LEVEL 1 REPLACEMENT RESERVE REPORT FY 2023
ANNAPOLIS COVE HOA

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2023 Annapolis Cove HOA v2 03-31-2023

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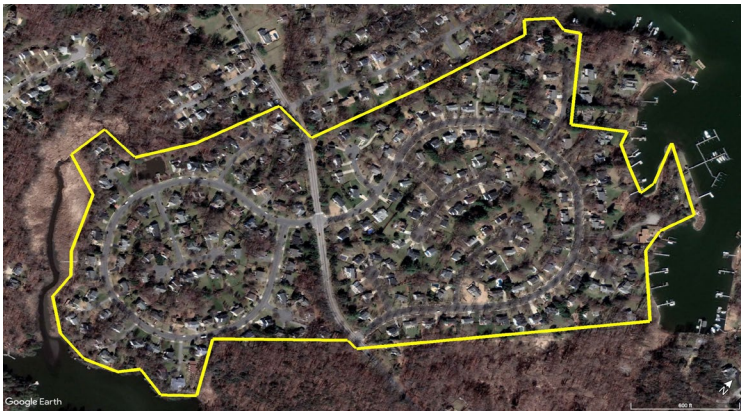
REPLACEMENT RESERVE REPORT

ANNAPOLIS COVE HOA

ANNAPOLIS, MARYLAND
February 14, 2023
Revised March 31, 2023



Description. Annapolis Cove HOA is a Homeowner's Association located in Annapolis, Maryland. Constructed between 1980 and 1990, the community consists of 209 Single-Family Homes. The survey examined the common elements of the property, including:

- Entry Monument, Signage, and Mailbox
- All Recreation Area Roadways and Parking Areas
- Fencing, Site Lighting, and Well
- Beach Access, Bulkhead, Shoreline Revetment, Pier, and Pond
- Tot Lot and Basketball Court

EXECUTIVE SUMMARY
This Reserve Study has been prepared for the Annapolis Cove HOA for the Fiscal Year 2023 covering the period from January 1, 2023 to December 31, 2023. The Replacement Reserves Starting Balance as of January 1, 2023 is reported to be $110,782. The reported Current Annual Funding for Reserves is $9,993. The Recommended Annual Reserve Funding level for 2023 is $20,115.

As shown on Page A.1, Graph #1, the Current Annual Reserve Funding Level will adequately fund the Reserves for the near future. However, the Board should begin increasing its Reserve Funding sooner rather than later. The high inflation rate in the construction industry will make it increasingly more difficult to make up the funding shortfall the longer the Association waits.

MillerDodson welcomes the opportunity to answer questions or to discuss this Reserve Study in more detail should the Board so desire.

Current Funding. The Starting Balance and Current Annual Reserve Funding figures have been supplied by the managing agent and/or Board of Directors. Confirmation or audit of these figures is beyond the scope of the study. For the purposes of this study, it is assumed that the annual contribution will be deposited at the end of each month.

The Association has both the HOA portion and Marina summarized in the following table:

Element	Starting Balance	Current Contribution	Recommended Contribution
HOA	$ 110,782.00	$ 9,993.00	$ 20,115.00
Marina	$ 102,803.54	$ 15,000.00	$ 73,997.00
Total	**$ 213,585.54**	**$ 24,993.00**	**$ 94,112.00**

Level of Service. This study has been performed as a Level 1 Full-Service Reserve Study with Site Visit/On-Site Review as defined by the Community Associations Institute's, National Reserve Study Standards. As such, a complete inventory of components, including their condition and cost for major repair or replacement, was established by the Analyst for the common and limited common elements of this facility based on information provided by the Community Manager and/or Board of Directors, or by those developed from visual assessments, field measurements, takeoffs from to-scale drawings, or review of provided historical data. The analysis, including fund status and funding plan, is developed from the inventory.

To aid in the understanding of this report and its concepts and practices, on our web site, we have developed videos addressing frequently asked topics. In addition, there are posted links covering a variety of subjects under the resources page of our web site at mdareserves.com.

Purpose. The purpose of this Replacement Reserve Study is to provide Annapolis Cove HOA (hereinafter called the Association) with an inventory of the common community facilities and infrastructure components that require periodic replacement. The Study includes a general view of the condition of these items and an effective financial plan to fund projected periodic replacements.

- **Inventory of Items Owned by the Association.** Section B lists the Projected Replacements of the commonly owned items that require periodic replacement using funding from Replacement Reserves. The Replacement Reserve Inventory also provides information about excluded items, which are items whose replacements are not scheduled for funding from Replacement Reserves.

- **Condition of Items Owned by the Association.** Section B includes our estimates of the normal economic life and the remaining economic life for the projected replacements. Section C provides a year-by-year listing of the projected replacements. Section D provides additional detail for items that are unique or deserving of attention because of their condition or the manner in which they have been treated in this study.

- **Financial Plan.** The Association has a fiduciary responsibility to protect the appearance, value, and safety of the property and it is therefore essential the Association have a financial plan that provides funding for the projected replacements. In conformance with American Institute of Certified Public Accountant guidelines, Section A, Replacement Reserve Analysis evaluates the current funding of Replacement Reserves as reported by the Association and recommends annual funding of Replacement Reserves by the Cash Flow Method. Section A, Replacement Reserve Analysis includes graphic and tabular presentations of the reported current funding and the recommended funding based on the Cash Flow Method. An Executive Summary of these calculations is provided on Page A1.

Basis. The data contained in this Replacement Reserve Study is based upon the following:

- The Request for Proposal submitted and executed by the Association.
- Miller+Dodson performed a visual evaluation on February 14, 2023 to determine a remaining useful life and replacement cost for the commonly owned elements of this facility.
- This study contains additional recommendations to address inflation for the Cash Flow Method only. For this recommendation, Miller+Dodson uses the Producers Price Index (PPI), which gauges inflation in manufacturing and construction. Please see page A5 for further details.

To-Scale Drawings. Site and building plans were used in the development of this study. We recommend the Association assemble and maintain a library of site and building plans of the entire facility. Record drawings should be scanned into an electronic format for safe storage and ease of distribution. Upon request for a nominal fee, Miller+Dodson can provide scanning services.

Acknowledgment. Miller+Dodson Associates would like to acknowledge the assistance and input of Ryan Brassel, Board President, and Jessica Bonsall, Community Association Manager, who provided very helpful insight into the current operations of the property.

Analyst's Credentials. Mr. Craig Amaral holds an Associate's Degree in Architectural and Construction Technology from Montgomery College in Rockville, Maryland, with continuing courses in Bachelor of Science programs in Physical Science at the University of Maryland College Park, Maryland, and Electrical Engineering at Capitol College in Laurel, Maryland. In addition, he has completed several certificate programs in Managing Government Contracts from the Masters Institute for Government Contracting. Craig has over 25 years of experience as a construction management consultant, with 40 years of experience as an Executive Project Manager, Project Manager, Estimator, and Construction Inspector. He has served as Corporate Vice President for a mechanical prime contractor and Principle in his own construction consulting firm. Mr. Amaral is currently a reserve analyst for Miller+Dodson, serving the greater Baltimore/Washington Metropolitan area.

Respectfully Submitted,

millerdodson
CAPITAL RESERVE CONSULTANTS

Craig Amaral
Craig Amaral

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SECTION A - FINANCIAL ANALYSIS

