PREPARED FOR:

CAMBRIDGE CROSSINGS HOMEOWNERS ASSOCIATION SOUTHPORT, NC.

MANAGED BY:
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May 25, 2022

After 2nd round Board Comments Received

FULL RESERVE STUDY

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INTRODUCTIONS

The Cambridge Crossings Homeowners Association authorized Giles Flythe Engineers to perform a Full Reserve Study for the Cambridge Crossings community located in Southport, 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 of 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 it is entirety.

EXECUTIVE SUMMARY

The Cambridge Crossings Homeowners Association is a private residential community comprised of an 89-member townhome association with responsibilities for the exterior facades of thirty-two (32) townhome buildings, common area amenities and site improvements. The most significant site improvements include the private streets and parking areas, concrete driveways and sidewalks, stormwater pond with fountain, mail kiosks, perimeter fencing, elevated wooden walkway, entrance monument and landscaping.

The common areas, site improvements and buildings are generally in fair to good condition. Based on our evaluation, 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 increase the threshold balance of the reserve account and that provide sufficient funding to meet capital expenditure requirements in the next twenty years, in summary as follows:

- **Alternative 1:** In 2023 increase the annual reserve contribution to $50,000 and collect a special assessment of $222,500 ($2,500 per unit) in both 2023 and 2026. Then, beginning in 2024, increase the contribution by 10% every year through 2035. This alternative is projected to maintain a positive balance through the term of this study.

- **Alternative 2:** Beginning in 2023, increase the annual reserve contribution by $20,000 and on an every-other-year basis through 2031. Additionally, a special assessment of $445,000 ($5,000 per unit) is required in 2024. 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:

- Replace building roofs and gutters
- Repair/replace exterior siding/trim
- Resurface asphalt paving
- Replace wood fencing and wood walkway decking and railings
- Repairs to stormwater pond and overall drainage systems

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 Cambridge Crossings Homeowners Association, Giles Flythe Engineers 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 2022 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

The onsite inspection of the property occurred on February 15, 2022.

Interviews

We interviewed the following people in connection with this study:

- Carson Lawrence, Lawrence Real Estate Services
- Mr. Don Feather, Board President
- Mr. Will Nunnally, Board Treasurer
- Ms. Dale Mullarkey, Finance Committee

Documents

The following documents were made available to us and reviewed:

- Brunswick County tax records
- Current reserve account and funding balances
- Recent capital expenditure proposals

Cost Estimates

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

DESCRIPTION

The Cambridge Crossings Homeowners Association is a private residential community comprised of an 89-member townhome association with responsibilities for the exterior facades of thirty-two (32) townhome buildings, common area amenities and site improvements. The most significant site improvements include the private streets and parking areas, concrete driveways and sidewalks, stormwater pond with fountain, mail kiosks, perimeter fencing, elevated wooden walkway, entrance monument and landscaping.

The buildings were constructed beginning in 2007 and after the initial 2-story buildings were built, construction onsite was temporarily halted. Newer building construction resumed in approximately 2013 with complete buildout by 2017. The buildings are wood framed and constructed on concrete slab-on-grade foundations and incorporate pitched roofs covered with architectural grade fiberglass asphaltic shingles. A single access to the development is provided off Fish Factory Road and the streets within the community are asphalt paved and primarily lined with concrete valley gutter.

No significant amenities are provided within the community.

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 in the parking areas and drive aisles generally appeared to be in fair-to-good condition. We observed sections of paving with concerns including fatigue cracking, depressions and general deterioration in areas of previous water ponding. We also observed previous full depth repairs in small sections of asphalt. We anticipate that additional full depth repairs will be required in the future prior to complete resurfacing. These type repairs would include saw-cutting and removing sections of the asphalt paving, repairing the base course/sub-grade as needed and installing and compacting new asphalt (typically at least 2-inches thick). We have allocated funds in 2026 for full depth repairs of sections of paving.

Limited longitudinal cracking was observed in sections of the asphalt paving. Although we often recommend periodic crack filling and seal coat applications on low-speed asphalt paving; per discussions with the Board, the Association does not anticipate completing reseal projects on these streets.

Assuming sectional repairs of the paving are completed in the interim, we estimate the asphalt paving to have a remaining useful life of approximately 10-12 years prior to resurfacing. Resurfacing would include full depth repairs of sections of paving as needed, milling to remove sections of paving to maintain adequate drainage profiles, followed by surface preparations and the installation of a new 1.5-2" thick wearing layer of asphalt paving over all paved areas. We have allocated funds for resurfacing the asphalt paving in 2033.

Concrete valley gutter is predominately installed along the both sides of the private streets. We observed some cracking in sections of gutter and one section of replacement curb/gutter observed. Repairs/replacement of gutter is considered a Maintenance expense.

Concrete flatwork in the community is comprised of concrete driveways and sidewalks leading to building unit entrances. The Association is responsible for maintenance of these concrete surfaces, but not the concrete patios at the rear of units. Additionally, the Association is responsible for common area sidewalks including the walkway leading to the elevated wood bridge. The concrete flatwork generally appeared to be in good condition with limited areas of minor cracking observed and at least one driveway that previously required sectional replacement. Repairs/replacement of concrete flatwork is considered a Maintenance expense.

