,271 climbed the Bodie Island lighthouse³⁰; National Park Service counts³¹ showed 289,885 visitors to the Fort Raleigh National Historic Site and 437,184 to the Wright Brothers National Memorial.

The Economic and Business Development Context

Economic Development

As described earlier, Hyde County is characterized by many indicators of economic distress, which means that the retention and growth of businesses and jobs is a high priority at the County, Regional, State, and Federal levels. Of concern is the continuing loss of young people who leave and do not return because there are insufficient job and career opportunities.

There is a local infrastructure of economic development support, the effectiveness of which will be vital for maximizing the economic impact of the Lodge renovation. The main elements are:

Hyde County The County's Office of Planning & Economic Development provides local leadership in supporting business start-ups and expansions, and in highlighting emerging business opportunities in Hyde County. Following initial interviews with potential businesses, referrals are made to counsellors either at the Small Business and Technology Development Center (SBTDC) at Elizabeth City State University in Pasquotank County or at Beaufort County Community College in Washington. The County also provides funding for business investment up to \$300,000 through its Golden Leaf Foundation-supported revolving loan fund. The Office is well-networked with other economic development organizations and resources that can support Hyde County businesses and projects.

Hyde County Chamber of Commerce The Chamber, with approximately 100 members, promotes the commercial and civic interests of Hyde County, and organizes activities and events to showcase the County's visitor attractions.

Albemarle Commission The Albemarle Commission is a council of governments serving ten counties, including Hyde County, in northeast coastal North Carolina. Its functions include being the Area Agency on Aging, Rural Planning, Workforce Development (through the Northeastern Workforce Development Board), Economic Development, and Senior Nutrition.

The Commission has been recognized as an Economic Development District by the U.S. Economic Development Administration (EDA) and as such is responsible for coordinating the region's Comprehensive Economic Development Strategy (CEDS). It operates a revolving loan fund for the region's businesses supported by EDA, making loans of \$10,000 to \$100,000. The Commission is the lead organization for the *Balancing Nature and Commerce in Northeastern North Carolina* initiative to develop a regional ecotourism strategy in conjunction with the U.S. Fish & Wildlife Service, the National Park Service, and a number of public and nonprofit organizations and local community leaders.

There is also an array of regional, state and federal resources that can be accessed to support economic development in Hyde County³².

Business Development

There are several businesses that support both residents and visitors, such as restaurants, grocery stores, and lodging accommodations. Any expansion of visitation should be beneficial in sustaining and increasing their profitability. However, improving the quality and diversity of visitor experiences may help to raise overall economic performance of the County in terms of jobs, incomes, and investment. The following examples show the way.

- **Dare To Hyde Adventures** provides outdoor experiences for visitors to Hyde and Dare Counties. Wildlife viewing tours, hunting for black bear, deer, waterfowl, and turkeys, tours of historic sites, birding, photography, and charter fishing are part of the adventure menu. The company offers experienced guides, and has opened a motel and dining facility, Mattamuskeet Outpost, near the entrance to the lodge.

- **Mattie Arts** is a four-year old nonprofit that helps emerging artists in Hyde County. Its economic development contribution is the provision of arts and craft courses to both residents and visitors³³ and in the sale of art work. Mattie Arts' prominent location in the old Courthouse in Swan Quarter has made it a significant addition to tourism and cultural offerings in the county.
- **Pamlico Shores Produce** grows, packs, and ships potatoes, sweet Mattamuskeet onions, and green beans from its 20,000 sq. ft. processing and packing area in Swan Quarter³⁴. The rapid growth of the Farm-to-Table movement provides an incentive to diversify from large scale commodity growing and out-of-state shipping to supplying restaurants and high-end grocery stores across the state, an opportunity that the company is currently exploring. Connecting Hyde County in this way to markets in Charlotte and the Triangle will also raise the profile of the county and Mattamuskeet as a place to visit and explore.

DATA SOURCES AND ADDITIONAL INFORMATION

The Future of the Mattamuskeet Lodge

1. History of the Mattamuskeet Lodge

For a full description of the Lodge's history see:

- Forrest, L.C. (1999, 2000), *Lake Mattamuskeet: New Holland and Hyde County*. Charleston SC: Arcadia Publishing
- Appendices B and C to Anderson C.J., J. Carr & C. Kline (2008, rev. 2009), *Mattamuskeet Lodge: Business Management and Tourism Study*. NC State University Tourism Extension and NC Central University for North Carolina Wildlife Resources Commission.
- Powers, J.A. (1999), *Reviving the Past Glories of Mattamuskeet Lodge*, <http://www.ncgenweb.us/hyde/misc/JPOWERS1.HTM>
- U.S Department of the Interior, National Park Service, National Register of Historic Places, *Lake Mattamuskeet Pumping Station/Mattamuskeet Lodge*. Nomination Form. www.hpo.ncdcr.gov/nr/HY0003.pf (July 1979).

2. Lake Mattamuskeet Lodge Preservation Act

The Lodge and 6.5 acres of land were conveyed to the State of North Carolina by the Lake Mattamuskeet Lodge Preservation Act of 2006. This conveyance was for the purpose of "permitting the State to use the property as a public facility dedicated to the conservation of the natural and cultural resources of North Carolina." A condition of the conveyance was that the State would agree to restore and maintain the Lodge in accordance with the terms of the National Historic Protection Act.

3. Business Management and Tourism Study

Anderson C.J., J. Carr & C. Kline (2008, rev. 2009), *Mattamuskeet Lodge: Business Management and Tourism Study*. NC State University Tourism Extension and NC Central University for North Carolina Wildlife Resources Commission.

4. Current Proposals for the Lodge

Based on conversation with Mark Williard, Project Architect for the Lodge renovation, October 13, 2016.