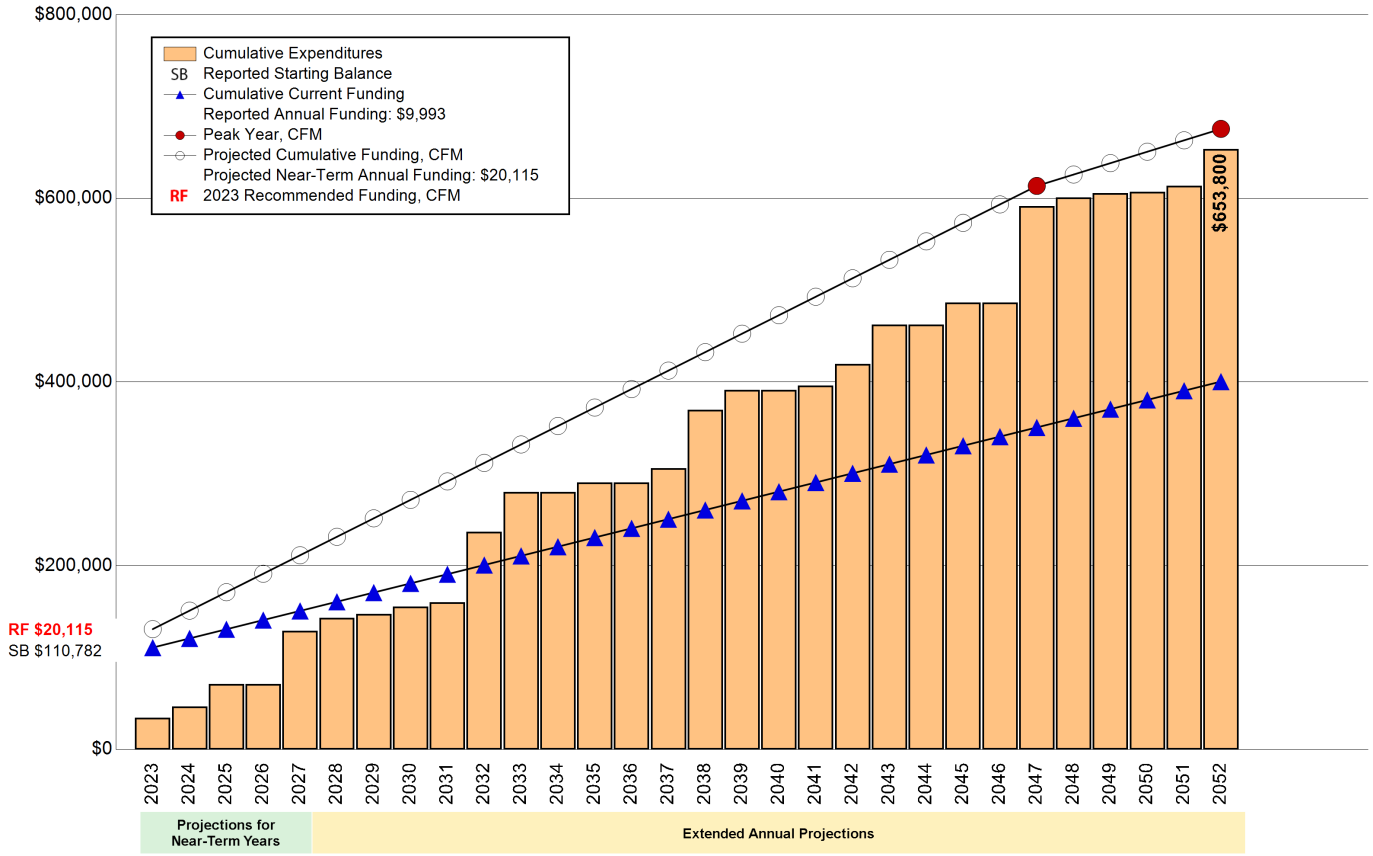
The Annapolis Cove HOA Replacement Reserve Analysis uses the Cash Flow Method (CFM) to calculate Replacement Reserve funding for the periodic replacement of the 51 Projected Replacements identified in the Replacement Reserve Inventory.

$20,115 **RECOMMENDED REPLACEMENT RESERVE FUNDING FOR THE STUDY YEAR, 2023**
$8.02 Per unit (average), minimum monthly funding of Replacement Reserves

We recommend the Association adopt a Replacement Reserve Funding Plan based on the annual funding recommendation above. Inflation adjusted funding for subsequent years is shown on Page A.5.

Annapolis Cove HOA reports a Starting Balance of $110,782 and Annual Funding totaling $9,993, which is inadequate to fund projected replacements starting in 2032. See Page A.3 for a more detailed evaluation.

#1 - Cumulative Replacement Reserve Funding and Expenditures Graph



As shown on Page A.1, Graph #1, the Current Annual Reserve Funding Level will adequately fund the Reserves for the near future. However, the Board should begin increasing its Reserve Funding sooner rather than later. The high inflation rate in the construction industry will make it increasingly more difficult to make up the funding shortfall the longer the Association waits.

REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION

The Annapolis Cove HOA Replacement Reserve Analysis calculations of recommended funding of Replacement Reserves by the Cash Flow Method (CFM) and the evaluation of the Current Funding are based upon the same Study Year, Study Period, Beginning Balance, Replacement Reserve Inventory and Level of Service.

2023 **STUDY YEAR**

The Association reports that their accounting year begins on January 1, and the Study Year, the first year evaluated by the Replacement Reserve Analysis, begins on January 1, 2023.

30 Years **STUDY PERIOD**

The Replacement Reserve Analysis evaluates the funding of Replacement Reserves over a 30-year Study Period

$110,782 **STARTING BALANCE**

The Association reports Replacement Reserves on Deposit totaling $110,782 at the start of the Study Year.

Level One **LEVEL OF SERVICE**

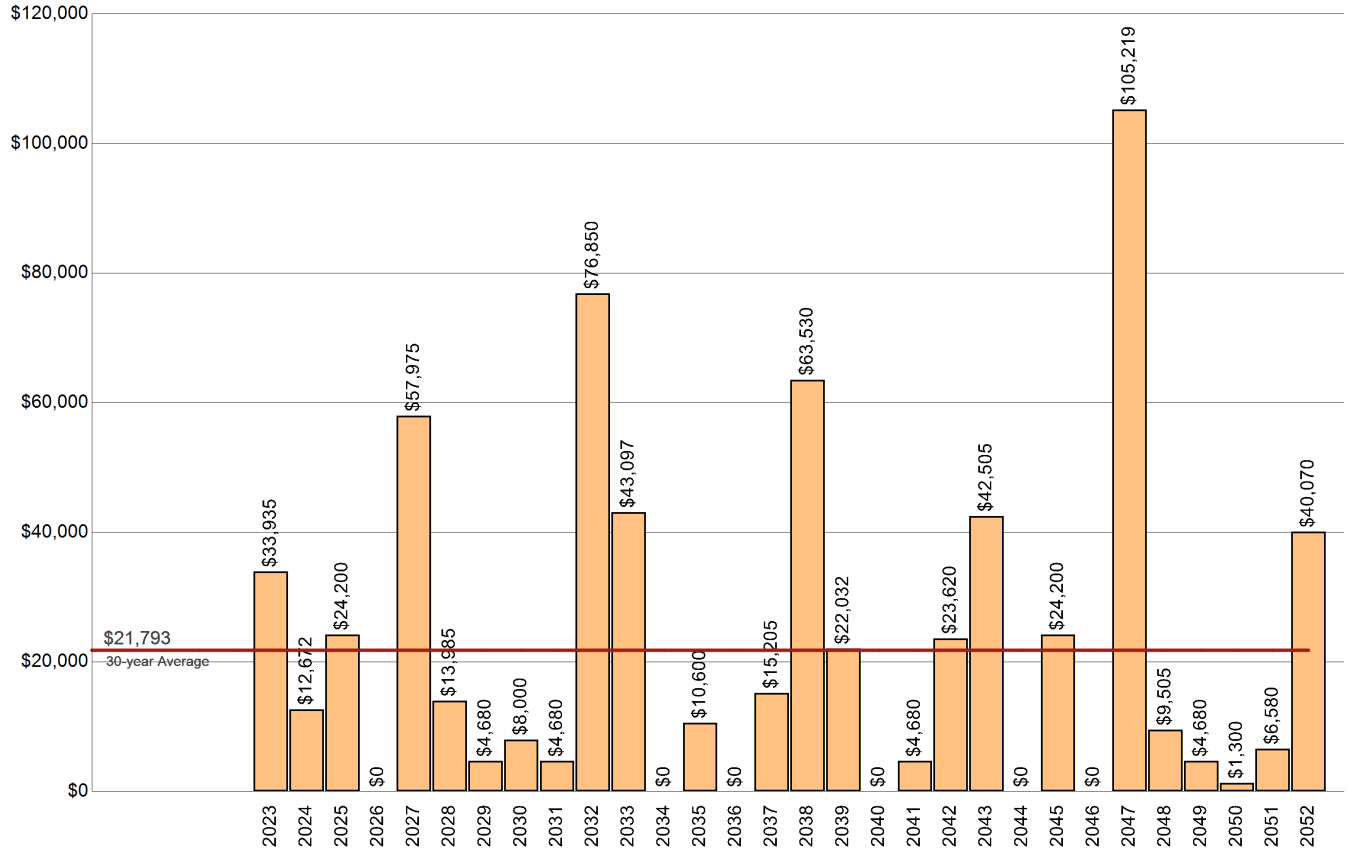
The Replacement Reserve Inventory has been developed in compliance with the National Reserve Study Standards for a Level One Study, as defined by the Community Associations Institute (CAI).

$653,800 **REPLACEMENT RESERVE INVENTORY - PROJECTED REPLACEMENTS**

The Annapolis Cove HOA Replacement Reserve Inventory identifies 51 items that will require periodic replacement, that are to be funded from Replacement Reserves. We estimate the cost of these replacements will be $653,800 over the 30-year Study Period. The Projected Replacements are divided into 2 major categories starting on Page B.3. Pages B.1-B.2 provide detailed information on the Replacement Reserve Inventory.

#2 - Annual Expenditures for Projected Replacements Graph

This graph shows annual expenditures for Projected Replacements over the 30-year Study Period. The red line shows the average annual expenditure of $21,793. Section C provides a year by year Calendar of these expenditures.



UPDATING OF THE FUNDING PLAN

The Association has a responsibility to review the Funding Plan annually. The review should include a comparison and evaluation of actual reserve funding with recommended levels shown on Page A.4 and A.5. The Projected Replacements listed on Page C.2 should be compared with any replacements accomplished and funded from Replacement Reserves. Discrepancies should be evaluated and if necessary, the Reserve Study should be updated or a new study commissioned. We recommend annual increases in replacement reserve funding to account for the impact of inflation. Inflation Adjusted Funding is discussed on Page A.5.