Drainage systems include gutter downspouts discharging at grade and leading to swales that direct stormwater flow offsite and stormwater catch basins observed in the private streets. The catch basins are likely all connected to buried concrete piping. We observed concrete piping discharge to a drainage swale with rip rap dams behind buildings 4197/4193 and a separate drainage swale behind buildings 4177/4175/4173. A likely municipal drainage ditch is installed along Fish Factory Road at the entrance to the community. Additionally, stormwater discharge from the catch basins is directed to the stormwater pond system discussed below.

We also observed minor erosion and granite rip rap displacement developing in common areas around the community. We have allocated funds for drainage system improvements on a 7-year cycle beginning in 2026. Drainage system improvements would likely include re-trenching swales, installing additional stone rip rap armoring and other erosion control measures, and possibly installing additional drainage systems.

A large retention pond has been constructed inside the perimeter of the private street and this pond includes a fountain, forebay, detention and infiltration area. The system appeared to be functioning as intended; however, in order for the stormwater retention system to continue functioning properly, the pond will require regular cleaning and maintenance. We have assumed these maintenance costs including nuisance control, debris and litter removal, inlet and outlet maintenance and inspections (which have been performed) are to be paid from the Operating budget.

The Association should ensure that the storm water management devices conform to all applicable regulations at all times and this activity is currently underway. In addition to regular yearly maintenance, we anticipate that more significant pond repair work and/or limited forebay or detention and infiltration area dredging will be required periodically. We have allocated funds for very limited dredging, outlet structure/piping repair, pond erosion repairs/replacing riprap reinforcement and/or major shelf repairs in 2031. Because construction around the pond is complete the likelihood of significant sediment deposits into the pond system is minimized.

The Board has retained a pond management company to maintain the pond. Additionally, sediment and topographic mapping of the bottom of this pond has been previously completed. After 12 years of pond operation, the Board reports very little sediment exists in the pond.

Long sections of wood privacy fencing are located behind all the buildings constructed at the perimeter of the property with the exception of Building Nos. 4185, 4187, 4193 and 4197. We observed sections of the repaired/replaced and individual replacement wood slats. We have allocated funds to replace all the wood privacy fencing beginning in 2028. This wood fencing has an expected useful life of approximately 20 years and we anticipate most original fencing will be significantly deteriorated/discolored in the next 5-8 years. Note that the community may continue to only replace sections of fencing as required, but we believe all fencing will be replaced during the term of this analysis.

Limited sections of privacy fencing between units are considered the responsibility of individual townhome owners.

Two wood framed mail centers with roofs and siding are centrally located in the community. The mail centers include mail kiosks (6 total) that generally appeared to be in good condition with some rusted base anchors observed. Repair/replacement of rusted anchors is considered a Maintenance expense. We have allocated funds to replace all mail box kiosks near the end of the term of this analysis (2042). Additionally, major repairs/rebuild of the 2 vinyl-sided and shingled roof mail centers are anticipated by 2042.

The wooden elevated walkway/golf cart path installed on the southwest end of the site that leads to the adjoining neighborhood appears to have been constructed in approximately 2016 according to the Board. The

wood framed structural components (girders/posts/bracing) appeared to be in relatively good condition and complete rebuild of the elevated walkway is not anticipated during the term of this analysis. However, after 20-years of life, replacement of the wood decking and railing system will likely be required. We have allocated funds to replace all the wood decking and railings and complete minor structural repairs as required in 2036.

The Association is responsible for the landscape irrigation system for the community grounds. This system includes controllers, timers, buried piping/valves and heads and water for the system is provided by the pond. Replacement controllers, timers, piping and heads as needed is considered a Maintenance expense.

A relatively small allocation for buried utility repair (primarily buried waste line replacement) is provided in 2035. Waste piping from the common areas to utility tie-ins are Association responsibility and typically some waste piping failures will begin to occur after 30-years of service. Because we did not observe excessively large trees between the building and the street sewer system; we do not anticipate major waste piping blockages/damage from tree roots in this community.

We have not provided an allocation for major landscaping overhaul in this community. The Board appears to have optimized the sod/grass fertilization program to preclude future sod replacement around the buildings and typical sod/grass repair/fertilization and seeding is considered a periodic maintenance expense. Additionally, the Board requires any individual homeowners to get HOA approval if any small trees are planted or removed.

Common Building Exteriors

The association is responsible for maintaining the exterior façade of the townhome buildings including siding/trim, brick veneer and roofing components. The association is not responsible for maintaining/replacing unit windows and doors on the townhome buildings.

The building roofs are clad in architectural grade asphaltic fiberglass shingles and varied in condition. We observed some sections of replacement shingles on two-story and one-story buildings and understand that roof repairs (particularly at valleys) and significant flashing repairs have been periodically required on the older buildings. No complete roofing replacements on any buildings have been completed to date. Architectural grade shingles typically have an expected life of 20-25 years, but based on the history of the roofs we believe full roof replacement will be required within 20 years of installation of roofing.