5. Honey Brake Lodge

See www.honeybrake.com

6. Complementary Products and Services

There are potentially many products and services that could be provided that would be complementary to the development of the Lodge. These might include guiding services, fishing and hunting equipment and supplies, recreation equipment rental (bicycles, kayaks, paddleboards), food and lodging, campgrounds, convenience and gift shops, game processors, branded local foods (fresh and processed), dog kennels, and laundry services.

7. Wildlife Tourism

Stokes S. & Lowe M. (2013), *Wildlife Tourism and the Gulf Coast Economy*. Datu Research for Environmental Defense Fund. This study identified 1,104 businesses in Alabama, Florida, Louisiana, Mississippi, and Texas, which provided guide and outfitter services for fishing, wildlife watching, and hunting. From a sample survey of 100 of these businesses showed that 86 percent were small businesses with five employees or fewer, and over half (58 percent) had over 200 clients. The survey revealed a network of over 12,000 guide, lodging and dining establishments working together to generate business for one another.

8. Lodge Economic Impact

East Carolina University's Bureau of Business Research, *Mattamuskeet Lodge Impact Study*, March 15, 2016. This was commissioned by Hyde County NC. The local economy for the purposes of this analysis was defined as Hyde County together with the neighboring counties of Beaufort, Dare, Tyrell, and Washington.

The Local and Regional Economic Context

9. Population

According to the U.S. Census, Hyde County in 2015 had a population of 5,526, the second least populated county in North Carolina (the least being its neighbor to the north, Tyrell County) and has the lowest density of population in the state. The 2000 population was 5,826 and has since fallen by 5.1 percent as the population of the state grew by 24.8 percent in the same period. (www.census.gov)

10. Rurality

Hyde County, along with Tyrell County, is classified by the Economic Research Service (U.S. Department of Agriculture) in its Rural-Urban Continuum Code as level 9, “completely rural or less than 2,500 urban population and not adjacent to a metropolitan area”. Hyde County is one of seven so classified in North Carolina. (www.ers.usda.gov)

11. Tiers

Hyde County is designated by the North Carolina Department of Commerce as a Tier 1 County. The department annually ranks the state’s 100 counties based on economic well-being and assigns each a Tier designation. The 40 most distressed counties are designated as Tier 1, based on average unemployment rate, median household income, percentage growth in population, and adjusted property tax base per capita. (www.nccommerce.com)

12. Poverty

According to the Economic Research Service, the 2014 poverty level in Hyde County was 23.4 percent compared with the level in North Carolina of 17.2 percent. (www.ers.usda.gov)

13. Household Income

The median household income for Hyde County in 2014 was \$36,891 compared with \$46,596 for the state and \$53,482 for the United States, per the U.S. Census Bureau’s Small Area Income & Poverty Estimates. (www.census.gov)

14. Unemployment

The unemployment level in Hyde County in 2014 was 8.9 percent compared with 6.1 percent for the state per the Bureau of Labor Statistics’ Local Area Unemployment Statistics. (www.bls.gov)

15. Commuting Zones

Hyde County is one of eight counties in Commuting Zone 298 as defined by the Economic Research Service – the others being Beaufort, Greene, Lenoir, Martin, Pitt, Tyrell, and Washington. This implies an economic connection within a region centered on Pitt County and Greenville MSA. The total population of the commuting zone is 348,071 of which half is located within Pitt County. Hyde County’s population accounts for 1.6 percent of the total. (www.ers.usda.gov)

16. Commuting Flows

U.S. Census data shows a more limited pattern of commuting flows. (<http://onthemap.census.gov>)

17. Occupations

The Bureau of Labor Statistics provides occupational and wages data for regions in North Carolina. Hyde County is one of 14 counties comprising the Northeast Coastal nonmetropolitan area. Table 1 shows employment levels and annual mean wages for the top five occupations (by number of employees) in this region. (www.bls.gov)

Table 1: Top Five Occupations in Northeast Coastal North Carolina

Occupation	Employment	%	Annual Mean Wage (AMW) \$	AMW % Region	AMW % NC AMW	AMW % NC Occupation AMW
Office and administrative support	14,060	14.6	30,400	86.3	68.8	92.0
Food preparation and serving related	11,050	11.5	19,830	56.3	44.9	96.3
Sales and related	10,650	11.0	28,560	81.1	64.7	74.0
Transportation and material handling	7,620	7.9	29,580	84.0	67.0	94.0
Education, training, and library	7260	7.5	37,570	106.7	85.1	79.0
All occupations	96,040	100.0	35,210	100.0	79.7	79.7

18. Top Ten Industries in Hyde County

Emsi (October 2016) *Highest Ranked Industries; Top 10 Industries (6-digit) in Hyde County, NC: Emsi Q3 2016 Data Set*. Northeastern Workforce Development Board.

19. Business Structure

According to the U.S. Census, County Business Patterns, (www.census.gov/programs-surveys/cbp.html), the structure of the 164 business establishments in Hyde County in 2014 by two-digit NAICS codes was as shown in Table 2.