UPDATING OF THE REPLACEMENT RESERVE STUDY

At a minimum, the Replacement Reserve Study should be professionally updated every three to five years or after completion of a major replacement project. Updating should also be considered if during the annual review of the Funding Plan, discrepancies are noted between projected and actual reserve funding or replacement costs. Updating may also be necessary if there is a meaningful discrepancy between the actual inflation rate and the inflation rate used for the Inflation Adjusted Funding of Replacement Reserves on Page A.5.

ANNUAL EXPENDITURES AND CURRENT FUNDING

The annual expenditures that comprise the $653,800 of Projected Expenditures over the 30-year Study Period and the impact of the Association continuing to fund Replacement Reserves at the current level are detailed in Table 3.

#3 - Table of Annual Expenditures and Current Funding Data - Years 1 through 30

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Starting Balance	$110,782									
Projected Replacements	($33,935)	($12,672)	($24,200)		($57,975)	($13,985)	($4,680)	($8,000)	($4,680)	($76,850)
Annual Deposit	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993
End of Year Balance	$86,840	$84,161	$69,954	$79,947	$31,965	$27,973	$33,286	$35,279	$40,592	($26,265)
Cumulative Expenditures	($33,935)	($46,607)	($70,807)	($70,807)	($128,782)	($142,767)	($147,447)	($155,447)	($160,127)	($236,977)
Cumulative Receipts	$120,775	$130,768	$140,761	$150,754	$160,747	$170,740	$180,733	$190,726	$200,719	$210,712
Year	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**	**2042**
Projected Replacements	($43,097)		($10,600)		($15,205)	($63,530)	($22,032)		($4,680)	($23,620)
Annual Deposit	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993
End of Year Balance	($59,369)	($49,376)	($49,983)	($39,990)	($45,202)	($98,739)	($110,778)	($100,785)	($95,472)	($109,099)
Cumulative Expenditures	($280,074)	($280,074)	($290,674)	($290,674)	($305,879)	($369,409)	($391,441)	($391,441)	($396,121)	($419,741)
Cumulative Receipts	$220,705	$230,698	$240,691	$250,684	$260,677	$270,670	$280,663	$290,656	$300,649	$310,642
Year	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**	**2052**
Projected Replacements	($42,505)		($24,200)		($105,219)	($9,505)	($4,680)	($1,300)	($6,580)	($40,070)
Annual Deposit	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993	$9,993
End of Year Balance	($141,611)	($131,618)	($145,825)	($135,832)	($231,058)	($230,570)	($225,257)	($216,564)	($213,151)	($243,228)
Cumulative Expenditures	($462,246)	($462,246)	($486,446)	($486,446)	($591,665)	($601,170)	($605,850)	($607,150)	($613,730)	($653,800)
Cumulative Receipts	$320,635	$330,628	$340,621	$350,614	$360,607	$370,600	$380,593	$390,586	$400,579	$410,572

EVALUATION OF CURRENT FUNDING

The evaluation of Current Funding (Starting Balance of $110,782 & annual funding of $9,993), is done in today's dollars with no adjustments for inflation or interest earned on Replacement Reserves. The evaluation assumes Replacement Reserves will only be used for the 51 Projected Replacements identified in the Replacement Reserve Inventory and that the Association will continue Annual Funding of $9,993 throughout the 30-year Study Period.

Annual Funding of $9,993 is approximately 50 percent of the $20,115 recommended Annual Funding calculated by the Cash Flow Method for 2023, the Study Year.

See the Executive Summary for the Current Funding Statement.

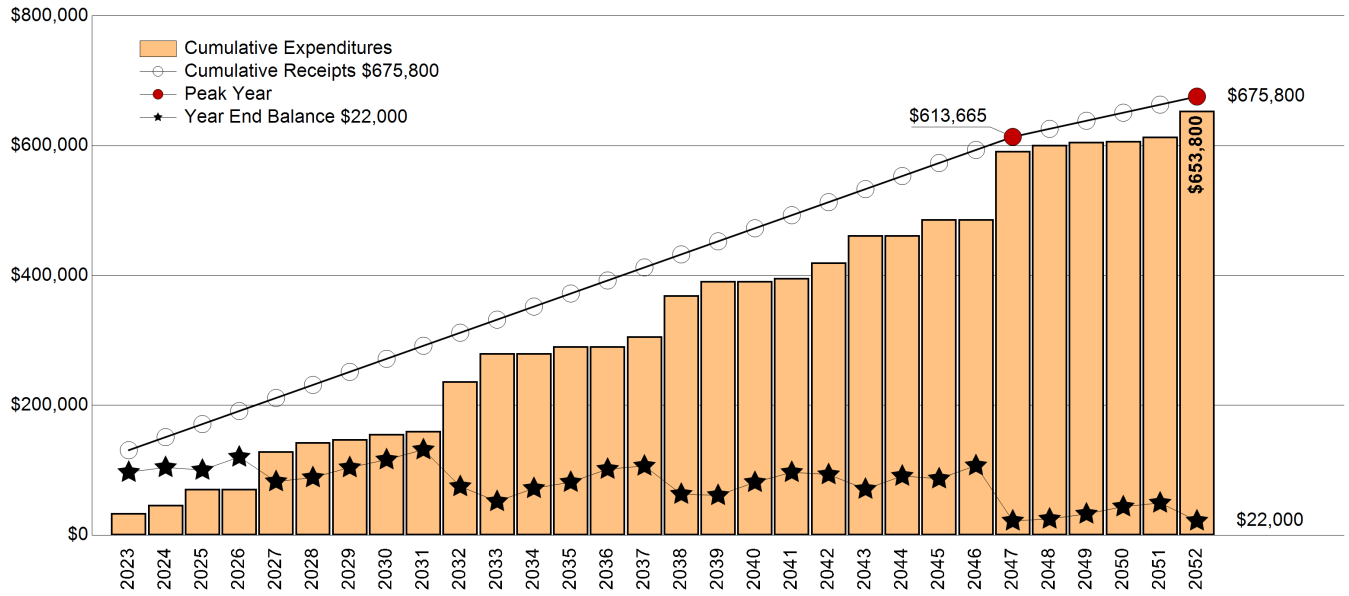
CASH FLOW METHOD FUNDING

$20,115 **RECOMMENDED REPLACEMENT RESERVE FUNDING FOR 2023**
$8.02 Per unit (average), minimum monthly funding of Replacement Reserves

Recommended Replacement Reserve Funding has been calculated using the Cash Flow Method (also called the Straight Line or Threshold Method). This method calculates a constant annual funding between peaks in cumulative expenditures, while maintaining a Minimum Balance (threshold) in the Peak Years.

- **Peak Years.** The First Peak Year occurs in 2047 with Replacement Reserves on Deposit dropping to the Minimum Balance after the completion of $591,665 of replacements from 2023 to 2047. Recommended funding is anticipated to decline in 2048. Peak Years are identified in Chart 4 and Table 5.
- **Threshold (Minimum Balance).** The calculations assume a Minimum Balance of $22,000 will always be held in reserve, which is calculated by rounding the 12-month 30-year average annual expenditure of $21,793 as shown on Graph #2.
- **Cash Flow Method Study Period.** Cash Flow Method calculates funding for $653,800 of expenditures over the 30-year Study Period. It does not include funding for any projects beyond 2052 and in 2052, the end of year balance will always be the Minimum Balance.

#4 - Cash Flow Method - Graph of Cumulative Receipts and Expenditures - Years 1 through 30



#5 - Cash Flow Method - Table of Receipts & Expenditures - Years 1 through 30

Year	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Starting Balance	$110,782									
Projected Replacements	($33,935)	($12,672)	($24,200)		($57,975)	($13,985)	($4,680)	($8,000)	($4,680)	($76,850)
Annual Deposit	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115
End of Year Balance	$96,962	$104,406	$100,321	$120,436	$82,577	$88,707	$104,142	$116,258	$131,693	$74,958
Cumulative Expenditures	($33,935)	($46,607)	($70,807)	($70,807)	($128,782)	($142,767)	($147,447)	($155,447)	($160,127)	($236,977)
Cumulative Receipts	$130,897	$151,013	$171,128	$191,243	$211,359	$231,474	$251,589	$271,705	$291,820	$311,935

Year	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Projected Replacements	($43,097)		($10,600)		($15,205)	($63,530)	($22,032)		($4,680)	($23,620)
Annual Deposit	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115	$20,115
End of Year Balance	$51,977	$72,092	$81,607	$101,722	$106,633	$63,218	$61,301	$81,417	$96,852	$93,347
Cumulative Expenditures	($280,074)	($280,074)	($290,674)	($290,674)	($305,879)	($369,409)	($391,441)	($391,441)	($396,121)	($419,741)
Cumulative Receipts	$332,051	$352,166	$372,281	$392,396	$412,512	$432,627	$452,742	$472,858	$492,973	$513,088

Year	2043	2044	2045	2046	1st Peak - 2047	2048	2049	2050	2051	2nd Peak - 2052
Projected Replacements	($42,505)		($24,200)		($105,219)	($9,505)	($4,680)	($1,300)	($6,580)	($40,070)
Annual Deposit	$20,115	$20,115	$20,115	$20,115	$20,115	$12,427	$12,427	$12,427	$12,427	$12,427
End of Year Balance	$70,958	$91,073	$86,988	$107,104	$22,000	$24,922	$32,669	$43,796	$49,643	$22,000
Cumulative Expenditures	($462,246)	($462,246)	($486,446)	($486,446)	($591,665)	($601,170)	($605,850)	($607,150)	($613,730)	($653,800)
Cumulative Receipts	$533,204	$553,319	$573,434	$593,550	$613,665	$626,092	$638,519	$650,946	$663,373	$675,800

INFLATION ADJUSTED FUNDING

The Cash Flow Method calculations on Page A4 have been done in today's dollars with no adjustment for inflation. At Miller+Dodson, we believe that long-term inflation forecasting is effective at demonstrating the power of compounding, not at calculating appropriate funding levels for Replacement Reserves. We have developed this proprietary model to estimate the short-term impact of inflation on Replacement Reserve funding.

