PREPARED FOR:

THE VILLAS OF HATTERAS LANDING
HATTERAS, NC

MANAGED BY:
KEES VACATIONS

DRAFT
FOR REVIEW
PURPOSES ONLY

AUGUST 10, 2023

FULL RESERVE STUDY

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INTRODUCTIONS

The Villas of Hatteras Landing authorized Giles Flythe Engineers to perform a Full Reserve Study for the Villas of Hatteras Landing community located in Hatteras, NC. The purpose of the reserve study is to assist the association in planning for future capital repair expenses. A reserve study is an important tool for an association to adequately fund capital reserve accounts through regular annual reserve contributions. Adequately funded capital reserve accounts reduce the need to defer capital repairs, collect special assessments or borrow funds for capital repair projects.

A community association typically has certain responsibilities as described in the association governing documents. These responsibilities often include maintaining common areas and other components. An association, as a non-profit organization, will typically have two general asset cash accounts including an operating account and a reserve account. The operating account is funded from regular budgeted assessments and is used to fund routine operating expenses that occur on a predictable cycle, typically monthly or up to annually. The reserve account is funded from regular contributions and is primarily used to fund non-annual capital repair expenses.

The focus of the reserve study is on the reserve account. We have projected capital repair expenses over a term of twenty years. The capital repair expenses are limited to those components for which the association is responsible for maintaining. Capital repair expense estimates include an expected useful life and remaining useful life of the components to develop a projected schedule for capital repairs over the term. After developing a schedule of capital repairs over the term, we completed a cash flow analysis forecasting reserve account balances over the term and provided funding recommendations as needed. Capital repair expense estimates and funding estimates are most reliable in the first portion of the term. Updating a reserve study every three to five years will mitigate the impacts of variation in repair costs, component wear, inflation and reserve funding over time.

Capital reserve funding recommendations are provided to address funding principles including providing sufficient funds required, a stable reserve contribution rate over the term, an equitable contribution rate over the term and fiscally responsible. The reserve study is intended to assist the association in developing budgeted reserve contributions.

The report includes a narrative section which describes the scope of the reserve study, a discussion of observations and capital repair allocations, a general description of capital repairs and a description of our cash flow analysis and funding recommendations. The report appendices include the capital reserve analysis with tables detailing an itemized list of capital repair expenses, an itemized list of expenses by year and our cash flow analysis. A photo log is provided and includes a representative sample of our observations. The report includes multiple sections with information presented in various forms and should, therefore, be read in its entirety.

EXECUTIVE SUMMARY

The Villas of Hatteras Landing is a community with 53 individually owed condominium units within a single building located at 58822 Marina Way in Hatteras, NC. The building was constructed in 1996 according to local real estate tax records.

The association has responsibility for the roof and siding on the building as well as various site improvements. The most significant site improvements include the private street and parking areas, paver sidewalks and pool deck, concrete breezeways, entrance signage, generator, fire sprinkler system, and the drainage systems. Amenities include a pool and associated mechanical systems and furniture.

The buildings, common areas and grounds are generally in good/fair condition. Based on our evaluation, maintaining the current level of funding is **not** projected to maintain a positive balance through the term of this study. We have provided recommendations for annual reserve contribution schedules that provide sufficient funding to meet capital expenditure requirements in the next twenty years, in summary as follows:

- **Alternative 1**: In 2024, increase the annual reserve contribution to $92,000. Then, increase by 5% every year through 2028. This alternative is projected to maintain a positive balance through the term of this study.
- **Alternative 2:** In 2024, increase the annual reserve contribution to $90,000, then increase to $108,000 in 2026. This alternative is projected to maintain a positive balance through the term of this study.

A more detailed analysis of the reserve fund has been provided in Appendix A.

Some significant expenditures are expected over the term of the study. Some of the more notable examples are listed below:

- Replacing building roof
- Paint and repair siding
- Resurface asphalt paving
- Replace wastewater treatment equipment

Additional, less significant, capital expenditures are anticipated over the term of this study. Those items that will require repair or replacement are discussed later in this report.

PURPOSE & SCOPE

We have completed this study to estimate capital repair expenses the association is responsible for over the term of the study and provide a cash flow analysis and capital reserve funding plan. This study is intended to assist the association in determining the allocation requirements into the reserve fund which are projected to meet future anticipated capital expenditures for the community.

This report estimates capital repair expenses for the community twenty years into the future. Variations in capital repair expense forecasts due to the quality of maintenance, weather and other events may occur. Over time, age, premature deterioration, or other factors may necessitate the addition of assets into the reserve study. Additionally, fluctuations in material and labor costs beyond assumed inflation rates may also affect the accuracy of the forecasts. Therefore, a reserve study should be routinely updated, typically on a three to five-year cycle to provide the most accurate assessment of needs and financial obligations of the community.

What is a reserve study?

A reserve study is a long-term capital budget planning tool which compares the current reserve fund of an organization to future capital repairs and replacements.

A reserve study is a tool to help identify and prepare for major repair and replacement projects for a community.

It is recommended that a reserve study be performed every five years to ensure that communities are saving the necessary funds for capital repairs and improvements.

This study has been performed according to the scope as generally defined by The Villas of Hatteras Landing, Giles Flythe Engineers Inc., and the standards of the Community Associations Institute. The findings and recommendations are based on interviews with the community's management personnel; a review of available documents; and a limited visual inspection of the components maintained by the association.

The Cash Flow Method of calculating reserves has been utilized, whereby contributions to the reserve fund are designed to offset the variable annual expenditures. Funding alternates are recommended which are designed to achieve at minimum a Baseline Funding goal by maintaining a positive balance for the term of the study. We have also included a threshold funding goal which provides a minimum reserve account over the term. The minimum balance is typically calculated by determining the total over term forecasted expenses and dividing by the length of the term in years. This minimum threshold balance will help offset the risk of fluctuations in labor and material costs and component wear.

To determine which components should be included in this analysis, we used the following guidelines:

- The component must be maintained by the association.
- The component must have an estimated remaining useful life within the term of this study.
- The funding for the repair should be from the reserve account, not through an annual operating budget or other maintenance contracts.
- The cost of the capital repair must be significant enough to not be reasonably funded from an annual operating budget.