We have allocated funds for eight phases of roof replacement. The 2-story buildings constructed in 2007 and through 2013 are included the first five (5) phases of roof replacement which require roof replacements in consecutive years beginning in 2023 and ending in 2027. Note that these roofs are more complex than the newer roofs and cost per square for shingle replacement is higher. The newer one-story buildings were all constructed between late 2015 through 2017 and funds are allocated in three additional phases (2036, 2038 and 2040) to reroof all these building (6^{th}, 7^{th} and 8th phases of roofing replacement).

A re-roofing sequence should include removal of the existing shingle surfacing, replacement of any inadequate roof sheathing, replacement of any damaged flashing, and replacement of drip edge components. 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.

Note that small sections of metal roofing are installed on the buildings as an architectural feature and the metal roofing appeared to be in good condition. We do not anticipate replacement of the metal roofing will be required in the next 20-years.

We have also included an allowance for replacing gutters and downspouts as required on the buildings in 2033 (typically bulk of the work will actually be completed during roof replacements). As gutters are replaced, consideration should be given to upgrading the existing gutters to higher capacity 6-inch gutters.

It is likely that vent boots and flashing repairs will be required in the interim between roof replacements. We have assumed minor repairs to the roof systems including vent boot replacements would be funded from an annual maintenance budget.

The exteriors of the buildings are predominately clad in brick veneer (2-story buildings) and vinyl siding with aluminum fascia (all buildings) and shutters. We also observed 'faux" wooded truss ends on the gable ends of the two-story buildings. The exterior surfaces of the buildings generally appeared to be in good condition and well maintained.

Only minimal painted components (brick mold around doors, wrapped beams at entrances, the faux truss ends, etc.) on the buildings were noted. Based on the minimal exterior painting required; funds for periodic building painting should be funded from the Maintenance budget.

The vinyl siding appeared to be in reasonable condition with no major weathering/chalking or loose sections of siding noted. Vinyl siding has an expected life of up to 50-years and full replacement of the siding is not anticipated during the term of this assessment. The brick veneer also appeared to be in relatively good condition; however, the Board advised that significant brick veneer replacement has been required at the front elevation of buildings due to water intrusion between the brick and framing. We observed replaced/repointed sections of brick during our inspection. Based on the Association previous experience with water intrusion into the framing/brick veneer cavities and the likelihood that some vinyl and trim repair/replacement will be required; we have provided an annual allocation in reserves for exterior building repairs.

Although painting the existing shutters is an option, replacement of the existing shutters will likely provide a more pleasing appearance in the long term. These shutters typically show signs of weathering and discoloration and fund are allocated for shutter replacement in two phases beginning in 2028.

Mechanical, Electrical, Plumbing Systems

The stormwater detention pond includes a center fountain with electrical and controls. We were advised that fountain components were replaced in approximately 2018/2019 and we have allocated funds to replace the fountain and auxiliary components in 2028 and on a 10-year cycle.

The exterior of the buildings includes wall mounted light fixtures adjacent to the garages and smaller soffit lighting installed at the entrance doors. The light fixtures are original to building construction and have an expected life of 18-20 years due corrosion and general weathering of the metal components. Note that replacement of these light fixtures is considered a Maintenance expense; however, we recommend ordering the same style fixture for all buildings such that the building lighting appearance is more uniform.

One irrigation well with three pumps (two pumps for irrigation and one pump to maintain pond level as required) are located near the stormwater detention pond and we understand one pump was replaced in approximately 2018. These small pumps have an expected life of 10-15 years and funds are allocated to replace one pump every 8 years beginning in 2025.

Amenities

No significant amenities are provided for this community. Replacement of the small composite bench in the landscaped island at the north end of the community and replacement/repairs to flagpole and pole up-lighting near the entrance should be funded from the Maintenance account.

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% and per Board request, we have assumed a $0 return on invested funds. The inflation rate adjustment is noted at the bottom of the annual expense page and the $0 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 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. This page includes 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.

2022 Reserve Funding Rate:	**$32,533 per year**
Projected 1/2023 Reserve Balance:	**$209,707**

Based on our cash flow analysis, maintaining the current funding level is not projected to maintain a positive balance over the term.

We have included additional 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 2023 increase the annual reserve contribution to $50,000 and collect a special assessment of $222,500 ($2,500 per unit) in both 2023 and 2026. Then, beginning in 2024, increase the contribution by 10% every year through 2035. This alternative is projected to maintain a positive balance through the term of this study.

- **Alternative 2:** Beginning in 2023, increase the annual reserve contribution by $20,000 and on an every-other-year basis through 2031. Additionally, a special assessment of $445,000 ($5,000 per unit) is required in 2024. 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 2022 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 Cambridge Crossings Homeowners Association. 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 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,

Robert C. Giles, PE, RS
Principal Engineer
Giles Flythe Engineers

APPENDIX A: RESERVE FUND PROJECTIONS

Cambridge Crossings Homeowners Association

City/state location:	Southport, NC
Date of inspection:	2/15/2022
Number of units:	89
Term of study (years):	20
Beginning Year of Term	2023
Estimated starting reserve account balance:	$209,707
Current annual reserve contribution rate:	$32,533
Assumed inflation rate:	4.00%
Assumed rate of return on invested funds:	0.00%
Total over term capital expenditure (un-inflated):	**$1,875,750**
Total over term capital expenditure with inflation:	**$2,691,707**
Recommended threshold reserve balance: (Average annual capital expenditure)	**$134,585**