Table 2: Business Structure of Hyde County NC (2014)

Sector (NAICS 2-digit)	Establishments	%	Employees	%	Ann. Payroll \$	%
Accommodation and food services	28	17.0	157	18.3	4,946,000	19.2
Retail trade	37	22.6	115	13.4	3,333,000	13.0
Wholesale trade	11	6.7	72	8.4	2,671,000	10.4
Construction	22	13.4	86	10.0	2,415,000	9.4
Manufacturing	5	3.0	64	7.5	2,295,000	8.9
Real estate, rental and leasing	9	5.5	51	5.9	1,312,000	5.1
Transportation and warehousing	8	4.9	20	2.3	617,000	2.4
Agriculture, forestry, fishing and hunting	3	1.8			383,000	1.5
Other services	7	4.3			282,000	1.1
Health care and social assistance	9	5.5				
Finance and insurance	8	4.9				
Professional, scientific, technical services	5	3.0				
Arts, entertainment and recreation	5	3.0	293	34.1		
Information	3	1.8			7,454,000	29.0
Utilities	2	1.2				
Educational services	1	0.6				
Administrative, support/waste management	1	0.6				
TOTAL	164	100.0	858	100.0	25,708,000	100.0

20. Agriculture in Hyde County

U.S. Department of Agriculture, National Agricultural Statistics Service, *2012 Census of Agriculture, County Profile, Hyde County, North Carolina*

21. Tourism

Estimates of tourism expenditures by county are prepared annually by the U.S Travel Association's Travel Economic Impact Model. (<https://partners.visitnc.com/economic-impact-studies>). Table 3 shows a ranking of tourism spending per resident by northeastern North Carolina counties.

Table 3: Ranking of tourism spending per resident by northeastern North Carolina counties

	County	Population	Spending \$	Spending \$ per cap
1	Dare	35,663	953,040,000	26,723
2	Hyde	5,526	32,360,000	5,856
3	Currituck	25,263	137,710,000	5,451
4	Carteret	68,879	302,770,000	4,396
5	Beaufort	47,651	70,900,000	1,488
6	Pasquotank	39,829	55,040,000	1,382
7	Chowan	14,394	18,720,000	1,301
8	Pamlico	12,781	16,240,000	1,271
9	Washington	12,385	14,360,000	1,159
10	Tyrrell	4,070	3,460,000	850
11	Perquimans	13,440	9,830,000	731
12	Gates	11,431	6,020,000	527
13	Camden	10,309	1,920,000	186

22. Tourism Tax Benefits to Hyde County

Morse, S. (2014) *Hyde County, NC 2014 Tourism Economic Fact Sheet*. West Carolina University

The Visitor Attraction Context

23. Angler Survey

The survey of 853 angling parties consisting of 2,055 individuals was conducted in March through October 2014 for the National Wildlife Resources Commission. The report was published as: Dockendorf K.J., K.M. Potoka, & C.D. Thomas (2015), *Lake Mattamuskeet Creel Survey, 2014*. National Wildlife Resources Commission.

24. National Wildlife Refuge Visitor Survey

The survey of visitors to eight National Wildlife Refuges in North Carolina and Virginia was conducted over the period October 2004 through October 2005, and the results were published as: Vogelsong, H. (2006), *East North Carolina National Wildlife Refuge Visitor*

Use Study. East Carolina University Department of Recreation & Leisure Studies. The survey yielded information on visitor demographics and economic impact. Some highlights from the survey were:

- The average age of refuge visitors was 51.44 years.
- Mean household income was over \$50,000 with over a third over \$75,000 (Mattamuskeet, 35.8 percent).
- Mattamuskeet attracted the most diverse population with 13.5 percent African American (4.8 percent overall).
- Although overall 60 percent (59.8 percent) overall had at least a college degree, Mattamuskeet attracted less well educated visitors with only 40.6 percent with a college degree.
- Visitor groups averaged 2.86 people at Mattamuskeet (2.89 overall) with most (61.2 percent) arriving alone or in twos, and 30 percent in groups of three to five. They arrived in average of 1.23 vehicles.
- 65.9 percent of visitors to Mattamuskeet described themselves as tourists, of which 91.6 percent said that visiting the refuge was the primary purpose for being in the region. Mattamuskeet visitors made 15 visits per year, one of the highest in the survey. The average travel distance from home was 174 miles with 42.8 percent traveling over 100 miles.
- Average visitor spending per travel party directly related to visiting the refuge for Mattamuskeet was \$174.46 compared with \$150.06 for all 8 sites.

Table 4 provides information on spending directly related to a visit to Mattamuskeet, as well as other spending on the same trip.

Table 4: Visitor Spending at Mattamuskeet NWR

Spending Category	Mattamuskeet Directly-related (\$)	Mattamuskeet Other (\$)	All Eight Sites Directly-related (\$)	All Eight Sites Other (\$)
Program and Permit fees	18.71	9.13	9.38	5.25
Food and drinks	40.27	27.91	28.00	63.43
Shopping	7.11	7.40	9.87	28.17
Lodging	50.80	24.35	58.71	126.31
Transportation	39.22	21.14	28.34	48.01
Entertainment and Recreation	8.15	11.99	7.92	15.12
Other Expenses	10.19	5.12	7.83	9.27
Mean	\$174.46	\$107.04	\$150.06	\$295.56

The total number of visitors for all eight refuges was 1,512,346, generating total direct expenditures related to the refuge visits of \$166.61 million (2006 dollars). These together with estimated indirect and induced expenditures created 4,718 jobs. Expenditures not directly related to refuge visits totaled a further \$324.62 million and created 9,573 jobs.

Table 5 summarizes the estimated economic impacts (using IMPLAN) for the three Hyde County refuges:

Table 5a: Economic Impacts of Three Refuges in Hyde County, NC

Refuge	Average Per Person Spending \$			Total Annual Visitation	Total Direct Expenditures \$2006 m		
	Direct	Other	Ratio		Direct	Other	Ratio
Mattamuskeet	76.62	49.15	1.6:1	86,000	7.03	4.51	1.6:1
Alligator River	84.21	251.74	1:3.0	35,000	3.15	9.41	1:3.0
Pocosin Lakes	35.21	102.15	1:2.9	65,800	2.47	7.17	1:2.9
Total Survey	75.67	132.05	1:1.7	1,512,346	166.61	324.62	1:1.9