Our process for completing the reserve study includes:

1. Reviewing information provided including governing documents, association financial statements, and information on previous or planned capital repairs.
2. Reviewing available information on the property as needed. This may include plat maps, tax records, historical aerial photographs, available site, and building plans.
3. Conducting a visual inspection of the property. This may include interviewing association representatives during the inspection.
4. Developing an inventory of components to be included in the reserve study.
5. Predicting their remaining service life and, approximating how frequently they will require repair or replacement.
6. Estimating repair or replacement costs (in 2023 dollars) for each capital item.
7. Develop a cash flow analysis adjusting for inflation and return on invested monies to determine the adequacy of current reserve funding plans.
8. Develop funding recommendations with specific reserve contribution recommendations for each year of the term.

The statements in this report are opinions about the present condition of the areas inspected within the community. Our inspection is limited to a visual ground level inspection and we did not remove any surface materials, perform any testing, or move any furnishings. This study is not an exhaustive technical evaluation or building code compliance review. For additional limitations, see Conclusion and Limitations.

Standards of Reference

The following definitions are provided as a standard of reference:

Excellent: Component or system is in "as new" condition, requiring no rehabilitation and should perform in accordance with expected performance.

Good: Component or system is sound and performing its function, although it may show signs of normal wear and tear. Some minor rehabilitation work may be required.

Fair: Component or system falls into one or more of the following categories: a) Evidence of previous repairs not in compliance with commonly accepted practice, b) Workmanship not in compliance with commonly accepted standards, c) Component or system is obsolete, d) Component or system approaching the end of expected performance. Repair or replacement is required to prevent further deterioration or to prolong expected life.

Poor: Component or system has either failed or cannot be relied upon to continue performing its original function as a result of having exceeded its expected performance, excessive deferred maintenance, or state of disrepair. The resent condition could contribute to or cause the deterioration of other adjoining elements or systems. Repair or replacement is required.

Adequate: A component or system is of a capacity that is defined as enough for what is required, sufficient, suitable, and/or conforms to standard construction practices.

SOURCES OF INFORMATION

Date of Inspection

Onsite inspection of the property occurred on May 23, 2023.

Interviews

We interviewed the following people in connection with this study:

- Anna Barrera, On Site Personnel

Documents

The following documents were made available to us and reviewed:

- Association Governing Documents
- Association financial statements

Cost Estimates

- Our internal data files on similar projects
- Local contractor estimates for similar projects
- R.S. Means Construction Cost Estimating Data

DESCRIPTION

The Villas of Hatteras Landing is a community with 53 individually owed condominium units within a single building located at 58822 Marina Way in Hatteras, NC. The building was constructed in 1996 according to local real estate tax records.

The association has responsibility for the roof and siding on the building as well as various site improvements. The most significant site improvements include the private street and parking areas, paver sidewalks and pool deck, concrete breezeways, entrance signage, generator, fire sprinkler system, and the drainage systems. Amenities include a pool and associated mechanical systems and furniture.

OBSERVATIONS

The following key observations were made about the current condition of the more significant and costly common elements of the property.

Site Improvements

The asphalt paving including a portion of Marina Way and the parking areas throughout the community are privately maintained. The asphalt surfaces were noted to be in generally fair condition and likely original to construction of the property (1996). Cracks were noted in multiple locations, primarily in the main parking lot, and significant oxidation (long-term deterioration from weathering) was present throughout the paved surfaces.

Typically, we recommend the application of an oil resistant sealant to all asphalt parking area surfaces on an approximately 7-year cycle. At this same time, all cracks should be properly filled, patched, and sealed, and the parking spaces re-striped. We have allocated funds to crack fill, seal coat, and paint the asphalt parking lot beginning in 2036. Note that this is seven years after the estimated resurfacing, because crack filling and sealing at this point in the pavement's life would have minimal effect to extend the life. We have not included funds for sealing Marina Way.

The asphalt paving is at the end of its expected useful life. Generally, asphalt paved roads and parking areas have an expected useful life of approximately 20 to 25 years prior to resurfacing. Resurfacing the asphalt should include milling to remove the top 2-inches of asphalt paving in all areas, repairing sub-grade/base courses as needed and installing a new 2" thick layer of asphalt paving. We have allocated funds to resurface the asphalt paving in 2029.

The association is responsible for maintaining the concrete walkways in the breezeways, sidewalks in the common areas, rear patios, and the pool deck. The pool deck, patios, and sidewalks in the common areas are all comprised of concrete masonry pavers and appeared to be in generally good condition, with some shifting and settling of the pavers noted in multiple places including the pool deck near the coping. The concrete breezeways were in generally good condition, with only minor cracking noted. We have allocated funds for periodic repairs and/or replacement of these surfaces as required and have assumed that 5% of the surfaces will require maintenance every 6 years beginning in 2027.

Drainage on site is comprised of internal roof drains that direct stormwater runoff through piping and discharge into natural areas around the building. No catch basins or drainage inlets were noted in the paved or landscaped areas, so we assume that all other runoff is directed offsite through surface flow via landscaped swales and flows toward NC Hwy 12 or toward Austin Creek at the rear of the property. The swales tend to accumulate sediment that settles out during storm events and will need to be periodically removed and re-graded. In addition, over time, small landscape drainage systems will likely need to be installed to address concerns, such as ponding water.

We have allocated funds to repair the drainage systems on a 5-year cycle beginning in 2027. Repairs will likely include retrenching of swales to improve flow, adding rip rap or vegetation to stabilize exposed or steep areas, extending gutter downspouts to underground systems, installing french drains or other types of minor drainage systems.

There is an entrance sign located at the main entrance off of Hwy 12 at Marina Way. The sign is ground mounted and is comprised of plastic and metal body that appears to have been recently renovated and in good/new condition. Another sign is located along Hwy 12 at the sidewalk for beach access. The sign is of composite construction and is suspended between two wooden posts. This sign was deteriorated, with chipped and fading areas. We have allocated funds for repairs or replacement to the entrance signage every 10 years beginning in 2026.

A wooden bulkhead/retaining wall is located at the front of the property near the wooden walkway to Austin Creek. The wall was noted to be in fair condition, with significantly deteriorated wood members, but still appearing to be relatively straight, not bowing or leaning. We have included funds to replace the bulkhead every 30 years beginning in 2030.

The wastewater treatment equipment is surrounded by a perimeter fence. On the outside of the fence, thick shrubbery is present, preventing direct inspection of the fence, however, the fence is reportedly in good condition. Typically, wooden fences have an expected useful life of approximately 20 years. If painted or stained periodically that life cycle could be extended. We have allocated funds to replace the fencing every 20 years beginning in 2034.