EXPENSE ESTIMATES

Capital Item Description	Quantity	Unit	Unit Cost	Total Cost Per Cycle	Estimated Useful Life (years)	Estimated Remaining Life (years)	Notes
Site Improvements							
Full depth asphalt repairs	500	SY	$40.00	$20,000	20	3	
Resurface asphalt paving	6,550	SY	$21.00	$137,550	25	10	
Common area drainage improvements	1	LS	$15,000.00	$15,000	7	3	
Stormwater pond major repairs	1	SYS	$20,000.00	$20,000	15	8	
Repair/replace wood perimeter fencing	2,220	LF	$40.00	$88,800	20	5	
Replace mail kiosks	7	EA	$2,800.00	$19,600	30	19	
Repair/rebuild mail structures	2	EA	$5,000.00	$10,000	25	19	
Replace elevated walkway decking/railings	2,500	SF	$15.00	$37,500	20	13	
Allocation for buried utility repair	1	LS	$25,000.00	$25,000	40	19	
Building Exterior							
Replace building roofs (Phase 1)	11	units	$18,000.00	$198,000	20	0	Older buildings
Replace building roofs (Phase 2)	10	units	$18,000.00	$180,000	20	1	Older buildings
Replace building roofs (Phase 3)	7	units	$18,000.00	$126,000	20	2	Older buildings
Replace building roofs (Phase 4)	5	units	$20,000.00	$100,000	20	3	Older buildings
Replace building roofs (Phase 5)	5	units	$21,000.00	$105,000	20	4	Older buildings
Replace building roofs (Phase 6)	585	SQ	$350.00	$204,750	20	13	
Replace building roofs (Phase 7)	585	SQ	$350.00	$204,750	20	15	
Replace building roofs (Phase 8)	580	SQ	$350.00	$203,000	20	17	Newer buildings
Allowance for gutter repairs/upgrades	1	SYS	$25,000.00	$25,000	25	10	As needed on older buildgs
Repair siding/brick and trim (Allowance)	1	SYS	$4,000.00	$4,000	1	0	
Replace building shutters (Phase I)	45	Pairs	$200.00	$9,000	18	5	
Replace building shutters (Phase 2)	54	Pairs	$200.00	$10,800	18	10	
Mechanical/Electrical							
Replace pond fountain	1	EA	$7,000.00	$7,000	10	5	2018 replaced
Replace irrigation well pump	1	EA	$4,000.00	$4,000	8	2	2 pumps (repl. 1 every 8 yr)

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

ANNUAL EXPENSE PROJECTION

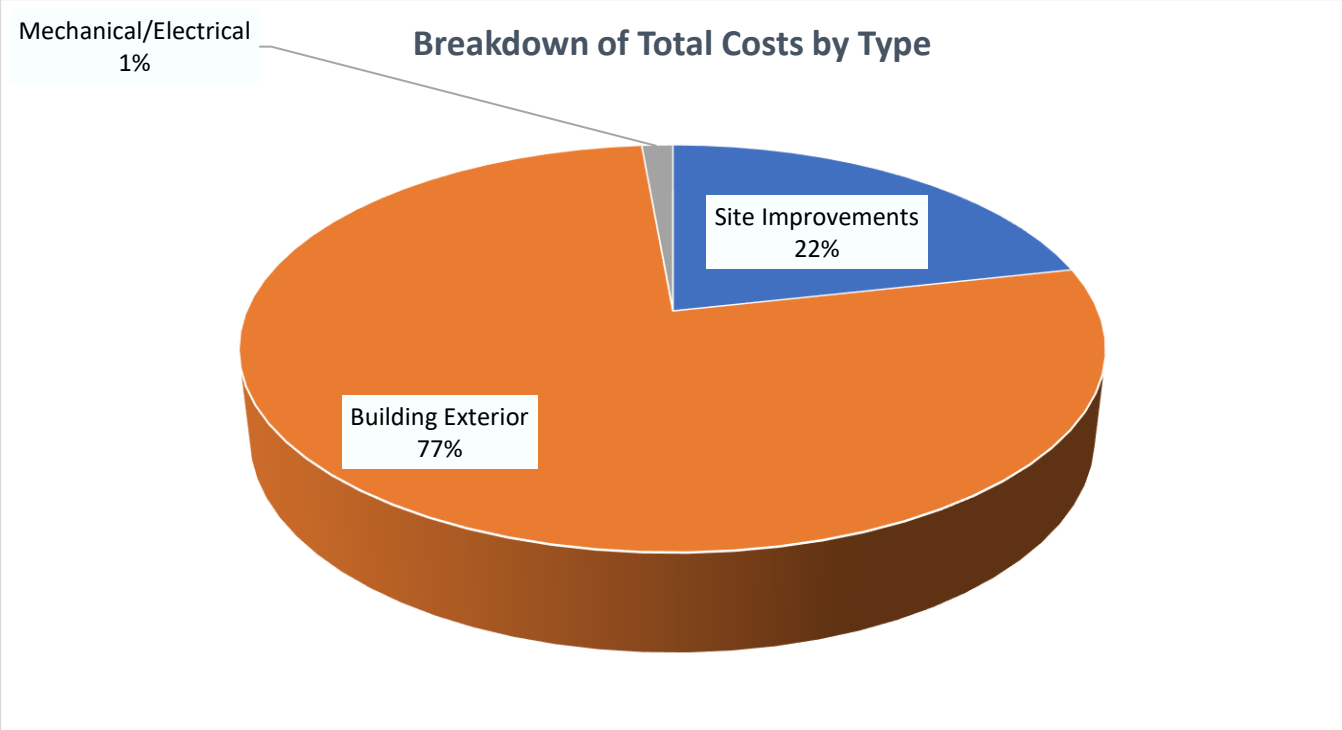
Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Site Improvements										
Full depth asphalt repairs				$20,000						
Resurface asphalt paving										
Common area drainage improvements				$15,000						
Stormwater pond major repairs									$20,000	
Repair/replace wood perimeter fencing						$88,800				
Replace mail kiosks										
Repair/rebuild mail structures										
Replace elevated walkway decking/railings										
Allocation for buried utility repair										
Building Exterior										
Replace building roofs (Phase 1)	$198,000									
Replace building roofs (Phase 2)		$180,000								
Replace building roofs (Phase 3)			$126,000							
Replace building roofs (Phase 4)				$100,000						
Replace building roofs (Phase 5)					$105,000					
Replace building roofs (Phase 6)										
Replace building roofs (Phase 7)										
Replace building roofs (Phase 8)										
Allowance for gutter repairs/upgrades										
Repair siding/brick and trim (Allowance)	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
Replace building shutters (Phase I)						$9,000				
Replace building shutters (Phase 2)										
Mechanical/Electrical										
Replace pond fountain						$7,000				
Replace irrigation well pump			$4,000							
Totals	**$202,000**	**$184,000**	**$134,000**	**$139,000**	**$109,000**	**$108,800**	**$4,000**	**$4,000**	**$24,000**	**$4,000**
Totals including inflation:	**$202,000**	**$191,360**	**$144,934**	**$156,356**	**$127,515**	**$132,372**	**$5,061**	**$5,264**	**$32,846**	**$5,693**