$20,115 **2023 - CASH FLOW METHOD RECOMMENDED FUNDING**

The 2023 Study Year calculations have been made using current replacement costs (see Page B.2), modified by the Analyst for any project specific conditions.

$21,423 **2024 - INFLATION ADJUSTED FUNDING**

A new analysis calculates the 2024 funding based on three assumptions:

- Replacement Reserves on Deposit totaling $96,962 on January 1, 2024.
- All 2023 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than $33,935.
- Construction Cost Inflation of 6.50 percent in 2023.

The $21,423 inflation adjusted funding in 2024 is a 6.50 percent increase over the non-inflation adjusted funding of $20,115.

$22,815 **2025 - INFLATION ADJUSTED FUNDING**

A new analysis calculates the 2025 funding based on three assumptions:

- Replacement Reserves on Deposit totaling $117,784 on January 1, 2025.
- All 2024 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than $12,676.
- Construction Cost Inflation of 6.50 percent in 2024.

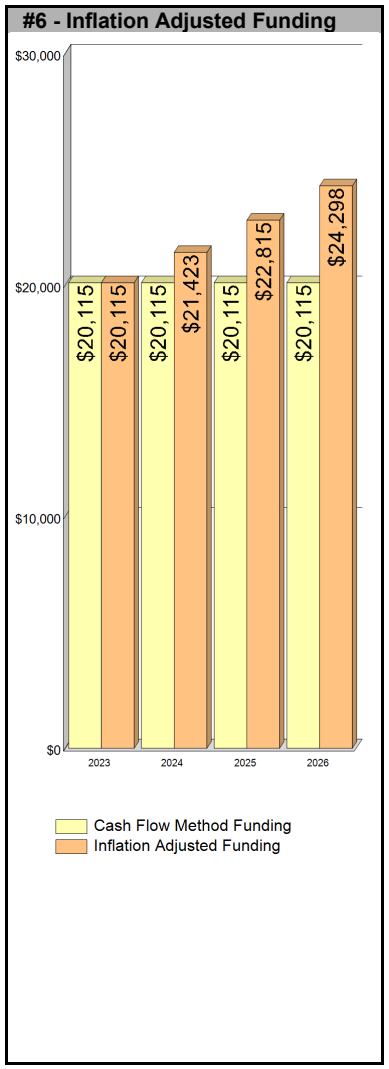
The $22,815 inflation adjusted funding in 2025 is a 13.42 percent increase over the non-inflation adjusted funding of $20,115.

$24,298 **2026 - INFLATION ADJUSTED FUNDING**

A new analysis calculates the 2026 funding based on three assumptions:

- Replacement Reserves on Deposit totaling $111,496 on January 1, 2026.
- All 2025 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than $20,818.
- Construction Cost Inflation of 6.50 percent in 2025.

The $24,298 inflation adjusted funding in 2026 is a 20.79 percent increase over the non-inflation adjusted funding of $20,115.



Year Four and Beyond

The inflation-adjusted funding calculations outlined above are not intended to be a substitute for periodic evaluation of common elements by an experienced Reserve Analyst. Industry Standards, lender requirements, and many state and local statutes require a Replacement Reserve Study to be professionally updated every 3 to 5 years.

Inflation Adjustment

Prior to approving a budget based upon the 2024, 2025 and 2026 inflation-adjusted funding calculations above, the 6.50 percent base rate of inflation used in our calculations should be compared to rates published by the Bureau of Labor Statistics. If there is a significant discrepancy (over 1 percentage point), contact Miller+Dodson Associates prior to using the Inflation Adjusted Funding.

Interest on Reserves

The recommended funding calculations do not account for interest earned on Replacement Reserves. In 2023, based on a 1.50 percent interest rate, we estimate the Association may earn $1,558 on an average balance of $103,872, $1,611 on an average balance of $107,373 in 2024, and $1,720 on $114,640 in 2025. The Association may elect to attribute 100 percent of the earned interest to Reserves, resulting in a reduction in the 2023 funding from $20,115 to $18,557 (a 7.74 percent reduction), $21,423 to $19,812 in 2024 (a 7.51 percent reduction), and $22,815 to $21,096 in 2025 (a 7.53 percent reduction).

REPLACEMENT RESERVE STUDY - SUPPLEMENTAL COMMENTS

[3/24/2023] Revised starting balance per Board

SECTION B - REPLACEMENT RESERVE INVENTORY

- **PROJECTED REPLACEMENTS.** Annapolis Cove HOA - Replacement Reserve Inventory identifies 51 items which are Projected Replacements and the periodic replacements of these items are scheduled for funding from Replacement Reserves. The Projected Replacements have an estimated one-time replacement cost of $363,298. Cumulative Replacements totaling $653,800 are scheduled in the Replacement Reserve Inventory over the 30-year Study Period. Cumulative Replacements include those components that are replaced more than once during the period of the study.

  Projected Replacements are the replacement of commonly-owned physical assets that require periodic replacement and whose replacement is to be funded from Replacement Reserves.

- **EXCLUDED ITEMS.** Some of the items contained in the Replacement Reserve Inventory are 'Excluded Items'. Multiple categories of items are typically excluded from funding by Replacement Reserves, including but not limited to:

  Tax Code. The United States Tax Code grants very favorable tax status to Replacement Reserves, conditioned on expenditures being made within certain guidelines. These guidelines typically exclude maintenance activities, minor repairs, and capital improvements.

  Value. Items with a replacement cost of less than $1000 and/or a normal economic life of less than 3 years are typically excluded from funding from Replacement Reserves. This exclusion should reflect the Association policy on the administration of Replacement Reserves. If the Association has selected an alternative level, it will be noted in the Replacement Reserve Inventory - General Comments on Page B.2.

  Long-lived Items. Items are excluded from the Replacement Reserve Inventory when items are properly maintained and are assumed to have a life equal to the property.

  Unit improvements. Items owned by a single unit and where the items serve a single unit are generally assumed to be the responsibility of that unit, not the Association.

  Other non-common improvements. Items owned by the local government, public and private utility companies, the United States Postal Service, Master Associations, state and local highway authorities, etc., may be installed on property that is owned by the Association. These types of items are generally not the responsibility of the Association and are excluded from the Replacement Reserve Inventory.

- **CATEGORIES.** The 51 items included in the Annapolis Cove HOA Replacement Reserve Inventory are divided into 2 major categories. Each category is printed on a separate page, beginning on page B.3.

- **LEVEL OF SERVICE.** This Replacement Reserve Inventory has been developed in compliance with the standards established for a Level One Study - Full Service, as defined by the National Reserve Study Standards, established in 1998 by Community Associations Institute, which states:

  A Level I - Full-Service Reserve Study includes the computation of complete component inventory information regarding commonly owned components provided by the Association, quantities derived from field measurements, and/or quantity takeoffs from to-scale engineering drawings that may be made available. The condition of all components is ascertained from a visual inspection of each component by the analyst. The remaining economic life and the value of the components are provided based on these observations and the funding status and funding plan are then derived from the analysis of this data.

REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (CONT'D)

- **INVENTORY DATA.** Each of the 51 Projected Replacements listed in the Replacement Reserve Inventory includes the following data:

  Item Number. The Item Number is assigned sequentially and is intended for identification purposes only.

  Item Description. We have identified each item included in the Inventory. Additional information may be included in the Comments section at the bottom of each page of the Inventory.

  Units. We have used standard abbreviations to identify the number of units including SF-square feet, LF-lineal feet, SY-square yard, LS-lump sum, EA-each, and PR-pair. Non-standard abbreviations are noted in the Comments section at the bottom of the page.

  Number of Units. The methods used to develop the quantities are discussed in "Level of Service" above.

  Unit Replacement Cost. We use four sources to develop the unit cost data shown in the Inventory; actual replacement cost data provided by the client, information provided by local contractors and suppliers, industry standard estimating manuals, and a cost database we have developed based upon our detailed interviews with contractors and service providers who are specialists in their respective lines of work.

  Normal Economic Life (Years). The number of years that a new and properly installed item should be expected to remain in service.

  Remaining Economic Life (Years). The estimated number of years before an item will need to be replaced. In "normal" conditions, this could be calculated by subtracting the age of the item from the Normal Economic Life of the item, but only rarely do physical assets age "normally". Some items may have longer or shorter lives depending on many factors such as environment, initial quality of the item, maintenance, etc.