Table 5b: Economic Impacts of Three Refuges in Hyde County, NC

Refuge	Refuge-Related Expenditure Impact			Other Expenditure Impact		
	Indirect (\$m)	Induced (\$m)	Jobs	Indirect (\$m)	Induced (\$m)	Jobs
Mattamuskeet						
Alligator River						
Pocosin Lakes						
Total Survey	30.36	35.40	4,718	54.03	69.67	9,573

25. Economic Impact of Wildlife Refuges

A major study commissioned by the U.S. Fish and Wildlife Service calculated the economic benefits to local communities that visitors to National Wildlife Refuges bring. The study focused on final demand, employment, income, and tax revenue effects generated by these visitors. It was published as Carver E. & J. Caudill (2013), *Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Visitation*. U.S Fish & Wildlife Service. A sample of 92 refuges was studied, which included Alligator River and Pocosin Lakes. The findings relating to these is summarized in Table 6:

Table 6: Visitor Numbers and Expenditures for Alligator River and Pocosin Lakes NWR

Residents								
Refuge	Non-consumptive	Hunting	Fishing	Total	Final Demand	Jobs	Job Income	Total Tax Revenues
Alligator River	#	23,237	2,044	2,100	27,381	3		
	\$000	173.7	20.3	15.8	209.8	298.2	96.7	46.1
Pocosin Lakes	#	25,080	2,275	490	27,845	4		
	\$000	164.4	63.0	4.9	232.3	269.5	81.5	38.4
Non-residents								
Refuge	Non-consumptive	Hunting	Fishing	Total	Final Demand	Jobs	Job Income	Total Tax Revenues
Alligator River	#	23,001	511	900	24,412			
	\$000	1,099.1	15.3	15.4	1,129.7	1,525.1	14	470.3
Pocosin Lakes	#	35,020	7,075	210	42,035			
	\$000	1,151.4	600.3	4.8	1,756.5	1,911.6	21	582.8

Alligator River and Pocosin Lakes were both allocated to an economic area that included Hyde County. All data is 2011. The main points are:

26. Alligator River

- Non-consumptive visits represented 84.9 percent of resident visitors and 94.2 percent of non-resident visitors. Of resident visitors, hunting accounted for 7.5 percent and fishing 7.7 percent; of non-resident visitors, hunting accounted for 2.1 percent and fishing 3.7 percent.
- Residents generated \$96,700 in job income and \$46,100 in tax revenues compared with \$470,300 in job income and \$128,200 in tax revenues generated by non-residents. The additional economic value of the refuge was \$899,500, a \$0.31 economic effect for every \$1 budget expenditure.

27. Pocosin Lakes

- Non-consumptive visits represented 90.1 percent of resident visitors and 83.3 percent of non-resident visitors. Of resident visitors, hunting accounted for 8.2 percent and fishing 1.8 percent; of non-resident visitors, hunting (big game) accounted for 16.8 percent and fishing 0.5 percent.
- Residents generated \$81,500 in job income and \$38,400 in tax revenues compared with \$582,800 in job income and \$272,600 in tax revenues generated by non-residents. The additional economic value of the refuge was \$1,347,000, a \$2.32 economic effect for every \$1 budget expenditure.

Table 7 shows expenditures per visitor to the two refuges comparing activities and whether resident or non-resident:

Table 7: Per Capita Visitor Expenditures by Origin for Alligator River and Pocosin Lakes NWR

NWR	Activity	Resident \$	Non-resident \$	NR/R
Alligator River	Non-consumptive	7.47	47.78	6.4
	Hunting	9.93	29.94	3.0
	Fishing	7.52	17.11	2.3
Pocosin Lakes	Non-consumptive	6.50	32.88	5.1
	Hunting	27.60	84.85	3.1
	Fishing	10.00	22.86	2.3

28. USFWS National Survey

Every five years, the U.S. Fish and Wildlife Service conducts a major national survey of potential anglers, hunters, and wildlife watchers. The latest was carried out in 2011 and the North Carolina edition was published as: U.S Fish and Wildlife Service and U.S Census Bureau (2014), *2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation — North Carolina*.

29. Occupancy Rental Income

Data generated by the Hyde County Finance Department (October 27, 2016) for the period July 2015 to June 2016 showed that there were ten properties offering lodging accommodation. Of these, three account for 82 percent of the income, and one 41 percent. The peak months are January and February, which account for 31 percent of the total income, the next most popular being July and August, which account for 21 percent. January and July are the two months when eight out of the ten properties were generating rental income; in

November and March-May only four out of ten have any rental income. A calculation of theoretical capacity was made based on the maximum monthly rental income for each property and extrapolated over 12 months. This showed that the actual \$276,885 rental income represented 32 percent of the theoretical maximum of \$863,748.

30. Visitor Estimates

Estimates of visitors to Mattamuskeet Lodge for 2015-2016 totaled 32,750 (provided by Refuge Director, November 2, 2016). Table 8 shows the breakdown of visitor activities. This compares with the estimate by the U.S Fish & Wildlife Service of 58,000 from Mattamuskeet: About the Refuge on its website at <https://www.fws.gov/refuge/Mattamuskeet/about.html> and with the estimate of 86,000 from Vogelsong, H. (2006), *East North Carolina National Wildlife Refuge Visitor Use Study*. East Carolina University Department of Recreation & Leisure Studies.

Table 8: Visitation at Mattamuskeet NWR, October 1 2015 — September 30, 2016

Category	Visitors	%
Wildlife Observation Visits	8,250	25.2
Fishing Visits	7,000	21.4
Auto Tour Visits	4,500	13.7
Visitor Center Visits	3,500	10.7
Foot/Trail Pedestrian Visits	3,000	9.2
Photography Visits	3,000	9.2
Hunting Visits	1,150	3.5
Special Events Participation	1,000	3.1
Boating Launches	500	1.5
Interpretive Program Participation	400	1.2
Bicycle Tours	250	0.8
General Recreational Visits	200	0.6
Total	32,750	100.0

31. Anderson C.J., J. Carr & C. Kline (2008, rev. 2009), *Mattamuskeet Lodge: Business Management and Tourism Study*. NC State University Tourism Extension and NC Central University for North Carolina Wildlife Resources Commission.
32. From Outer Banks of North Carolina, www.outerbanks.org
33. From <https://irma.nps.gov/stats>
34. **Economic Development Resources for Hyde County**
The following is a summary of the main economic development resources that can be accessed for Hyde County businesses and projects.