The wooden walkway to Austin Creek and the gazebo is not the responsibility of the association and no funds have been included for replacement.

Common Building Exteriors

The predominant roof surface over the building is flat, and is covered in a modified bitumen membrane, with the perimeter roof sections being a pitched surface covered in architectural grade shingles. The shingle roof was reportedly replaced in 2023 and appears to be in good condition. The flashing cap is also scheduled for 2023 replacement. We are unaware of any concerns with current or previous roof leaks. We recommend setting aside money in the general operating budget to inspect and repair roofing concerns annually. Minor improvements will likely include replacing vent boots, flashing and drip edge repairs, and internal drain repairs.

If inspections and repairs occur in the interim, this type of roofing surface will last approximately twenty to twenty-five years. We strongly recommend that any re-roofing project closely follow procedures outlined by the National Roofing Contractors Association's *Roofing and Waterproofing Manual*, Current Edition. For asphalt shingles, a re-roofing sequence should include removal of the existing roofing material, replacement of any inadequate roof sheathing, replacement of any damaged flashing, and replacement of drip edge components. Re-roofing of the modified bitumen differs slightly, and would include replacing sections of insulation as required due to saturation or inadequate slope.

The flat roof over the building appears to be of original construction (1996) and is nearing the end of it's useful life. We have allocated funds for replacing the flat roof in 2027. For this replacement, we have assumed that the surface would be overlayed with a TPO membrane, not full tear off and replacement. We have scheduled the next cycle of shingle replacement for 2043. We do not anticipate the flashing cap will require replacement again within the term of this study and no further funds have been included. The maintenance building roof is covered with cedar shake shingles and appeared to be aged. We have also included funds for the maintenance building roof in 2027 and have assumed that the roof would be replaced with an asphalt shingle covering similar to the main building.

The building is covered in painted cedar shake siding and was noted to be in fair to poor condition. The paint coating on the siding was significantly faded, as well as flaking off in multiple areas. While the majority of the shakes appeared to be in generally good condition, some shakes were missing completely, and other areas had significant rot/damage to the shakes. Regular painting will help prolong the life of the siding. We have allocated funds for repairs and painting of the building exterior to occur on an 8-year cycle beginning in 2025. Exterior painting projects should include replacing any damaged trim and siding components, replacing any deteriorated caulking and sealants, adequate surface cleaning and preparation and the application of 2-coats of a high-quality exterior latex paint.

Metal railings line the balconies and breezeways, as well as the pool area. The railings appeared to be in generally good condition, but replacement of individual sections will likely be required within the term. We have assumed that any minor repairs to the railings would be funded from the annual operating budget, and we have allocated funds to replace approximately 20% of the railings every 8 years beginning in 2029.

Common Building Interiors

The office area includes storage closets, kitchen area, lounging areas, front desk, offices, and men's/women's bathrooms. In order to maintain a fresh appearance, the interior walls of the office area will need periodic painting and spot repairs. Currently, the paint appears to be in good condition, with only minor scuff marks noted. We have included funds for repainting on a 12-year cycle beginning in 2029.

Composite cabinetry and countertops are located throughout the offices and front desk area. The cabinets and countertops were in good condition, but original to the building and will likely be updated/replaced within the term. We have allocated funds for refurbishing the office cabinets and countertops in 2034.

The restrooms are single-occupant men's and women's restrooms with tile covering the floors and walls. The plumbing fixtures include a single toilet and standard sink with a composite counter. We have included funds to refurbish the office restrooms in 2034.

The floor of the office area is primarily covered in carpet. The carpet appeared to be in good condition, with no visible tearing, or signs of significant wear. However, it was loose in multiple areas causing humps in the carpet. We have allocated funds to replace the office carpet in 2037.

Various artwork and window treatments are located on the walls. Several upholstered chairs and sofas, wood/composite tables and chairs are located in the lounging area. We have included funds to replace portions of the furnishings in the clubhouse every 10 years beginning in 2029.

Mechanical, Plumbing and Electrical Systems

The pool pump and filtration equipment consists of two Pentair sand filters and a 5-horsepower pump. These items are typically replaced as the fail, and we have provided funds to replace components of the pump and filtration system on a 3-year cycle beginning in 2026.

The water heating equipment was recently replaced (2023) and appeared to be in good/new condition. The system is comprised of 6 tankless water heaters that are responsible for supplying hot water to the entire building, including the individual units. We have included funds to replace the water heaters every 15 years beginning in 2039.

The common areas are served by three split-system HVAC units with varying capacities, as well as a minisplit ductless unit, all located on the roof of the building. All the units appear to be manufactured in either 2013 or 2014, and we have assumed an expected useful life of approximately 12 years. We have provided funds to replace the HVAC units beginning in 2027.

One chilled water drinking fountain is located in the office area near the restrooms. We have allocated funds to replace the water fountains on a 15-year cycle beginning in 2028.

The association is responsible for maintaining the icemakers and washer dryer combos located in each of the two laundry rooms. The washer and dryers appeared to be in good condition, as well as the icemaker. One of the icemakers was being replaced this year (2023). We have provided an allowance every 15 years to replace the appliances, including in the office area, beginning in 2039.

In the electrical room and sprinkler room, there are heaters mounted to the ceiling. One of the heaters was significantly corroded and in poor condition, while the other two were in fair condition. We have included funds to replace the heaters every 15 years beginning in 2024.

A Cummins generator is located in the fire sprinkler room. It is reported that the primary purpose of the generator is to provide limited power to each unit in the case of power loss. The generator appeared to be in good condition, and is reportedly tested regularly to ensure adequate function. Generators expected useful life is often measured in hours of operation, and generally stretches into the tens of thousands of hours. At the time of the inspection, the generator had logged approximately 85 hours. We do not anticipate full replacement of the generator will be required within the term of the study, but have provided a contingency fund for repairs at the end of the term.

The building is served by a fire sprinkler system. The riser piping and valves were noted to have corrosion and flaking paint in multiple areas. The most recent inspection tag was dated April of 2023, so we assume

that all systems are operational. It is likely that repairs will be required within the term comprising of replacing various riser piping components, replacing sprinkler heads, strobes, fire extinguishers, and replacing the fire alarm control panel. We have included funds every 10 years beginning in 2033.