ANNUAL EXPENSE PROJECTION

Description	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Site Improvements										
Full depth asphalt repairs										
Resurface asphalt paving	$137,550									
Common area drainage improvements	$15,000							$15,000		
Stormwater pond major repairs										
Repair/replace wood perimeter fencing										
Replace mail kiosks										$19,600
Repair/rebuild mail structures										$10,000
Replace elevated walkway decking/railings				$37,500						
Allocation for buried utility repair										$25,000
Building Exterior										
Replace building roofs (Phase 1)										
Replace building roofs (Phase 2)										
Replace building roofs (Phase 3)										
Replace building roofs (Phase 4)										
Replace building roofs (Phase 5)										
Replace building roofs (Phase 6)				$204,750						
Replace building roofs (Phase 7)						$204,750				
Replace building roofs (Phase 8)								$203,000		
Allowance for gutter repairs/upgrades	$25,000									
Repair siding/brick and trim (Allowance)	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000	$4,000
Replace building shutters (Phase I)										
Replace building shutters (Phase 2)	$10,800									
Mechanical/Electrical										
Replace pond fountain						$7,000				
Replace irrigation well pump	$4,000								$4,000	
Totals	**$196,350**	**$4,000**	**$4,000**	**$246,250**	**$4,000**	**$215,750**	**$4,000**	**$222,000**	**$8,000**	**$58,600**
Totals including inflation:	**$290,646**	**$6,158**	**$6,404**	**$410,024**	**$6,927**	**$388,554**	**$7,492**	**$432,434**	**$16,207**	**$123,461**

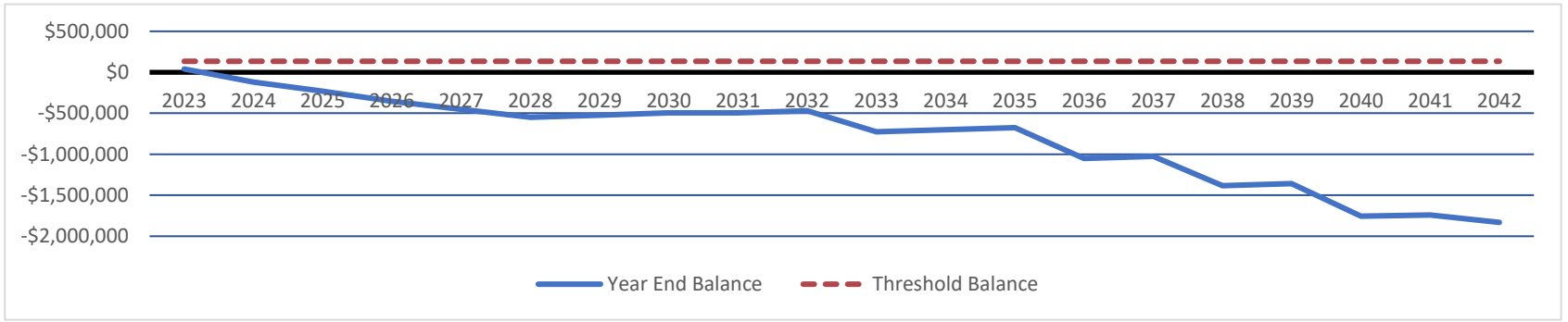
EXPENSE SUMMARY

Total over term capital expenditure (un-inflated)	**$1,875,750**
Total over term capital expenditure with inflation:	**$2,691,707**
Average estimated annual capital expenditure with inflation:	**$134,585**
Current Reserve Account Balance	**$209,707**
Full Funding Balance	**$1,061,371**
Percent Funded	**19.76%**