35. Albemarle Commission

Further information on the Commission and the Comprehensive Economic Development Strategy can be found at www.albemarlecommission.org.

36. NC East Alliance www.nceast.org

The NCEast Alliance is a regional, private, nonprofit economic development agency serving Coastal Carolina and located in Greenville. Its focus is on marketing and business attraction, workforce development and education, and regional advocacy. The Alliance identifies potential relocation and expansion opportunities working with counties across the region, including Hyde County.

37. NC Department of Commerce Rural Division www.nccommerce.com/ruraldevelopment

The Rural Division has several grant programs and planning services to assist rural communities. The Economic Infrastructure Program provides grants to local governments for infrastructure projects (water, sewers, natural gas, broadband, access roads) that support economic development; the Building Reuse Program provides grants to local governments for the renovation of vacant buildings and renovation and expansion of business premises.

38. The Rural Center www.ncruralcenter.org

The Rural Center, based in Raleigh NC, serves the state's 80 rural counties, offering a range of leadership, entrepreneurship training, and microenterprise loan programs.

39. NC Economic Development Partnership <https://edpnc.com>

The Partnership is a public-private partnership that contracts with the North Carolina Department of Commerce to recruit new businesses to the state, support existing businesses, connect exporters to global markets, help start-up businesses, and attract tourists and visitors. It provides a range of incentives, grants, research and other services.

40. USDA Rural Development www.rd.usda.gov/nc

The U.S. Department of Agriculture's Rural Division through its North Carolina office provides a range of loan guarantees, grants, loans, and microloans for rural economic development, value-added agriculture, energy, housing, and community facilities. Hyde County works with the area office in Kinston, NC.

41. Mattie Arts

According to information supplied by Mattie Arts Director, Judy Mclawhorn (October 25, 2016), the center in 2016 provided 27 classes (e.g. drawing, decoy carving, etching, stained glass, metal smithing) for 163 students. Since the Center opened in October 2012, it has paid out nearly \$30,000 to local artists and instructors. <http://mattieartscenter.org>

**42. Pamlico Shores Produce
www.pamlicoshores.com**

References

Anderson C.J., J. Carr & C. Kline (2008, rev. 2009), *Mattamuskeet Lodge: Business Management and Tourism Study*. NC State University Tourism Extension and NC Central University for North Carolina Wildlife Resources Commission.

Carver E. & J. Caudill (2013), *Banking on Nature: The Economic Benefits to Local Communities of National Wildlife Visitation*. U.S Fish & Wildlife Service.

Dockendorf K.J., K.M. Potoka, & C.D. Thomas (2015), *Lake Mattamuskeet Creel Survey, 2014*. National Wildlife Resources Commission.

East Carolina University's Bureau of Business Research, *Mattamuskeet Lodge Impact Study*, March 15, 2016.

Emsi (October 2016) Highest Ranked Industries; *Top 10 Industries (6-digit) in Hyde County, NC: Emsi Q3 2016 Data Set*. Northeastern Workforce Development Board.

Forrest, L.C. (1999, 2000), *Lake Mattamuskeet: New Holland and Hyde County*. Charleston SC: Arcadia Publishing.

Morse, S. (2014) *Hyde County, NC 2014 Tourism Economic Fact Sheet*. West Carolina University.

Powers, J.A. (1999), *Reviving the Past Glories of Mattamuskeet Lodge*, <http://www.ncgenweb.us/hyde/misc/JPOWERS1.HTM>

Stokes S. & Lowe M. (2013), *Wildlife Tourism and the Gulf Coast Economy*. Datu Research for Environmental Defense Fund.

U.S Department of the Interior, National Park Service, National Register of Historic Places, *Lake Mattamuskeet Pumping Station/Mattamuskeet Lodge*. Nomination Form. www.hpo.ncdcr.gov/nr/HY0003.pf (July 1979).

U.S Fish and Wildlife Service and U.S Census Bureau (2014), *2011 National Survey of Fishing, Hunting and Wildlife-Associated Recreation – North Carolina*.

Vogelsong, H. (2006), *East North Carolina National Wildlife Refuge Visitor Use Study*. East Carolina University Department of Recreation & Leisure Studies.