We have allocated funds for significant repairs to the utility systems within the community including buried sewer piping, electrical systems, and plumbing systems. The funds have been allocated every 10 years beginning in 2033.

The waste water treatment system is located in the fenced in area across Marina Way and was not accessed during the inspection. Based on information provided, the system is functioning as intended and undergoes monthly and annual inspection to ensure proper function. This equipment will require periodic repair and eventual replacement to continue functioning properly. We assume that most expenses related to the system are funded from the operating budget, but large-scale replacement will likely be required within the term. Restrictions on the quality of water discharged are likely to become more stringent over the next 20 years, necessitating major upgrades or full replacement of the system. We have allocated funds in 2036 for significant upgrades or full replacement of the waste water treatment system.

Amenities

The swimming pool is an in-ground concrete shell pool with plaster surface. The pool was filled with water and was not drained for our inspection. The pool plaster surface condition was not easily visible for the inspection. There was cracking of the grout noted in the perimeter coping as well as the waterline tile. Typically, pools will require draining and re-plastering on an approximately 10 to 12-year cycle. Resurfacing would include draining the pools, removing plastering, repairing concrete as needed, repairing/replacing tilework and re-plastering the pool surface with a quartz type plaster. We have allocated funds to resurface the swimming pool in 2026 and on a 12-year cycle.

Pool furniture consisted of composite framed chaise lounges with sling fabric, as well as plastic chairs and tables. We have budgeted for replacement of approximately 1/4th of the pool furniture on a 4-year cycle beginning in 2026. The fund allocation would also include replacing the two poolside grills, and the pool ladders and rails.

RESERVE FUND ANALYSIS

We have performed a cash flow analysis projecting balances in the reserve account over the term of this study. We have included estimated capital repair expenses detailed in the first several pages of Appendix A. We have included tables and graphs depicting current funding levels along with recommended funding alternatives.

The financial projections include an assumed inflation rate of 4.0%. At the direction of the board, the inflation rate was lowered to this amount based on the 10-year average from the Bureau of Labor Statistics. Additionally, we have assumed an average return on invested funds of 1.5%. The inflation rate adjustment is noted at the bottom of the annual expense page and the return on invested funds is noted in the existing funding level and funding alternative cash flow tables.

The software utilized to analyze the reserve funds was developed by Giles Flythe Engineers, Inc. in cooperation with a technology consultancy. The software and our analysis system have been extensively reviewed by leading community association and non-profit certified public accountants.

The capital repairs listed were derived from the initial request for proposal, discussions with association representatives, our informal review of governing documents and our site inspection. The association should confirm that the items listed are, in fact, the responsibility of the association and appropriate to fund from the reserve account.

Appendix A includes the following:

1. The Project Summary page that lists pertinent details specific to the association, the terms of the analysis and summarizes total over term expenses and recommended threshold balance.
2. The Expense Projection page that itemizes the capital repairs by category, illustrates our cost estimating by unit and provides estimated useful life and remaining useful life of each item.
3. The Annual Expense Projection pages that populate the capital repairs over the term of the study. These pages include a total adjusted for inflation at the bottom of the pages.
4. The Itemized Funding Analysis page provides a summary of the capital expenditures over the term and a graph breaking down the portion of the capital repairs into each category – Site Improvements, Building Exterior, Building Interior, Mechanical/Electrical/Plumbing Systems and Amenities.
5. The Current Funding Projection page provides a table and graph illustrating our cash flow analysis assuming the association maintains the current level of reserve contributions over the term of this study. The table includes projected reserve account balances, contributions, return on invested funds and capital repair expenses for each year of the term of this study.
6. The Funding Alternative pages each provide a table and graph illustrating our cash flow analysis assuming the association implements one of our funding recommendations detailed below.

Current Reserve Funding Rate:	**$61,972 per year**
Current Reserve Balance:	**$101,602 (approximate 2024 starting balance)**

Note that based on our cash flow analysis, maintaining the current funding level is not projected to maintain a positive/healthy balance over the term.

We have included recommended funding alternatives to your current reserve-funding program and recommend that the board adopt an alternative that best reflects the objectives of the community. Our funding recommendations are as follows:

- **Alternative 1**: In 2024, increase the annual reserve contribution to $92,000. Then, increase by 5% every year through 2028. This alternative is projected to maintain a positive balance through the term of this study.
- **Alternative 2:** In 2024, increase the annual reserve contribution to $90,000, then increase to $108,000 in 2026. This alternative is projected to maintain a positive balance through the term of this study.

The reserve study is focused on the capital reserve account and budgeted contributions to reserves. The recommendations above are solely attributed to the annual reserve contributions. The association likely has many line items in the annual operating budget that should also be periodically adjusted as part of an annual budgeting process.

The capital repair/replacement cost estimates we have developed are based on 2023 dollars. Our reserve study does include an adjustment for inflation and an assumed rate of return on invested funds.

CONCLUSION & LIMITATIONS

We have provided reserve funding recommendations based on our analysis of the association-maintained components, estimated capital repair costs over the term and the current funding levels. Further detail of the reserve fund analysis is provided in Appendix A.

The physical analysis portion of this reserve study was completed through a limited visual inspection. The visual inspection was completed from ground level unless otherwise specified. The visual inspection is generally limited to readily accessible and visible common areas that would likely require capital repair activities over the term. Note that this inspection does not include removing surface materials, excavation or any testing. The inspection does not include riparian buffers or other protected common areas. Buried utility components and other concealed components were not inspected as part of this analysis and we cannot be responsible for the condition of components not inspected.

The observations described in this study are valid on the date of the investigation and have been made under the conditions noted in the report. We prepared this study for the exclusive use of The Villas of Hatteras Landing. No other party should rely on the information in this report without consent. If another individual or party relies on this study, they shall indemnify and hold Giles Flythe Engineers Inc. harmless for any damages, losses, or expenses they may incur as a result of its use. This study is not to be considered a warranty of condition, and no warranty is implied. The appendices are an integral part of this report and must be included in any review.

Members of the Giles Flythe Engineers team working on this reserve study are not members of, or otherwise associated with the association. Giles Flythe Engineers has disclosed any other involvement with the association that could result in conflicts of interest.

Information provided by the representatives of the association regarding financial, physical, quantity, or historical issues, will be deemed reliable by Giles Flythe Engineers. The reserve balance presented in the Reserve Study is based upon information provided and was not audited. Information provided about reserve projects will be considered reliable. Any on-site inspection should not be considered a project audit or quality inspection. Giles Flythe Engineers is not aware of any additional material issues which, if not disclosed, would cause a distortion of the association's situation.