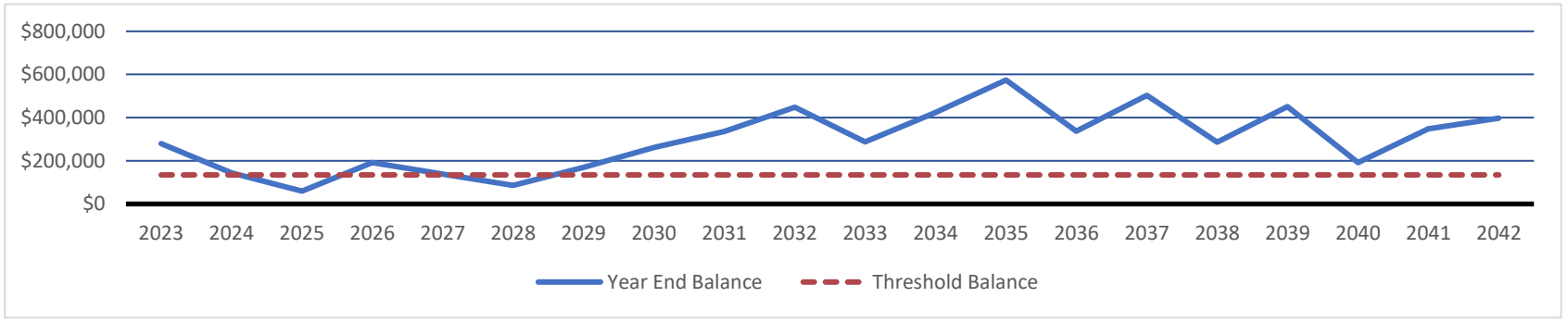
Current Funding Analysis

Year	Starting Balance	Reserve Account Contribution	Average Per Unit/Month	Return on Investments	Repair Expenses	Special Assessments	Year End Balance
2023	$209,707	$32,533	$30.46	$0	$202,000	$0	$40,240
2024	$40,240	$32,533	$30.46	$0	$191,360	0	-$118,587
2025	-$118,587	$32,533	$30.46	$0	$144,934	0	-$230,988
2026	-$230,988	$32,533	$30.46	$0	$156,356	0	-$354,811
2027	-$354,811	$32,533	$30.46	$0	$127,515	0	-$449,793
2028	-$449,793	$32,533	$30.46	$0	$132,372	0	-$549,632
2029	-$549,632	$32,533	$30.46	$0	$5,061	0	-$522,160
2030	-$522,160	$32,533	$30.46	$0	$5,264	0	-$494,891
2031	-$494,891	$32,533	$30.46	$0	$32,846	0	-$495,204
2032	-$495,204	$32,533	$30.46	$0	$5,693	0	-$468,364
2033	-$468,364	$32,533	$30.46	$0	$290,646	0	-$726,477
2034	-$726,477	$32,533	$30.46	$0	$6,158	0	-$700,102
2035	-$700,102	$32,533	$30.46	$0	$6,404	0	-$673,973
2036	-$673,973	$32,533	$30.46	$0	$410,024	0	-$1,051,464
2037	-$1,051,464	$32,533	$30.46	$0	$6,927	0	-$1,025,858
2038	-$1,025,858	$32,533	$30.46	$0	$388,554	0	-$1,381,878
2039	-$1,381,878	$32,533	$30.46	$0	$7,492	0	-$1,356,837
2040	-$1,356,837	$32,533	$30.46	$0	$432,434	0	-$1,756,738
2041	-$1,756,738	$32,533	$30.46	$0	$16,207	0	-$1,740,412
2042	-$1,740,412	$32,533	$30.46	$0	$123,461	0	-$1,831,340