  Total Replacement Cost. This is calculated by multiplying the Unit Replacement Cost by the Number of Units.

- **PARTIAL FUNDING.** Items may have been included in the Replacement Reserve Inventory at less than 100 percent of their full quantity and/or replacement cost. This is done on items that will never be replaced in their entirety, but which may require periodic replacements over an extended period of time. The assumptions that provide the basis for any partial funding are noted in the Comments section.
- **REMAINING ECONOMIC LIFE GREATER THAN 30 YEARS.** The calculations do not include funding for initial replacements beyond 30 years. These replacements are included in this Study for tracking and evaluation. They should be included for funding in future Studies, when they enter the 30-year window.
- **ACCURACY OF THE ANALYSIS.** The accuracy of the Replacement Reserve Analysis is dependent upon expenditures from Replacement Reserves being made ONLY for the 51 Projected Replacements specifically listed in the Replacement Reserve Inventory. The inclusion/exclusion of items from the Replacement Reserve Inventory is discussed on Page B.1.

SITE ITEMS
PROJECTED REPLACEMENTS

NEL- Normal Economic Life (yrs)
REL- Remaining Economic Life (yrs)

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
1	Entrance monument, repoint masonry (10%	sf	54	$10.00	10	10	$540
2	Entrance monument, painted metal sign	sf	10	$225.00	25	19	$2,250
3	Entrance monument metal letters	ea	39	$120.00	25	16	$4,680
4	Entry monument lighting	ea	3	$210.00	5	none	$630
5	Meter socket and disconnect	ea	4	$2,000.00	50	7	$8,000
6	Flag Pole	ea	1	$600.00	30	20	$600
7	Sign and post, info graphic (allowance)	ea	1	$1,650.00	35	29	$1,650
8	Stairs wood, refurbish	sf	250	$20.00	10	9	$5,000
9	Stairs wood, replace	sf	250	$65.00	30	29	$16,250
10	Stair railings, PTL wood	ft	120	$35.00	15	14	$4,200
11	Stairs terrace, PTL wood riser	sf	80	$45.00	20	19	$3,600
12	Observation pier stairs, PTL wood riser	ft	80	$45.00	15	1	$3,600
13	Observation pier reset flagstone pavers	sf	160	$8.00	20	10	$1,280
14	Miscl. wood structures (25% allowance)	ls	1	$1,400.00	5	none	$1,400

Replacement Costs - Page Subtotal $53,680

COMMENTS

SITE ITEMS
PROJECTED REPLACEMENTS

NEL- Normal Economic Life (yrs)
REL- Remaining Economic Life (yrs)

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Bulkhead, replace						EXCLUDED
	Bulkhead, refurbish, 10% of repl.						EXCLUDED
	Bulkhead, cap						EXCLUDED
15	Riprap shoreline revetment (33% allowance)	ft	198	$100.00	15	15	$19,800
16	Pond dredging (33% allowance)	cy	561	$95.00	20	4	$53,295
17	Pond fountain	ea	1	$7,500.00	10	9	$7,500
18	Fence, 6' PTL, wood board	ft	100	$30.00	20	19	$3,000
19	Fence, wooden split-rail, 20% allowance	ea	100	$32.00	15	14	$3,200
20	Fence, add for woven wire mesh 3-rail	ft	500	$1.85	25	14	$925
21	Tree replacement (allowance)	ea	1	$24,000.00	20	none	$24,000
	Asphalt pavement, flag drives, seal coat						EXCLUDED
	Asphalt pavement, flag drives, overlay						EXCLUDED
	Irrigation controller						EXCLUDED
						Replacement Costs - Page Subtotal	$111,720

COMMENTS

- Note: Please see Paragraph entitled “TAX CODE” on page C1. Under IRS guidelines the planting of seasonal plants is considered a maintenance item and therefore not reservable. We recommend that you contact your Association’s tax professional to discuss your inclusion of this item within your Reserve Study. However, Architectural or Foundational plantings, like trees or large shrubs is a reservable item. We have included it at the Association's request.
- Bulkhead, replace - [03/24/2023] excluded per board
- Bulkhead, refurbish, 10% of repl. - [03/24/2023] excluded per board
- Bulkhead, cap - [03/24/2023] excluded per board
- Asphalt pavement, flag drives, seal coat - [02/26/2023] excluded per board
- Asphalt pavement, flag drives, overlay - [02/26/2023] excluded per board
- Irrigation controller - [02/27/2023] excluded per analyst

SITE ITEMS - SHARED COMPONENTS

PROJECTED REPLACEMENTS

NEL- Normal Economic Life (yrs)
REL- Remaining Economic Life (yrs)

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
22	Asphalt pavement, common, overlay (75%	sf	12,900	$1.75	20	15	$22,575
23	Asphalt pavement, common, seal coat (75%	sf	12,900	$0.25	5	none	$3,225
24	Concrete driveway apron, common (75%	sf	100	$14.00	60	20	$1,400
25	Bollards (75% allowance)	ea	6	$300.00	30	10	$1,800
26	Site light, standard single head, LED	ea	1	$700.00	20	5	$700
27	Site light, 10' fiberglass pole	ea	1	$2,000.00	35	5	$2,000
	Entrance monument, carved wood sign (Marina)						EXCLUDED
	Sign and post, other (Marina)						EXCLUDED
	Pedestal mailbox (Marina)						EXCLUDED
	Cable guardrail with wood post (Marina)						EXCLUDED
	Well and casing						EXCLUDED
	Well pump and pressure tank						EXCLUDED
						Replacement Costs - Page Subtotal	$31,700

COMMENTS

- We have assumed that the Association will replace the asphalt pavement by the installation of a 2-inch-thick overlay. The pavement will need to be milled prior to the installation of the overlay. Milling and the cost of minor repairs (5 to 10 percent of the total area) to the base materials and bearing soils beneath the pavement are included in the cost shown above.
- Seal coating or rejuvenation has been shown to extend service life of asphalt if performed at an early stage, once asphalt has fully cured and then cyclically thereafter. This is the best practice to extend life of the asphalt pavement. The Unit Cost includes crack sealing, and line/curb painting. The Asphalt paving industries recommendation/best practice is to sealcoat approximately one (1) year after the mill and overlay is performed. One (1) year allows the excess oils in the paving mixture to “weather off”. Sealing the following year locks in the remaining essential oils that keep the pavement pliable. Cyclical reapplication of the sealcoat, approximately every five (5) years, will keep those oils in expanding its useful life.
- Entrance monument, carved wood sign (Marina) - [02/27/2023] excluded per board
- Sign and post, other (Marina) - [02/27/2023] excluded per board
- Pedestal mailbox (Marina) - [02/27/2023] excluded per board
- Cable guardrail with wood post (Marina) - [02/27/2023] excluded per board
- Well and casing - [02/28/2023] excluded per board
- Well pump and pressure tank - [02/28/2023] excluded per board

RECREATION ITEMS
PROJECTED REPLACEMENTS

NEL- Normal Economic Life (yrs)
REL- Remaining Economic Life (yrs)

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
28	HOA Dock, decking	sf	540	$21.00	15	9	$11,340
29	HOA Dock structure	sf	540	$31.00	30	9	$16,740
30	HOA Dock piling (25% allowance)	ea	5	$1,200.00	15	9	$6,000
31	Floating dock, refurbish	sf	220	$21.00	10	2	$4,620
32	Floating dock, deck & frame	sf	220	$55.00	20	2	$12,100
33	Floating dock, replace floats	ea	8	$350.00	20	2	$2,800
34	Pond observation pier decking, PTL	sf	432	$21.00	15	1	$9,072
35	Pond observation pier structure, PTL	sf	432	$31.00	30	10	$13,392
36	Pond observation pier piling (10" diameter)	ea	9	$1,400.00	30	10	$12,600
37	Pond observation pier, PTL railing	ft	90	$55.00	15	5	$4,950
38	Kayak and paddle board racks	ea	43	$300.00	15	15	$12,900
39	Catamaran rack	ea	1	$1,300.00	15	12	$1,300

Replacement Costs - Page Subtotal $107,814

COMMENTS

RECREATION ITEMS
PROJECTED REPLACEMENTS

NEL- Normal Economic Life (yrs)
REL- Remaining Economic Life (yrs)

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
40	Tot lot, border recycled plastic	ft	112	$17.00	30	24	$1,904
41	Tot lot surfacing, rubber mulch (3")	sf	780	$6.00	2	none	$4,680
42	Tot lot, ADA MP structure, 2 platforms and 2 slides	ea	1	$28,000.00	15	9	$28,000
43	Observation Pier bench, wood with metal supports	ea	2	$850.00	15	10	$1,700
44	Observation Pier picnic tables with metal supports	ea	1	$1,850.00	15	10	$1,850
45	Picnic table (PTL wood table) (25% allowance)	ea	1	$1,080.00	15	5	$1,080
46	Bench, PTL wood (7')	ea	4	$750.00	15	15	$3,000
47	Chair, Adirondack	ea	6	$350.00	10	9	$2,100
48	End table, Adirondack	ea	2	$85.00	10	9	$170
49	Basketball court concrete flatwork	sf	700	$14.00	60	54	$9,800
50	Basketball pole & backstop	ea	1	$2,200.00	20	14	$2,200
51	Bike rack, 9 bikes	ea	1	$1,900.00	30	28	$1,900