This reserve study is partially a reflection of information provided to us. The reserve study is assembled for the association's use and is not intended to be used for the purpose of performing an audit, quality/forensic analyses or background checks of historical records. Further, this study should not be considered a building code compliance analysis. The purpose of this study is to provide the association with a financial tool and is not to be considered an exhaustive technical or engineering evaluation which would consist of a broader scope of work.

We have provided estimated costs of capital repairs. These costs are based on our general knowledge of the construction industry. We have relied on standard sources as needed, such as Means Building Construction Cost Data and estimates reviewed by Giles Flythe Engineers on similar projects. We have performed no design work or other engineering analysis as part of this study, nor have we obtained competitive quotations or estimates from contractors. Actual repair costs can vary due to a variety of factors. We cannot be responsible for the specific cost estimates provided.

If you have any questions about this reserve study, please feel free to contact us. Thank you for the opportunity to serve you.

Respectfully submitted,

Zach Shepherd, PE, RS
Project Manager
Giles Flythe Engineers, Inc.

APPENDIX A: RESERVE FUND PROJECTIONS

The Villas of Hatteras Landing

City/state location:	Hatteras, NC
Date of inspection:	5/23/2023
Number of units:	53
Term of study (years):	20
Beginning Year of Term	2024
Estimated starting reserve account balance:	$101,602
Current annual reserve contribution rate:	$61,972
Assumed inflation rate:	4.00%
Assumed rate of return on invested funds:	1.50%
Total over term capital expenditure (un-inflated):	**$1,423,630**
Total over term capital expenditure with inflation:	**$2,092,085**
Recommended threshold reserve balance: (Average annual capital expenditure)	**$104,604**

EXPENSE ESTIMATES

Capital Item Description	Quantity	Unit	Unit Cost	Total Cost Per Cycle	Estimated Useful Life (years)	Estimated Remaining Life (years)	Notes
Site Improvements							
Crack fill, seal, stripe parking areas	3,150	SY	$2.00	$6,300	7	12	
Resurface asphalt paving	4,800	SY	$32.00	$153,600	25	5	
Replace sections of concrete flatwork	30	SY	$125.00	$3,750	6	3	Approx. 5% every 6 yrs
Drainage system repairs/improvements	1	LS	$5,000.00	$5,000	5	3	
Entrance signage repairs/replacements	1	LS	$5,000.00	$5,000	10	2	
Replace bulkhead	1	LS	$50,000.00	$50,000	30	6	
Replace fence around wastewater treatment	250	LF	$40.00	$10,000	20	10	
Building Exterior							
Replace asphalt shingle roof	128	SQ	$660.00	$84,480	20	19	
Replace flat roof	200	SQ	$900.00	$180,000	25	3	
Replace maintenance building roof	7	SQ	$500.00	$3,500	20	3	
Paint and repair siding	1	LS	$125,000.00	$125,000	8	1	
Repair/replace railings	200	LF	$75.00	$15,000	8	5	Approx. 20% every 8 yrs
Building Interior							
Paint office interior walls	1	LS	$8,000.00	$8,000	12	5	
Refurbish office countertops/cabinets	1	LS	$25,000.00	$25,000	30	10	
Refurbish office restrooms	2	EA	$6,000.00	$12,000	30	10	
Replace office carpet	500	SF	$6.00	$3,000	12	3	
Allocation to replace office furnishings	1	LS	$5,000.00	$5,000	10	5	
Mechanical, Electrical, Plumbing Systems							
Replace components of pump/filtration equip	1	LS	$4,500.00	$4,500	3	2	
Replace electric water heater	6	EA	$2,500.00	$15,000	15	14	
Replace HVAC units	4	EA	$7,000.00	$28,000	12	3	
Replace drinking fountain	1	EA	$1,800.00	$1,800	15	4	
Replace appliances	1	LS	$20,000.00	$20,000	15	14	
Replace heaters	3	LS	$800.00	$2,400	15	0	
Generator repair contengency	1	LS	$20,000.00	$20,000	20	19	
Fire sprinkler system repairs	1	LS	$20,000.00	$20,000	10	9	
Electrical/plumbing/buried pipe contengency	1	LS	$15,000.00	$15,000	10	9	
Replace wastewater treatment equipment	1	LS	$100,000.00	$100,000	30	12	
Amenities							
Resurface swimming pool	2,300	SF	$18.00	$41,400	12	2	
Replace pool furniture	1	LS	$3,000.00	$3,000	4	2	Approx 1/4 every 4 yrs

SY: Square Yard SF: Square Feet: LF: Linear Feet SQ: Roofing Square
EA: Each LS: Lump Sum SYS: System