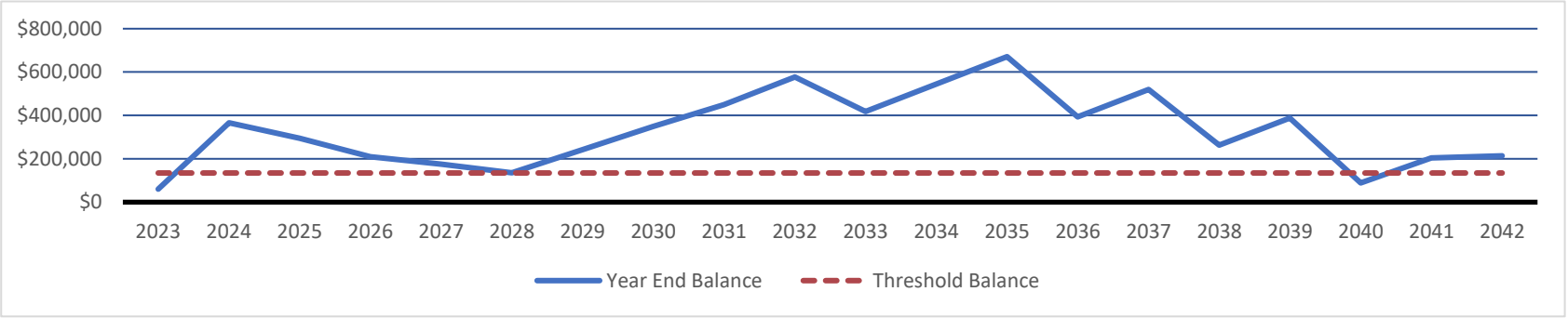
Funding Alternative 1

Year	Starting Balance	Reserve Account Contribution	Average Per Unit/Month	Return on Investments	Repair Expenses	Special Assessments	Year End Balance
2023	$209,707	$50,000	$46.82	$0	$202,000	$222,500	$280,207
2024	$280,207	$55,000	$51.50	$0	$191,360	$0	$143,847
2025	$143,847	$60,500	$56.65	$0	$144,934	$0	$59,413
2026	$59,413	$66,550	$62.31	$0	$156,356	$222,500	$192,107
2027	$192,107	$73,205	$68.54	$0	$127,515	$0	$137,797
2028	$137,797	$80,526	$75.40	$0	$132,372	$0	$85,951
2029	$85,951	$88,578	$82.94	$0	$5,061	$0	$169,467
2030	$169,467	$97,436	$91.23	$0	$5,264	$0	$261,639
2031	$261,639	$107,179	$100.36	$0	$32,846	$0	$335,973
2032	$335,973	$117,897	$110.39	$0	$5,693	$0	$448,177
2033	$448,177	$129,687	$121.43	$0	$290,646	$0	$287,219
2034	$287,219	$142,656	$133.57	$0	$6,158	$0	$423,717
2035	$423,717	$156,921	$146.93	$0	$6,404	$0	$574,234
2036	$574,234	$172,614	$161.62	$0	$410,024	$0	$336,823
2037	$336,823	$172,614	$161.62	$0	$6,927	$0	$502,510
2038	$502,510	$172,614	$161.62	$0	$388,554	$0	$286,570
2039	$286,570	$172,614	$161.62	$0	$7,492	$0	$451,692
2040	$451,692	$172,614	$161.62	$0	$432,434	$0	$191,871
2041	$191,871	$172,614	$161.62	$0	$16,207	$0	$348,278
2042	$348,278	$172,614	$161.62	$0	$123,461	$0	$397,430



Funding Alternative 2

Year	Starting Balance	Reserve Account Contribution	Average Per Unit/Month	Return on Investments	Repair Expenses	Special Assessments	Year End Balance
2023	$209,707	$52,533	$49.19	$0	$202,000	$0	$60,240
2024	$60,240	$52,533	$49.19	$0	$191,360	$445,000	$366,413
2025	$366,413	$72,533	$67.91	$0	$144,934	$0	$294,012
2026	$294,012	$72,533	$67.91	$0	$156,356	$0	$210,189
2027	$210,189	$92,533	$86.64	$0	$127,515	$0	$175,207
2028	$175,207	$92,533	$86.64	$0	$132,372	$0	$135,368
2029	$135,368	$112,533	$105.37	$0	$5,061	$0	$242,840
2030	$242,840	$112,533	$105.37	$0	$5,264	$0	$350,109
2031	$350,109	$132,533	$124.09	$0	$32,846	$0	$449,796
2032	$449,796	$132,533	$124.09	$0	$5,693	$0	$576,636
2033	$576,636	$132,533	$124.09	$0	$290,646	$0	$418,523
2034	$418,523	$132,533	$124.09	$0	$6,158	$0	$544,898
2035	$544,898	$132,533	$124.09	$0	$6,404	$0	$671,027
2036	$671,027	$132,533	$124.09	$0	$410,024	$0	$393,536
2037	$393,536	$132,533	$124.09	$0	$6,927	$0	$519,142
2038	$519,142	$132,533	$124.09	$0	$388,554	$0	$263,122
2039	$263,122	$132,533	$124.09	$0	$7,492	$0	$388,163
2040	$388,163	$132,533	$124.09	$0	$432,434	$0	$88,262
2041	$88,262	$132,533	$124.09	$0	$16,207	$0	$204,588
2042	$204,588	$132,533	$124.09	$0	$123,461	$0	$213,660



APPENDIX B: PROJECT PHOTOGRAPHS

Description View of entrance monument and landscaping	
Photo No. **1**	

Description View of metal sign letters at entrance	
Photo No. **2**	

Description View of flagpole, mail center and gable end of typical 2-story building	
Photo No. **3**	

Description View of upper elevation vinyl siding and architectural wood feature	
Photo No. **4**	

Description View of roof shingles and valley over 2-story building	
Photo No. **5**	