Replacement Costs - Page Subtotal $58,384

COMMENTS

VALUATION EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Bicycle rack						EXCLUDED
	Property identification signage						EXCLUDED
	Miscellaneous signage						EXCLUDED
	Basketball hoop & net						EXCLUDED
	Dock bumpers, cleats, and ropes						EXCLUDED
	Wheel borrows						EXCLUDED

VALUATION EXCLUSIONS

Comments

- Valuation Exclusions. For ease of administration of the Replacement Reserves and to reflect accurately how Replacement Reserves are administered, items with a dollar value less than $1000 have not been scheduled for funding from Replacement Reserve. Examples of items excluded by Replacement Reserves by this standard are listed above.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

LONG-LIFE EXCLUSIONS
Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Masonry features						EXCLUDED
	Common element electrical services						EXCLUDED

LONG-LIFE EXCLUSIONS
Comments

- Long Life Exclusions. Components that when properly maintained, can be assumed to have a life equal to the property as a whole, are normally excluded from the Replacement Reserve Inventory. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- Exterior masonry is generally assumed to have an unlimited economic life, but periodic repointing is required, and we have included this for funding in the Replacement Reserve Inventory.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

UNIT IMPROVEMENTS EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	All interior & exterior building components						EXCLUDED

UNIT IMPROVEMENTS EXCLUSIONS

Comments

- Unit improvement Exclusions. We understand that the elements of the project that relate to a single unit are the responsibility of that unit owner. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

UTILITY EXCLUSIONS
Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Primary electric feeds						EXCLUDED
	Electric transformers						EXCLUDED
	Cable TV systems and structures						EXCLUDED
	Telephone cables and structures						EXCLUDED
	Gas mains and meters						EXCLUDED
	Water mains and meters						EXCLUDED

UTILITY EXCLUSIONS
Comments

- Utility Exclusions. Many improvements owned by utility companies are on property owned by the Association. We have assumed that repair, maintenance, and replacements of these components will be done at the expense of the appropriate utility company. Examples of items excluded from funding Replacement Reserves by this standard are listed above.

- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

MAINTENANCE AND REPAIR EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Cleaning of asphalt pavement						EXCLUDED
	Crack sealing of asphalt pavement						EXCLUDED
	Painting of curbs						EXCLUDED
	Striping of parking spaces						EXCLUDED
	Numbering of parking spaces						EXCLUDED
	Landscaping and site grading						EXCLUDED
	Tree pruning						EXCLUDED
	Mulch						EXCLUDED
	Janitorial service						EXCLUDED

MAINTENANCE AND REPAIR EXCLUSIONS

Comments

- Maintenance activities, one-time-only repairs, and capital improvements. These activities are NOT appropriately funded from Replacement Reserves. The inclusion of such component in the Replacement Reserve Inventory could jeopardize the special tax status of ALL Replacement Reserves, exposing the Association to significant tax liabilities. We recommend that the Board of Directors discuss these exclusions and Revenue Ruling 75-370 with a Certified Public Accountant.

- Examples of items excluded from funding by Replacement Reserves are listed above. The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

GOVERNMENT EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Government, roadways and parking						EXCLUDED
	Government, sidewalks and curbs						EXCLUDED
	Government, stormwater management						EXCLUDED

GOVERNMENT EXCLUSIONS

Comments

- Government Exclusions. We have assumed that some of the improvements installed on property owned by the Association will be maintained by the state, county, or local government, or other association or other responsible entity. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- Excluded rights-of-way, including adjacent properties and adjacent roadways.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

IRRIGATION SYSTEM EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Irrigation system						EXCLUDED

IRRIGATION SYSTEM EXCLUSIONS

Comments

- Irrigation System Exclusions. We have assumed that the maintenance, repair, and periodic replacement of the components of the extensive irrigation systems at the property will not be funded from Replacement Reserves. These systems should be inspected each spring when the systems are brought online and again each fall when they are winterized. Repair(s) and or replacement(s) should be made in conjunction with these semiannual inspections.

SECTION C - CALENDAR OF PROJECTED ANNUAL REPLACEMENTS

GENERAL STATEMENT. The 51 Projected Replacements in the Annapolis Cove HOA Replacement Reserve Inventory whose replacement is scheduled to be funded from Replacement Reserves are broken down on a year-by-year basis, beginning on Page C.2.

REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

- **REVIEW OF THE REPLACEMENT RESERVE STUDY.** For this study to be effective, it should be reviewed by the Board of Directors, those responsible for the management of the items included in the Replacement Reserve Inventory, and the accounting professionals employed by the Association.
- **REVISIONS.** Revisions will be made to the Replacement Reserve Analysis and Replacement Reserve Inventory in accordance with the written instructions of the Board of Directors. No additional charge is incurred for the first revision if requested in writing within three months of the date of the Replacement Reserve Study. It is our policy to provide revisions in electronic (Adobe PDF) format only. We acknowledge that there are instances in which multiple revisions are necessary. However, unnecessary multiple revisions drain on our time and manpower resources. Therefore, Miller Dodson will exercise its sole discretion as to whether additional charges are incurred.
- **TAX CODE**. The United States Tax Code grants favorable tax status to a common interest development (CID) meeting certain guidelines for their Replacement Reserve. If a CID files their taxes as a 'Corporation' on Form 1120 (IRC Section 277), these guidelines typically require maintenance activities, partial replacements, minor replacements, capital improvements, and one-time only replacements to be excluded from Reserves. A CID cannot co-mingle planning for maintenance activities with capital replacement activities in the Reserves (Revenue Ruling 75-370). Funds for maintenance activities and capital replacements activities must be held in separate accounts. If a CID files taxes as an "Exempt Homeowners Association" using Form 1120H (IRC Section 528), the CID does not have to segregate these activities. However, because the CID may elect to change their method of filing from year to year within the Study Period, we advise using the more restrictive approach. We further recommend that the CID consult with their Accountant and consider creating separate and independent accounts and reserves for large maintenance items, such as painting.
- **CONFLICT OF INTEREST.** Neither Miller - Dodson Associates nor the Reserve Analyst has any prior or existing relationship with this Association which would represent a real or perceived conflict of interest.
- **RELIANCE ON DATA PROVIDED BY THE CLIENT.** Information provided by an official representative of the Association regarding financial, physical conditions, quality, or historical issues is deemed reliable.
- **INTENT.** This Replacement Reserve Study is a reflection of the information provided by the Association and the visual evaluations of the Analyst. It has been prepared for the sole use of the Association and is not for the purpose of performing an audit, quality/forensic analyses, or background checks of historical records.
- **PREVIOUS REPLACEMENTS.** Information provided to Miller - Dodson Associates regarding prior replacements is considered to be accurate and reliable. Our visual evaluation is not a project audit or quality inspection.
- **EXPERIENCE WITH FUTURE REPLACEMENTS.** The Calendar of Annual Projected Replacements, lists replacements we have projected to occur over the Study Period, begins on Page C2. Actual experience in replacing the items may differ significantly from the cost estimates and time frames shown because of conditions beyond our control. These differences may be caused by maintenance practices, inflation, variations in pricing and market conditions, future technological developments, regulatory actions, acts of God, and luck. Some items may function normally during our visual evaluation and then fail without notice.

PROJECTED REPLACEMENTS

Item	2023 - Study Year	$
4	Entry monument lighting	$630
14	Miscl. wood structures (25% allowance)	$1,400
21	Tree replacement (allowance)	$24,000
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$33,935

Item	2024 - YEAR 1	$
12	Observation pier stairs, PTL wood riser	$3,600
34	Pond observation pier decking, PTL	$9,072
Total Scheduled Replacements		$12,672

Item	2025 - YEAR 2	$
31	Floating dock, refurbish	$4,620
32	Floating dock, deck & frame	$12,100
33	Floating dock, replace floats	$2,800
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$24,200

Item	2026 - YEAR 3	$
No Scheduled Replacements		

Item	2027 - YEAR 4	$
16	Pond dredging (33% allowance)	$53,295
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$57,975

Item	2028 - YEAR 5	$
4	Entry monument lighting	$630
14	Miscl. wood structures (25% allowance)	$1,400
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
26	Site light, standard single head, LED	$700
27	Site light, 10' fiberglass pole	$2,000
37	Pond observation pier, PTL railing	$4,950
45	Picnic table (PTL wood table) (25% allowance)	$1,080
Total Scheduled Replacements		$13,985

Item	2029 - YEAR 6	$
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$4,680

Item	2030 - YEAR 7	$
5	Meter socket and disconnect	$8,000
Total Scheduled Replacements		$8,000

PROJECTED REPLACEMENTS

Item	2031 - YEAR 8	$
41	Tot lot surfacing, rubber mulch (3")	$4,680
	Total Scheduled Replacements	$4,680