APPENDIX B

MATTAMUSKEET LODGE REPAIR & RENOVATION

5-Dec-16

DIVISION 1- GENERAL CONDCTIONS / SUPERVISION						
DIV.	ITEM	UNIT COST	UNIT	QTY	TOTAL COST	SOURCE
	PROJECT SUPERINTENDENT	6,510	MO	10.00	65100	
	ASSISTANT SUPERINTENDENT	4,340	MO	10.00	43400	
	PROJECT MANAGER	7,812	MO	5.00	39060	PM @ 50% Utilization
	SR PROJECT MANAGER	1,042	MO	10.00	10416	
	CLEAN-UP LABOR	3,906	MO	10.00	39060	
	PROJECT ENGINEER	3,906	MO	0.00	0	
						REDUCED TO 10 MO PROJECT
	PROJECT MANAGER VEHICLE	1,280	MO	10.00	12800	
	SUPERINTENDENT'S VEHICLE	1,280	MO	10.00	12800	
	ASST SUPERINTENDENT TRANSPORTATION	1,000	MO	10.00	10000	
	SAFETY EQUIPMENT/OSHA COMPLIANCE	500	MO	10.00	5000	
	TEMPORARY FENCE					
	DUMPSTER COST	2,000	MO	10.00	20000	
	OFFICE TRAILER	700	MO	10.00	7000	
	OFFICE EQUIPMENT & SUPPLIES	300	MO	10.00	3000	
	TEMPORARY POWER	400	MO	10.00	4000	
	TEMPORARY TOILETS	300	MO	10.00	3000	
	TELEPHONE	500	MO	10.00	5000	
	OUT-OF-TOWN PER DIEM	2,400	MO	10.00	24000	
	FORKLIFT/ BOBCAT	2,000	MO	10.00	20000	
	SMALL TOOLS ALLOWANCE	350	MO	10.00	3,500.00	
	PROJECT PHOTOGRAPHY	0	LS	1.00	0	Delete photography contract
	SHOP DRAWINGS	3,000	LS	1.00	3000	
	LABOR BURDEN (29%)				57,140.44	
	DIVISION 1 TOTAL:				387,276.44	
DIVISION 2A- SELECTIVE DEMOLITION						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
01732	SELECTIVE DEMOLITION					
	CONCRETE SLABS	18.50	SF	1,350	24,975.00	
	H.W. FLOORING	1.40	SF	1,250	1,750.00	
	STUD WALLS	3.75	SF	1,680	6,300.00	
	MASONRY WALL CUTOUT	9.00	CF	250	2,250.00	
	LEAD ABATEMENT ALLOWANCE				150,000.00	
	DIVISION 2A TOTAL:				\$185,275.00	
DIVISION 2B: SITE WORK						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	UPGRADE SEWER SYSTEM ON US F&W PROPERTY				353,425.00	BARRY KING - ALTERN 2
02030	SUBSURFACE EXPLORATION		LS		15,000.00	
	SEWER MANHOLE				6,500.00	
02510	WATER DISTRIBUTION (2" WATER LINE + TRENCH)	8.00	LF	760	6,080.00	
02515	FIRE WATER SERVICE PIPING (6" FIRE LINE + TRENCH)	23.00	LF	524	12,052.00	
02530	SEWER COLLECTION SYSTEM (6" SEWER SERV. + TRENCH)	14.50	LF	120	1,740.00	
02620	SUBSURFACE DRAINAGE	8.00	LF	182	1,456.00	
02741	ASPHALT PAVING (W/ BASE)	15.30	SY	1,000	15,300.00	REDUCE FROM 4206 SY
02751	CONCRETE PAVING (W/ BASE)	42.50	SY	789	33,527.78	
	STRIPING	0.25	LF	792	198.00	
	HC STALL (PAINTING + SIGNAGE)	115.80	EA	4	463.20	
	BOLLARDS	235.00	EA	3	705.00	
	BIKE RACK	300.00	EA	4	1,200.00	
	DUMPSTER ENCLOSURE	1,200.00	EA	1	1,200.00	
02840	WHEEL STOPS	40.00	EA	13	520.00	
02900	LANDSCAPING + EARTHWORK	80.00	SY	1,000	80,000.00	ELIM NEW PARKING LOT
	DIVISION 2B TOTAL:				\$529,366.98	
DIVISION 3: CONCRETE						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
03000	EXTERIOR STAIRS AND RETAINING WALLS	1.00	LS	22,207	22,207.00	Central Concrete
03310	FIRE PAD / WATER TANK PAD	1.00	LS	14,550	14,550.00	Central Concrete
03310	INTERIOR CONCRETE	1.00	LS	49,465	49,465.00	Central Concrete
						8301594
	DIVISION 3 TOTAL:				\$86,222.00	5712513
						14014107
DIVISION 4: MASONRY RESTORATION AND WATERPROOFING						

DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
4200	ELIM ELEVATOR SHAFT MINI PILES AND WATERPROOFING	1.00	LS	40,000	40,000.00	LIFT IN LIEU @ FIRST FLOOR
4200	PATCH HOLES IN LEVEE WALLS	1.00	LS	2,940	2,940.00	Carolina Restoration
	DIVISION 4 TOTAL:				42,940.00	

DIVISION 4B & 5: TOWER RESTORATION

DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	CRANE REMOVAL/REINSTALL TOWER CAB	1.00	LS	150,000	150,000.00	HodgesWelding / Edwards Crane
	DOOR LINTELS	15.00	EA	375	5,625.00	HodgesWelding
	MISC STEEL	1.00	LS	10,700	10,700.00	HodgesWelding
	CABLE RAIL SYSTEM	1.00	LS	37,340	37,340.00	HodgesWelding
	SINGLE RAIL	1.00	LS	4,575	4,575.00	HodgesWelding
	SHOP DRAWINGS	1.00	LS	7,000	7,000.00	HodgesWelding
	DELIVERY	1.00	LS	2,000	2,000.00	HodgesWelding
	TOWER CAB RESTORATION	1.00	LS	80,000	80,000.00	HodgesWelding
	SPIRAL STAIR REMOVAL, RESTORATION, AND REINSTALLATION	56.00	RISER	230	12,880.00	HodgesWelding
	TRAVEL & PER DIEM EXPENSES	1.00	LS	4,200	4,200.00	HodgesWelding
	SALES TAX	1.00		4,923	4,923.00	HodgesWelding
	TOWER EXTERIOR CARBON FIBER AND COATINGS	1.00	LS	170,794	170,794.00	Carolina Restoration
	TOWER INTERIOR RESTORATION	1.00	LS	66,074	66,074.00	Carolina Restoration
	MISC PREP	1.00	LS	20,000	20,000.00	WSC
	DIVISION 4B & 5 TOTAL:				576,111.00	