ANNUAL EXPENSE PROJECTION

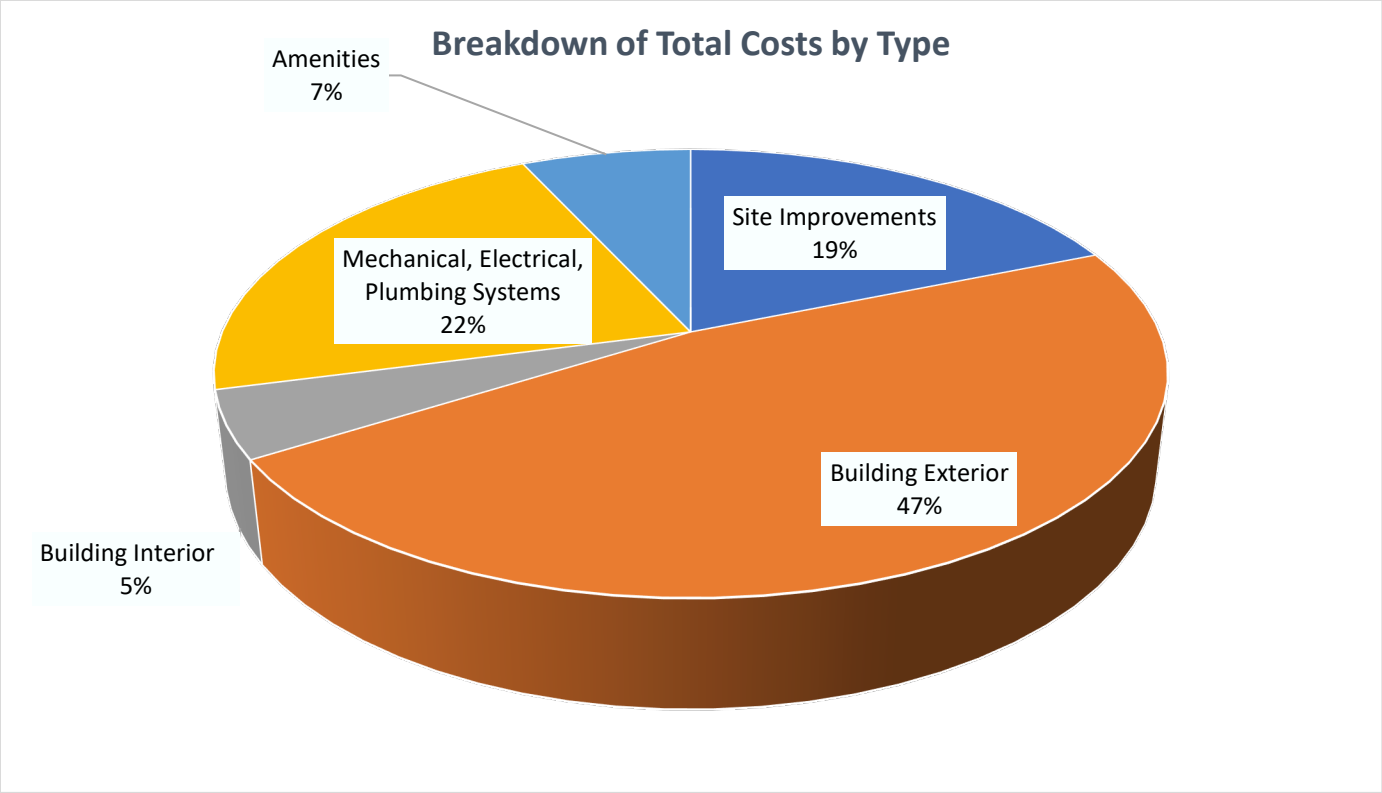
Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Site Improvements										
Crack fill, seal, stripe parking areas										
Resurface asphalt paving						$153,600				
Replace sections of concrete flatwork				$3,750						$3,750
Drainage system repairs/improvements				$5,000					$5,000	
Entrance signage repairs/replacements			$5,000							
Replace bulkhead							$50,000			
Replace fence around wastewater treatment										
Building Exterior										
Replace asphalt shingle roof										
Replace flat roof				$180,000						
Replace maintenance building roof				$3,500						
Paint and repair siding		$125,000								$125,000
Repair/replace railings						$15,000				
Building Interior										
Paint office interior walls						$8,000				
Refurbish office countertops/cabinets										
Refurbish office restrooms										
Replace office carpet				$3,000						
Allocation to replace office furnishings						$5,000				
Mechanical, Electrical, Plumbing Systems										
Replace components of pump/filtration equip			$4,500			$4,500			$4,500	
Replace electric water heater										
Replace HVAC units				$28,000						
Replace drinking fountain					$1,800					
Replace appliances										
Replace heaters	$2,400									
Generator repair contengency										
Fire sprinkler system repairs										$20,000
Electrical/plumbing/buried pipe contengency										$15,000
Replace wastewater treatment equipment										
Amenities										
Resurface swimming pool			$41,400							
Replace pool furniture			$3,000				$3,000			
Other										
Totals	**$2,400**	**$125,000**	**$53,900**	**$223,250**	**$1,800**	**$186,100**	**$53,000**	**$0**	**$9,500**	**$163,750**
Totals including inflation:	**$2,400**	**$130,000**	**$58,298**	**$251,126**	**$2,106**	**$226,419**	**$67,062**	**$0**	**$13,001**	**$233,067**

ANNUAL EXPENSE PROJECTION

Description	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Site Improvements										
Crack fill, seal, stripe parking areas			$6,300							$6,300
Resurface asphalt paving										
Replace sections of concrete flatwork						$3,750				
Drainage system repairs/improvements				$5,000					$5,000	
Entrance signage repairs/replacements			$5,000							
Replace bulkhead										
Replace fence around wastewater treatment	$10,000									
Building Exterior										
Replace asphalt shingle roof										$84,480
Replace flat roof										
Replace maintenance building roof										
Paint and repair siding								$125,000		
Repair/replace railings				$15,000						
Building Interior										
Paint office interior walls								$8,000		
Refurbish office countertops/cabinets	$25,000									
Refurbish office restrooms	$12,000									
Replace office carpet						$3,000				
Allocation to replace office furnishings						$5,000				
Mechanical, Electrical, Plumbing Systems										
Replace components of pump/filtration equip		$4,500			$4,500			$4,500		
Replace electric water heater					$15,000					
Replace HVAC units						$28,000				
Replace drinking fountain										$1,800
Replace appliances					$20,000					
Replace heaters						$2,400				
Generator repair contengency										$20,000
Fire sprinkler system repairs										$20,000
Electrical/plumbing/buried pipe contengency										$15,000
Replace wastewater treatment equipment			$100,000							
Amenities										
Resurface swimming pool					$41,400					
Replace pool furniture	$3,000				$3,000				$3,000	
Other										
Totals	**$50,000**	**$4,500**	**$111,300**	**$20,000**	**$83,900**	**$42,150**	**$0**	**$137,500**	**$8,000**	**$147,580**
Totals including inflation:	**$74,012**	**$6,928**	**$178,195**	**$33,301**	**$145,288**	**$75,910**	**$0**	**$267,836**	**$16,207**	**$310,929**