Item	2032 - YEAR 9	$
8	Stairs wood, refurbish	$5,000
17	Pond fountain	$7,500
28	HOA Dock, decking	$11,340
29	HOA Dock structure	$16,740
30	HOA Dock piling (25% allowance)	$6,000
42	Tot lot, ADA MP structure, 2 platforms and 2 slides	$28,000
47	Chair, Adirondack	$2,100
48	End table, Adirondack	$170
	Total Scheduled Replacements	$76,850

Item	2033 - YEAR 10	$
1	Entrance monument, repoint masonry (10% allowance)	$540
4	Entry monument lighting	$630
13	Observation pier reset flagstone pavers	$1,280
14	Miscl. wood structures (25% allowance)	$1,400
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
25	Bollards (75% allowance)	$1,800
35	Pond observation pier structure, PTL	$13,392
36	Pond observation pier piling (10" diameter)	$12,600
41	Tot lot surfacing, rubber mulch (3")	$4,680
43	Observation Pier bench, wood with metal supports (7')	$1,700
44	Observation Pier picnic tables with metal supports	$1,850
	Total Scheduled Replacements	$43,097

Item	2034 - YEAR 11	$
	No Scheduled Replacements	

Item	2035 - YEAR 12	$
31	Floating dock, refurbish	$4,620
39	Catamaran rack	$1,300
41	Tot lot surfacing, rubber mulch (3")	$4,680
	Total Scheduled Replacements	$10,600

Item	2036 - YEAR 13	$
	No Scheduled Replacements	

Item	2037 - YEAR 14	$
10	Stair railings, PTL wood	$4,200
19	Fence, wooden split-rail, 20% allowance	$3,200
20	Fence, add for woven wire mesh 3-rail	$925
41	Tot lot surfacing, rubber mulch (3")	$4,680
50	Basketball pole & backstop	$2,200
	Total Scheduled Replacements	$15,205

Item	2038 - YEAR 15	$
4	Entry monument lighting	$630
14	Miscl. wood structures (25% allowance)	$1,400
15	Riprap shoreline revetment (33% allowance)	$19,800
22	Asphalt pavement, common, overlay (75% allowance)	$22,575
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
38	Kayak and paddle board racks	$12,900
46	Bench, PTL wood (7')	$3,000
	Total Scheduled Replacements	$63,530

PROJECTED REPLACEMENTS

Item	2039 - YEAR 16	$
3	Entrance monument metal letters	$4,680
12	Observation pier stairs, PTL wood riser	$3,600
34	Pond observation pier decking, PTL	$9,072
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$22,032

Item	2040 - YEAR 17	$
No Scheduled Replacements		

Item	2041 - YEAR 18	$
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$4,680

Item	2042 - YEAR 19	$
2	Entrance monument, painted metal sign	$2,250
8	Stairs wood, refurbish	$5,000
11	Stairs terrace, PTL wood riser	$3,600
17	Pond fountain	$7,500
18	Fence, 6' PTL, wood board	$3,000
47	Chair, Adirondack	$2,100
48	End table, Adirondack	$170
Total Scheduled Replacements		$23,620

Item	2043 - YEAR 20	$
1	Entrance monument, repoint masonry (10% allowance)	$540
4	Entry monument lighting	$630
6	Flag Pole	$600
14	Miscl. wood structures (25% allowance)	$1,400
21	Tree replacement (allowance)	$24,000
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
24	Concrete driveway apron, common (75% allowance)	$1,400
37	Pond observation pier, PTL railing	$4,950
41	Tot lot surfacing, rubber mulch (3")	$4,680
45	Picnic table (PTL wood table) (25% allowance)	$1,080
Total Scheduled Replacements		$42,505

Item	2044 - YEAR 21	$
No Scheduled Replacements		

Item	2045 - YEAR 22	$
31	Floating dock, refurbish	$4,620
32	Floating dock, deck & frame	$12,100
33	Floating dock, replace floats	$2,800
41	Tot lot surfacing, rubber mulch (3")	$4,680
Total Scheduled Replacements		$24,200

Item	2046 - YEAR 23	$
No Scheduled Replacements		

PROJECTED REPLACEMENTS

Item	2047 - YEAR 24	$
16	Pond dredging (33% allowance)	$53,295
28	HOA Dock, decking	$11,340
30	HOA Dock piling (25% allowance)	$6,000
40	Tot lot, border recycled plastic	$1,904
41	Tot lot surfacing, rubber mulch (3")	$4,680
42	Tot lot, ADA MP structure, 2 platforms and 2 slides	$28,000
	Total Scheduled Replacements	$105,219

Item	2048 - YEAR 25	$
4	Entry monument lighting	$630
14	Miscl. wood structures (25% allowance)	$1,400
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
26	Site light, standard single head, LED	$700
43	Observation Pier bench, wood with metal supports (7')	$1,700
44	Observation Pier picnic tables with metal supports	$1,850
	Total Scheduled Replacements	$9,505

Item	2049 - YEAR 26	$
41	Tot lot surfacing, rubber mulch (3")	$4,680
	Total Scheduled Replacements	$4,680

Item	2050 - YEAR 27	$
39	Catamaran rack	$1,300
	Total Scheduled Replacements	$1,300

Item	2051 - YEAR 28	$
41	Tot lot surfacing, rubber mulch (3")	$4,680
51	Bike rack, 9 bikes	$1,900
	Total Scheduled Replacements	$6,580

Item	2052 - YEAR 29	$
7	Sign and post, info graphic (allowance)	$1,650
8	Stairs wood, refurbish	$5,000
9	Stairs wood, replace	$16,250
10	Stair railings, PTL wood	$4,200
17	Pond fountain	$7,500
19	Fence, wooden split-rail, 20% allowance	$3,200
47	Chair, Adirondack	$2,100
48	End table, Adirondack	$170
	Total Scheduled Replacements	$40,070

Item	2053 (beyond study period)	$
1	Entrance monument, repoint masonry (10% allowance)	$540
4	Entry monument lighting	$630
13	Observation pier reset flagstone pavers	$1,280
14	Miscl. wood structures (25% allowance)	$1,400
15	Riprap shoreline revetment (33% allowance)	$19,800
23	Asphalt pavement, common, seal coat (75% allowance)	$3,225
38	Kayak and paddle board racks	$12,900
41	Tot lot surfacing, rubber mulch (3")	$4,680
46	Bench, PTL wood (7')	$3,000
	Total Scheduled Replacements	$47,455

Item	2054 (beyond study period)	$
12	Observation pier stairs, PTL wood riser	$3,600
34	Pond observation pier decking, PTL	$9,072
	Total Scheduled Replacements	$12,672

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SECTION D - CONDITION ASSESSMENT

General Comments. Miller+Dodson Associates conducted a Reserve Study at Annapolis Cove HOA in February 2023. Annapolis Cove HOA is in generally good condition for a homeowner's association constructed between 1980 and 1990. Reviewing the Replacement Reserve Inventory will show that we anticipate most components achieving their normal economic lives.

The following comments pertain to the larger, more significant components in the Replacement Reserve Inventory and those items that are unique or deserving of attention because of their condition or how they have been treated in the Replacement Reserve Analysis or Inventory.

IMPORTANT NOTE: This Condition Assessment is based upon visual and apparent conditions of the common elements of the community which were observed by the Reserve Analyst at the time of the site visit. This Condition Assessment does not constitute, nor is it a substitute for, a professional Structural Evaluation of the buildings, amenities, or systems. Miller Dodson strongly recommends that the Association retain the services of a Structural Engineer to conduct thorough and periodic evaluations of the buildings, balconies, and any other structural components of the buildings and amenities of the Association.

General Condition Statements.

Excellent. 100% to 90% of Normal Economic Life expected, with no appreciable wear or defects.

Good. 90% to 60% of Normal Economic Life expected, minor wear or cosmetic defects found. Normal maintenance should be expected. If performed properly, normal maintenance may increase the useful life of a component. Otherwise, the component is wearing normally.

Fair. 60% to 30% of Normal Economic Life expected, moderate wear with defects found. Repair actions should be taken to extend the life of the component or to correct repairable defects and distress. Otherwise, the component is wearing normally.

Marginal. 30% to 10% of Normal Economic Life expected, with moderate to significant wear or distress found. Repair actions are expected to be cost-effective for localized issues, but normal wear and use are evident. The component is reaching the end of the Normal Economic Life.

Poor. 10% to 0% of Normal Economic Life expected, with significant distress and wear. Left unattended, additional damage to underlying structures is likely to occur. Further maintenance is unlikely to be cost-effective.

(Continued on next page)

SITE ITEMS

Entry Monument and Signage. The Association maintains three entry monuments with piers, all located along Bay Ridge Road at both ends of Catrina Lane and Chrisland Drive. The monuments are made of brick with cast stone pier caps, and they appear in good condition, with open masonry joints and loose or broken masonry units. The cast stone pier caps are discolored from tree mold and pollution.

We recommend re-pointing and replacement of defective areas of the masonry as needed. The Association has applied a coating of Siloxane or other sealants to mitigate water penetration and further degradation of the masonry work.

The monument sign and lettering appear metal and is expected to have a useful life of 25 years. Acrylic or other synthetic material is expected to have a useful life of 10 to 15 years.