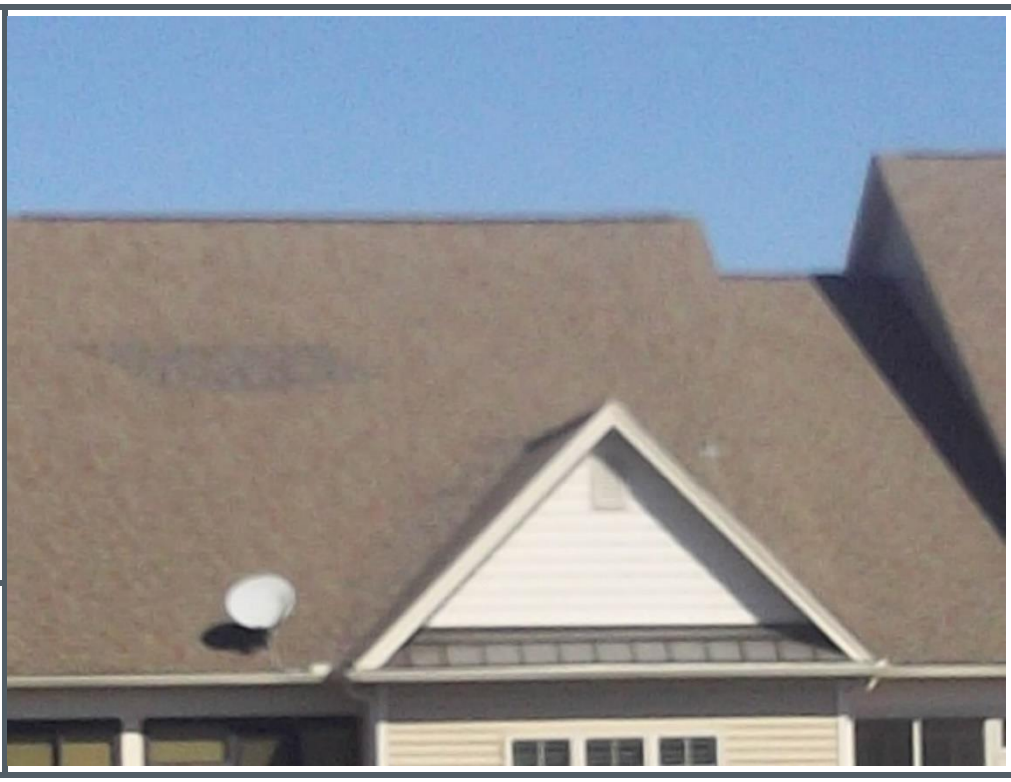
Description Close-up view of vinyl soffit, metal fascia and gutter/downspout	
Photo No. **6**	

Description Another view of two-story building upper elevation and roof shingles	
Photo No. **7**	

Description View of 2-story building front elevation brick veneer repairs	
Photo No. **8**	

Description View of typical one-story townhome building	
Photo No. **9**	

Description View of one-story buildings and pond fountain	
Photo No. **10**	

Description View of replaced section of shingles on one-story building	
Photo No. 11	

Description Another view of typical architectural grade shingles on one-story building roof	
Photo No. 12	

Description View of more roofing shingles and rear screened porches	
Photo No. 13	

Description Typical mail kiosks	
Photo No. 14	

Description Note rusted anchor bolts at base of kiosks	
Photo No. 15	

Description Rip rap swale/dam behind Buildings 4197/4193	
Photo No. 16	

Description Rip rap and discharge of stormwater piping at northwest end of site	
Photo No. 17	

Description View of wood privacy fencing condition and replacement slats	
Photo No. 18	

Description Another view of wood fencing behind one-story buildings	
Photo No. **19**	

Description Sitting area and bench north end of site	
Photo No. **20**	

Description View of elevated wood walkway/golf cart bridge on subject property	
Photo No. 21	

Description Another view of elevated wood walkway and railing	
Photo No. 22	

Description View of structural wood girders/ posts and bracing under elevated system	
Photo No. 23	

Description Small HOA storage building	
Photo No. 24	

Description Graveled parking area and pavers leading to concrete and elevated wood walkway at southwest end of site	
Photo No. 25	

Description View of stormwater retention pond and typical rip rap at embankment	
Photo No. 26	

Description View of rip rap which likely defines edge of pond forebay	
Photo No. 27	

Description Pond outlet/riser structure	
Photo No. 28	

Description View of detention infiltration in foreground and stormwater pond in background	
Photo No. 29	

Description Wood enclosure and location of irrigation well/tank	
Photo No. 30	

Description View of buried plastic piping discharge at edge of pond and concrete pipe stormwater discharge to pond	
Photo No. 31	

Description Typical cracks in concrete driveway	
Photo No. 32	

Description Replaced section of concrete in driveway	
Photo No. **33**	

Description Typical concrete walkway in front and side of unit	
Photo No. **34**	

Description View of replaced section of valley gutter	
Photo No. **35**	

Description Typical cracks in concrete valley gutter	
Photo No. **36**	

Description Large stormwater catch basin in asphalt street	
Photo No. **37**	

Description View of typical asphalt condition with minor cracking	
Photo No. **38**	

Description Smaller catch basin (likely added after original construction) in private street	
Photo No. **39**	

Description View of asphalt street condition and repaired section at curbing	
Photo No. **40**	

Description View of previous standing water in street near gutter	
Photo No. 41	

Description More cracking in concrete valley gutter	
Photo No. 42	