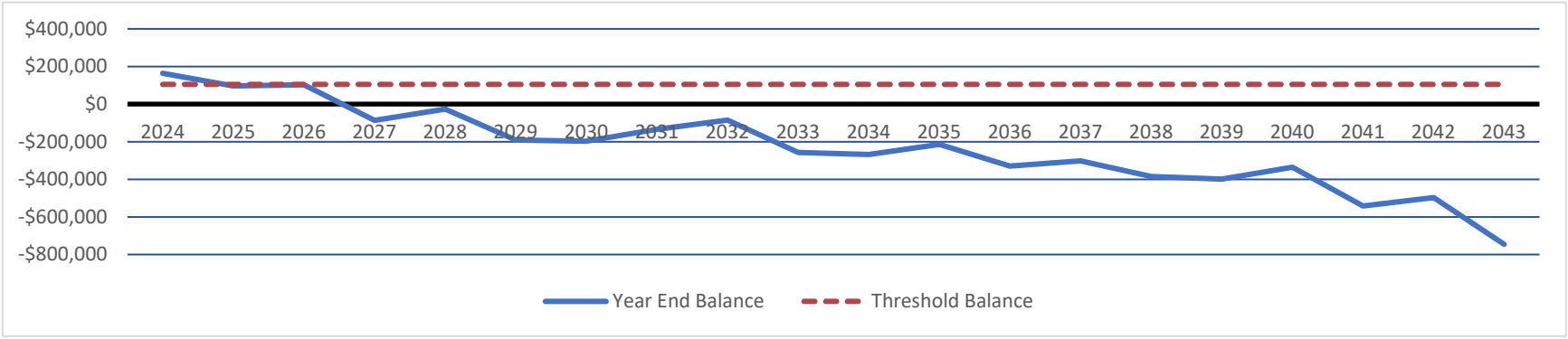
EXPENSE SUMMARY

Total over term capital expenditure (un-inflated)	**$1,423,630**
Total over term capital expenditure with inflation:	**$2,092,085**
Average estimated annual capital expenditure with inflation:	**$104,604**
Current Reserve Account Balance	**$101,602**
Full Funding Balance	**$619,491**
Percent Funded	**16.40%**



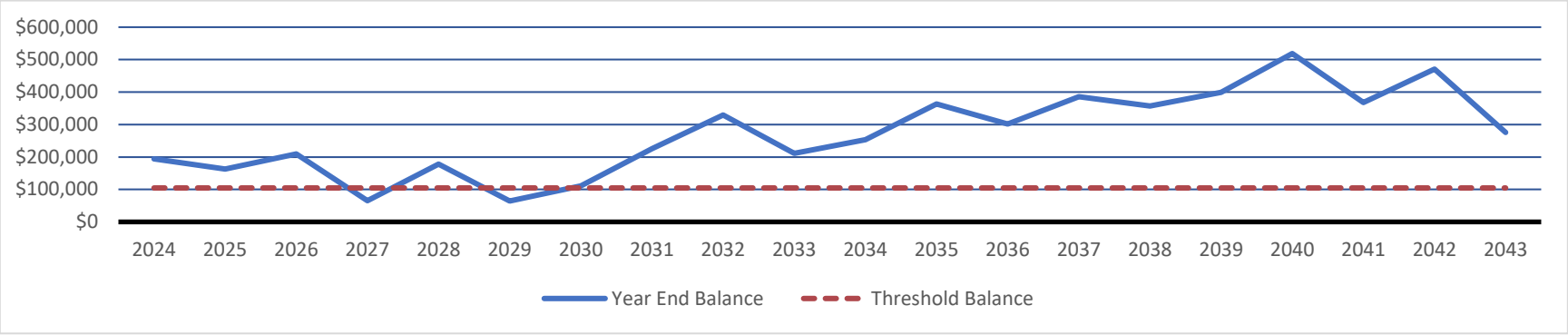
Current Funding Analysis

Year	Starting Balance	Reserve Account Contribution	Average Per Unit/Month	Return on Investments	Repair Expenses	Special Assessments	Year End Balance
2024	$101,602	$61,972	$97.44	$2,418	$2,400	$0	$163,592
2025	$163,592	$61,972	$97.44	$1,433	$130,000	0	$96,997
2026	$96,997	$61,972	$97.44	$1,510	$58,298	0	$102,181
2027	$102,181	$61,972	$97.44	$0	$251,126	0	-$86,973
2028	-$86,973	$61,972	$97.44	$0	$2,106	0	-$27,107
2029	-$27,107	$61,972	$97.44	$0	$226,419	0	-$191,554
2030	-$191,554	$61,972	$97.44	$0	$67,062	0	-$196,644
2031	-$196,644	$61,972	$97.44	$0	$0	0	-$134,672
2032	-$134,672	$61,972	$97.44	$0	$13,001	0	-$85,701
2033	-$85,701	$61,972	$97.44	$0	$233,067	0	-$256,796
2034	-$256,796	$61,972	$97.44	$0	$74,012	0	-$268,837
2035	-$268,837	$61,972	$97.44	$0	$6,928	0	-$213,792
2036	-$213,792	$61,972	$97.44	$0	$178,195	0	-$330,015
2037	-$330,015	$61,972	$97.44	$0	$33,301	0	-$301,345
2038	-$301,345	$61,972	$97.44	$0	$145,288	0	-$384,660
2039	-$384,660	$61,972	$97.44	$0	$75,910	0	-$398,598
2040	-$398,598	$61,972	$97.44	$0	$0	0	-$336,626
2041	-$336,626	$61,972	$97.44	$0	$267,836	0	-$542,490
2042	-$542,490	$61,972	$97.44	$0	$16,207	0	-$496,725
2043	-$496,725	$61,972	$97.44	$0	$310,929	0	-$745,682



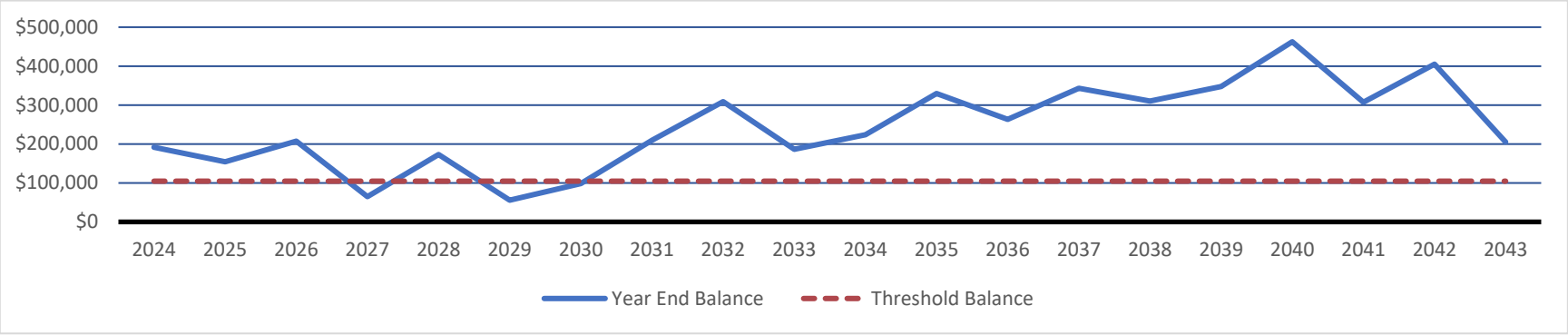
Funding Alternative 1 - Increase to $92,000 in 2024, then by 5% every year through 2028