DIVISION 6: WOOD

DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
06110	NEW STUD WALLS	2.50	SF	6,971	17,427.50	
06220	WOOD MOLDINGS	7.50	LF	5,070	38,021.25	
06240	LAMINATE COUNTERTOPS	26.00	LF	50	1,300.00	
06410	MILLWORK -REFURBISH (BENCHES, STAIRS, CASEWORK)	1.00	LS		25,000.00	
06410	BUILT-IN DRESSERS -REFURBISH	400.00	EA	9	3,600.00	
06410	BUILT-IN DRESSERS -NEW TO MATCH	660.00	EA	3	1,980.00	
06410	NEW CASEWORK	500.00	EA	2	1,000.00	
	4' BASE CABINET	350.00	EA	5	1,750.00	
	4' UPPER CABINET (30")	298.00	EA	5	1,490.00	
	4' UPPER CABINET (18")	195.00	EA	1	195.00	
	2' FULL-HEIGHT CABINET	405.00	EA	1	405.00	
06430	NEW WOOD STAIRS	2,800.00	EA	3	8,400.00	
	DIVISION 6 TOTAL:				\$100,568.75	

DIVISION 7: THERMAL & MOISTURE PROTECTION

DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
07210	SPRAY FOAM INSULATION	5.00	SF	11,330	56,650.00	
07220	1/2" PLYWOOD, 1" RIGID INSUL, 1/2" GWB PLATFORM	4.50	SF	8,100	36,450.00	
07310	ICE / WATER SHEILD	2.00	SF	13,350	26,700.00	
07321	CLAY ROOF TILES					
	REMOVAL (BASE BID: FOR RECYCLING)	2.00	SF	13,350	26,700.00	
	INSTALLATION	400.00	SQS	134	53,400.00	
	MATERIALS (BASE BID: NEW ROOF)	2,000.00	SQS	134	267,000.00	
07620	METAL ROOF -FLAT SEAM COPPER	1,600.00	SQS	6	9,280.00	
07620	COPPER FLASHING	12.00	SF	550	6,600.00	
07620	COPPER GUTTERS / DOWNSPOUTS					
	DOWNSPOUTS	15.00	LF	165	2,475.00	
	ACCESSORIES (STRAINERS, LEADER HEADS, END CAPS)	1.00	LS		600.00	
	GUTTERS W/ BRACKETS	25.00	LF	200	5,000.00	
	DIVISION 7 TOTAL:				\$490,855.00	

DIVISION 8: DOORS & WINDOWS

DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
08110	STEEL DOORS & FRAMES					
	NEW 6 3/4" HM MASONRY FRAME -PR	350.00	EA	1	350.00	
	NEW 5 3/4" HM MASONRY FRAME -SINGLE	300.00	EA	7	2,100.00	
	NEW 5 3/4" HM MASONRY FRAME -PR	400.00	EA	2	800.00	
	NEW 5" THROAT STUDWALL HM FRAME -PR	150.00	EA	1	150.00	
	NEW STEEL DOORS	375.00	EA	17	6,375.00	
08210	WOOD DOORS & FRAMES					
	NEW SOLID WOOD DOORS	600.00	EA	28	16,800.00	
	NEW SOLID/GLAZED WOOD DOORS	500.00	EA	8	4,000.00	
	NEW WOOD FRAMES	350.00	EA	33	11,550.00	
	REFURBISHED WOOD DOORS & FRAMES	500.00	EA	64	32,000.00	
08510	STEEL WINDOWS -HISTORIC PROFILE	600.00	EA	6	3,600.00	
08510	ALUMINUM FRAME LAMINATED GLASS INTERIOR WINDOWS	500.00	EA	5	2,500.00	

06510	1-HR RATED MTL FRAME INTERIOR WINDOW	600.00	EA	1	600.00	
086515	INTERIOR WOOD WINDOW -REFURB	150.00	EA	1	150.00	
	INTERIOR WOOD WINDOW -TO MATCH HISTORIC	400.00	EA	1	400.00	
08710	DOOR HARDWARE					
	NEW HARDWARE - EXTERIOR	950.00	EA	5	4,750.00	
	NEW HARDWARE -INTERIOR	550.00	EA	50	27,500.00	
	REFURBISHED HARDWARE	585.00	EA	83	48,555.00	
08910	SMOKE CURTAIN	120.00	SF	318	38,160.00	
08910	GLAZED STOREFRONT SYSTEM/MISC WINDOWS	1.00	LS	72,000	65,000.00	
	DIVISION 8 TOTAL:				\$265,340.00	
DIVISION 9: FINISHES						

DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
09240	VENEER PLASTER ON 5/8 BLUEBOARD	5.00	SF	50,695	253,475.00	Increased for real plaster
09250	GYPSUM BOARD					
	CEILING (1/2")	1.50	SF	1,078	1,617.00	
	CEILING (1/2" X-TYPE)	2.00	SF	4,153	8,306.00	
	CEILING (1/2" MOLD-RESISTANT)	2.00	SF	265	530.00	
	CEILING (1-HR ICBO 3579 ASSEMBLY)	3.50	SF	810	2,835.00	
	CEILING (1/2" SUSPENDED SYSTEM)	5.50	SF	5,814	31,977.00	
	CEILING (1/2" MOLD-RESISTANT SUSPENDED SYSTEM)	2.70	SF	1,295	3,496.50	48,761.50
09310	CERAMIC TILE					
	FLOOR (MOAIC)	16.00	SF	7,442	119,072.00	
	FLOOR (1" SQUARE)	9.00	SF	1,210	10,890.00	
	FLOOR (1" HEX)	10.00	SF	745	7,450.00	
	BASE (COVE)	11.60	LF	965	11,194.00	
	WALL (JANITOR)	11.00	SF	25	275.00	
	WALL (PUBLIC)	16.00	SF	630	10,080.00	
	WALL (GUEST SHOWER)	18.00	SF	840	15,120.00	
	WALL (GUEST)	18.00	SF	810	14,580.00	
09547	SUSPENDED LINEAR METAL CEILING	12.00	SF	482	5,784.00	
09640	REFINISH WOOD FLOORS (& NEW MOLDING)	4.50	SF	8,500	38,250.00	
	EXTERIOR PAINT -TOWER, HIGH-PERFORMANCE				0.00	PRICE INCLUDED IN DIV 4B
09912	INTERIOR PAINT					
	DOOR, EXTERIOR HIGH-PERFORMANCE	200.00	EA	11	2,200.00	
	TOTAL WALL SURFACE AREA	1.75	SF	50,695	88,716.25	
	CEILING	0.90	SF	14,675	13,207.50	
09931	WOOD STAINS & TRANSPARENT FINISHES		LS		20000	
	DIVISION 9 TOTAL:				\$659,055.25	
DIVISION 10: SPECIALTIES						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
10100	TV / PHONE / ETC.	1,000.00	RM	13	13,000.00	
10150	TOILET PARTITIONS					
	SOLID PLASTIC, STD	1,325.00	EA	8	10,600.00	
	SOLID PLASTIC, HC (W/ GRAB BARS)	1,640.00	EA	4	6,560.00	
	SOLID PLASTIC URINAL SCREEN (WALL MOUNT)	600.00	EA	2	1,200.00	
10800	TOILET & BATH ACCESSORIES	300.00	EA	17	5,100.00	
	DIVISION 10 TOTAL:				\$36,460.00	
DIVISION 11: EQUIPMENT						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	COMMERCIAL KITCHEN EQUIPMENT ALLOWANCE	1.00	LS	589,000	589,000	
	Kitchen VE Items				-65,000	
	Add Grease scrubber				45,000	
	DIVISION 11 TOTAL:				\$569,000.00	
DIVISION 12: FURNISHINGS						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	SEE BELOW					
12485	FOOT GRILLES	0.00	EA	1	0.00	ELIMINATED
	DIVISION 12 TOTAL:				\$0.00	
DIVISION 14: CONVEYING SYSTEMS						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	ELEVATOR	95,000.00	EA	1	95,000.00	
	DIVISION 14 TOTAL:				\$95,000.00	
DIVISION 15: FIRE PROTECTION SYSTEM						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	SPRINKLER SYSTEM INCL STORAGE AND PUMPS			1	346,495.00	Williams Sprinkler System
	DIVISION 15 TOTAL:				\$346,495.00	
DIVISION 15A: PLUMBING						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	PLUMBING FIXTURES					
	DF	1,300.00	EA	3	3,900.00	
	WC	650.00	EA	25	16,250.00	
	URINAL	675.00	EA	4	2,700.00	

	LAVATORY	450.00	EA	21	9,450.00	
	SERVICE SINK	600.00	EA	2	1,200.00	
	MOP SINK	900.00	EA	2	1,800.00	
	TUB	1,200.00	EA	11	13,200.00	
	SHOWER TRAY	800.00	EA	2	1,600.00	
	TANKLESS WH	1,600.00	EA	13	20,800.00	
	PLUMBING PIPING / ACCESSORIES	10.00	SF	20,000	200,000.00	
	GREYWATER SYSTEM	5.00	SF			DELETE GREYWATER SYSTEM
	Revised Estimate Difference (10/25/16)				29,100.00	
	DIVISION 15A TOTAL:				\$356,000.00	ATLANTEC
DIVISION 15B: MECHANICAL						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	GEOTHERMAL SYSTEM		LS	1		DELETED GEOTHERMAL
	HVAC SYSTEM	28.15	LS	20,000	563,000.00	
	Revised Estimate Difference (10/25/16)				12,000.00	
	DIVISION 15 TOTAL:				\$558,060.00	ATLANTEC
DIVISION 16: ELECTRICAL						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
16000	ELECTRICAL	25.00	SF	20,000	498,368.00	
	LIGHTNING PROTECTION		LS		15,000.00	
	GENERATOR		LS		50,000.00	
	DIVISION 16 TOTAL:				\$557,656.00	ATLANTEC
TOTALS:						
	CONSTRUCTION SUBTOTAL:				\$5,841,681.42	
	CONTRACTOR OH&P (6%):				\$350,500.89	
	BUILDER'S RISK (1.25%)				\$73,021.02	
	PAYMENT & PERFORMANCE BONDS (0.95%)				\$55,495.97	\$128,516.99
	SUBTOTAL				\$6,320,699.29	
	ESTIMATING CONTINGENCY (10%)				\$632,069.93	INCLUDES SEWER CONTINGENCY
	ESCALATION (6%)				\$350,500.89	
	TOTAL CONSTRUCTION COST				\$7,303,270.11	
ARCHITECTURE AND ENGINEERING						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	BALANCE OF ORIGINAL DESIGN CONTRACT				185000	
	DESIGN REVISIONS AND UPDATES				85000	
	ADDED SCOPE (KITCHEN, RECEPTION, MUDROOM)				140000	
	TOTAL A&E COST				\$410,000.00	\$657,294.31

TOTAL CONSTRUCTION AND DESIGN PROJECT COST*

\$7,713,270.11

*not including furnishing or exhibits (see below)

POTENTIALLY PRIVATELY FUNDED ITEMS						
DIV.	ITEM	UNIT COST	UNIT	QTY.	TOTAL COST	REMARKS
	FURNITURE ALLOWANCE	18.00	SF	19,768	355,824.00	
	EXHIBITS ALLOWANCE	75.00	SF	3,100	232500	
	TOTAL FF&E COST				\$588,324.00	

TOTAL FURNISHED PROJECT COST*

\$8,301,594.11