Year	Starting Balance	Reserve Account Contribution	Average Per Unit/Month	Return on Investments	Repair Expenses	Special Assessments	Year End Balance
2024	$101,602	$92,000	$144.65	$2,868	$2,400	$0	$194,070
2025	$194,070	$96,600	$151.89	$2,410	$130,000	$0	$163,080
2026	$163,080	$101,430	$159.48	$3,093	$58,298	$0	$209,305
2027	$209,305	$106,502	$167.46	$970	$251,126	$0	$65,651
2028	$65,651	$111,827	$175.83	$2,631	$2,106	$0	$178,002
2029	$178,002	$111,827	$175.83	$951	$226,419	$0	$64,361
2030	$64,361	$111,827	$175.83	$1,637	$67,062	$0	$110,762
2031	$110,762	$111,827	$175.83	$3,339	$0	$0	$225,928
2032	$225,928	$111,827	$175.83	$4,871	$13,001	$0	$329,624
2033	$329,624	$111,827	$175.83	$3,126	$233,067	$0	$211,509
2034	$211,509	$111,827	$175.83	$3,740	$74,012	$0	$253,064
2035	$253,064	$111,827	$175.83	$5,369	$6,928	$0	$363,332
2036	$363,332	$111,827	$175.83	$4,454	$178,195	$0	$301,418
2037	$301,418	$111,827	$175.83	$5,699	$33,301	$0	$385,642
2038	$385,642	$111,827	$175.83	$5,283	$145,288	$0	$357,464
2039	$357,464	$111,827	$175.83	$5,901	$75,910	$0	$399,282
2040	$399,282	$111,827	$175.83	$7,667	$0	$0	$518,775
2041	$518,775	$111,827	$175.83	$5,441	$267,836	$0	$368,206
2042	$368,206	$111,827	$175.83	$6,957	$16,207	$0	$470,784
2043	$470,784	$111,827	$175.83	$4,075	$310,929	$0	$275,757



Funding Alternative 2 - Increase to $90,000 in 2024 and to $108,000 in 2026

Year	Starting Balance	Reserve Account Contribution	Average Per Unit/Month	Return on Investments	Repair Expenses	Special Assessments	Year End Balance
2024	$101,602	$90,000	$141.51	$2,838	$2,400	$0	$192,040
2025	$192,040	$90,000	$141.51	$2,281	$130,000	$0	$154,321
2026	$154,321	$108,000	$169.81	$3,060	$58,298	$0	$207,083
2027	$207,083	$108,000	$169.81	$959	$251,126	$0	$64,916
2028	$64,916	$108,000	$169.81	$2,562	$2,106	$0	$173,373
2029	$173,373	$108,000	$169.81	$824	$226,419	$0	$55,778
2030	$55,778	$108,000	$169.81	$1,451	$67,062	$0	$98,167
2031	$98,167	$108,000	$169.81	$3,092	$0	$0	$209,259
2032	$209,259	$108,000	$169.81	$4,564	$13,001	$0	$308,822
2033	$308,822	$108,000	$169.81	$2,756	$233,067	$0	$186,511
2034	$186,511	$108,000	$169.81	$3,307	$74,012	$0	$223,806
2035	$223,806	$108,000	$169.81	$4,873	$6,928	$0	$329,751
2036	$329,751	$108,000	$169.81	$3,893	$178,195	$0	$263,450
2037	$263,450	$108,000	$169.81	$5,072	$33,301	$0	$343,221
2038	$343,221	$108,000	$169.81	$4,589	$145,288	$0	$310,522
2039	$310,522	$108,000	$169.81	$5,139	$75,910	$0	$347,751
2040	$347,751	$108,000	$169.81	$6,836	$0	$0	$462,588
2041	$462,588	$108,000	$169.81	$4,541	$267,836	$0	$307,293
2042	$307,293	$108,000	$169.81	$5,986	$16,207	$0	$405,072
2043	$405,072	$108,000	$169.81	$3,032	$310,929	$0	$205,176



APPENDIX B: PROJECT PHOTOGRAPHS

Description	
Community entrance sign	
Photo No. 1	

Description	
Community entrance sign	
Photo No. 2	

Description	
Front elevation of building, office area	
Photo No. 3	

Description	
Front elevation of building	
Photo No. 4	

Description	
Typical view of shake siding with deterioration	
Photo No. 5	

Description	
Typical view of balcony w/ railing	
Photo No. 6	

Description	
Typical view of shake siding with deterioration	
Photo No. 7	

Description	
Typical view of corridor/breezeway	
Photo No. 8	

Description	
Typical view of shake siding with deterioration	
Photo No. 9	

Description	
Typical view of shake siding with deterioration	
Photo No. 10	

Description	
Overview of pool area	
Photo No. 11	

Description	
Pool pump and filtration equipment	
Photo No. 12	

Description	
Overview of flat roof, modified bitumen roof surface	
Photo No. 13	

Description	
Typical view of transition between shingles and flat roof	
Photo No. 14	

Description	
Typical roof drain on flat roof	
Photo No. 15	

Description	
Overview of common area HVAC units on roof	
Photo No. 16	

Description	
Overview of interior office area	
Photo No. 17	

Description	
Lounging area in office	
Photo No. 18	

Description	
Typical office restroom	
Photo No. 19	

Description	
Typical office space with countertops	
Photo No. 20	

Description	
Water heating equipment for entire building (4 of 6 units)	
Photo No. 21	

Description	
Backup generator located in sprinkler room	
Photo No. 22	

Description	
Fire sprinkler piping	
Photo No. 23	

Description	
Typical laundry room	
Photo No. 24	

Description	
Water drainage area with bulkhead	
Photo No. 25	

Description	
Typical view of builkhead	
Photo No. 26	

Description	
Overview of asphalt paved parking lot	
Photo No. 27	

Description	
Cracking in asphalt parking lot	
Photo No. 28	

Description	
Overview of asphalt drive in parking lot	
Photo No. 29	

Description	
Overview of maintenance building	
Photo No. 30	