In addition to monuments, the Association is responsible for community signage, including an informational placard in the recreational area. This study does not consider other small miscellaneous signs that should be replaced using other funds.

The info-graphic placard is made of wood and appears in good condition, with no noted damaged areas or weathering. We recommend that the Association replace the sign as required to keep the placard and graphics fresh and appealing.

Fencing. The Association maintains about 500 linear feet of three-rail split-rail fencing with one double gate at the pond, which is observed to be in excellent condition. The Association recently installed about 100 linear feet of pressure-treated wood board fencing at the recreation area beside the basketball court and tot lot. It appears to be in excellent condition.

Fencing systems have many configurations and finishes that can usually be repaired as a maintenance activity by replacing individual components as they become damaged or weathered.

Protection from string machine damage during lawn maintenance can extend the useful life of some fence types. Protection from this type of damage is typically provided by applying herbicides around post bases or installing protective sheathing.

Pressure-treated wood fencing should be cleaned and sealed every year or two. Typically the least-cost fencing option, this type of fence can last 15 to 20 years if maintained properly.

Cedar fencing should be cleaned and sealed every year or two. This type of fence can last 20 to 25 years if properly maintained.

Vinyl fencing made of 100% virgin material can last 30 to 35 years, and periodic cleaning will keep the fence looking attractive. Vinyl components with ticker walls can provide a longer useful life.

Aluminum fencing can have a useful life of 40 years or more. Periodic cleaning and touch-up painting may be required to keep the fence attractive.

Steel fencing can have a useful life of 40 years or more. Periodic cleaning and touch-up painting may be required to keep the fence attractive.

Chain link fencing can have a useful life of 40 years or more. Periodic weed control may be required to protect and maintain the fence.

The Association does not maintain steel fence posts and fasteners that we observed embedded in concrete or masonry.

As part of normal maintenance for steel fencing and railings, we recommend the following:

- Lift or remove ornamental base covers, if applicable.
- Remove existing caulk completely.
- Clean, prime, and paint all posts.
- Apply an appropriate caulk around each post base.
- Tool and shape caulking to shed water from the post.
- Reinstall base covers, and seal and paint all joints.

Fence posts can have an extended useful life if these simple maintenance activities are performed. If left unattended, the pressure from expansive post rust can crack and damage the supporting material.

MISCELLANEOUS SITE COMPONENTS

Flagstone Pavers. The Association maintains approximately 160 square feet of flagstone pavers at the pond area, and they appear in good condition. Flagstone pavers provide a solid, decorative, and renewable surface that is part of the community's steps and paths at the community observation pier on the pond at Chrisland Drive. They are observed to be in good condition, with areas of defects consistent with the age of the installation.

Flagstone pavers have a service life of 40 years or more if the system is maintained on a consistent periodic basis. Eventually, the system will require a large-scale replacement; identical flagstone pavers may not be available, and it is recommended that the flagstone pavers be replaced.

Typical defects can include the following:

- Cracking. Cracked pavers, some of which are creating trip hazards.
- Settlement. Areas where pavers have settled due to a failure of the base under the pavers. This settlement can result in an uneven surface, posing a trip hazard.
- Ponding. Evidence of areas where water is ponding on the unit paver system due to settlement or poor drainage of the surface and surrounding area.

- Missing aggregate. In areas where aggregate is missing from the joints between paver units, adding fine aggregate effectively reduces the amount of base soil removed due to water penetration.
- Failed perimeter border. Areas of the perimeter border failed, leading to the separation of the unit pavers. This defect is hazardous and can cause additional defects to develop.
- A paver system was installed on a slope. Flagstone pavers installed on a dramatic slope or elevation change will gradually slide toward the bottom, posing a hazardous situation. Areas with a dramatic elevation change should be redesigned to include additional tiers.

To correct defects and provide the longest service life of the unit paver system, periodic re-setting is required. Re-setting allows replacing broken unit pavers, filling in voids in the foundation material, and leveling the surface areas. We have included an allowance for periodic re-setting of those portions of the system.

Mailboxes. There is a metal mailbox at the recreation area, and it is excluded from this study but is included in the Annapolis Cove Marina study. It appears in excellent to good condition with no noted door, locks, or pedestal defects.

Mailboxes should be maintained so that rust does not develop on the structure or pedestal, and all mail slot doors remain intact with operable hinges and locks. Our replacement estimate assumes that these units will be replaced with powder-coated aluminum or composite.

Site Lighting. The Association operates the pole light at the recreation area parking lot and three monument lights. The lights were not on during our site visit, but we understand they remain in good operating condition. We noted a broken fixture at the Chrisland Drive monument, and the other two monuments' lighting is protected from damage with an expanded metal cage.

This study assumes the replacement of the light fixtures every 15 to 20 years and pole replacement every 30 to 40 years. When the light poles are replaced, we assume the underground wiring will also be replaced. When a whole-scale lighting replacement project is called for, we recommend consulting a lighting design expert. Many municipalities have design codes, guidelines, and restrictions regarding exterior illumination. The Association should consider factors such as environmental sustainability, longevity, and cost when they look at the replacement of their lighting.

Site Electrical Equipment. The electrical systems of the site lighting are located at the entry monuments and the pond area for the fountain pump and are reported to operate normally. If protected from water damage or overloading, the

transformers, meters, and circuit breakers have a rated service life of 50 years and are considered long-life components. We have provided funds for their eventual replacement in the Study. We noted some loose receptacle boxes and light sensors at the monuments.

To maintain this equipment properly, periodic tightening of all connections is recommended every three to five years. Insurance policies, in some cases, may have specific requirements regarding tightening electrical connections. It is also recommended that outlets, sockets, switches, and minor fixtures be replaced at a maximum of every 30 years.

Irrigation System. An irrigation system was not observed, but it was included in the previous study and excluded from this study. No drawings were available to estimate the value of the system accurately.

Tree Removal Allowance. We observed numerous locations where trees needed to be replaced in the common area.

We recommend that these trees be removed before the replacement of the tree. We have provided funding for removing the trees and tree roots. It must be understood that the funding provided is based on our understanding of the issues and our experience with similar projects. We recommend that the Association commission a study by an Arborist or company specializing in tree management to provide an inventory of the trees and plants within the community. Tree inventories are intended to provide basic information on the plant population of a property to make informed management decisions. Inventories can supply information on plant quantities, location, condition, size, and maintenance requirements. Based on this information, sustainable management plans and rational budgets can be developed for the property's care. We will adjust our figures to conform to professional studies and budget guidelines if the material or information is disclosed to us and/or made available.

Asphalt Pavement. The Association shares responsibility for the asphalt paving at the recreation area. The recreation area site includes asphalt pavement for vehicle access and parking. In general, the asphalt pavement is in fair to poor condition with multiple areas of defects. The Association shares responsibility with the Annapolis Cove Marina for an inventory of approximately 17,200 square feet of asphalt pavement in a 75% (HOA) 25% (Marina) split.

The defects noted include the following:

- Open Cracks. There are multiple locations where open cracks allow water to penetrate the asphalt base and the bearing soils beneath the pavement. This water will erode the base, accelerating the deterioration of the asphalt pavement. If the cracks have allowed the deterioration of the base materials and the bearing soil, the damaged areas should be removed and replaced. All other cracks should be cleaned and filled.

- Alligatoring. There are multiple locations where the asphalt has developed a cracking pattern known as alligatoring. Alligatoring is the result of an unstable base under the asphalt. Shifting in the base causes the asphalt to crack and shift, forming cracks resembling an alligator's skin. Once these cracks extend through the asphalt, they will allow water to penetrate the base, accelerating the rate of deterioration. The only solution is to remove the defective asphalt and compact the base before the new asphalt is installed.
- Potholes. There are several locations where potholes have formed due to the failure of the underlying base material or the surface material. The repair will require the removal of the asphalt and base material, installation and compaction of new base material, and resurfacing with asphalt.
- Depressions. There are areas where the asphalt surface is depressed due to deformation in these surfaces or underlying layers. These depressions may continue to grow with exposure to traffic. Water ponding was noted in several of these areas. The repair will require the removal of the asphalt and base material, installation and compaction of new base material, and resurfacing with asphalt.
- Edge Cracking. Sections of the asphalt pavement have cracks along their edges due to insufficient curbing to hold it in place. The pavement will continue to deteriorate with time

A more detailed summary of pavement distress can be found at http://www.asphaltinstitute.org/engineering/maintenance-and-rehabilitation/pavement-distress-summary/.

As a rule, asphalt should be overlaid when approximately 5% of the surface area is cracked or deteriorated. The normal service life of asphalt pavement is typically 18 to 20 years.

To maintain the condition of the pavement throughout the community and ensure the longest life of the asphalt, we recommend the Association adopts a systematic and comprehensive maintenance program that includes:

- **Cleaning.** Long-term exposure to oil or gas breaks down asphalt. Because this asphalt pavement is generally not used for long-term parking, it is unlikely that frequent cleaning will be necessary. When necessary, spill areas should be cleaned or patched if deterioration has penetrated the asphalt. This is a maintenance activity, and we have assumed that Reserves will not fund it.
- **Crack Repair.** All cracks should be repaired with an appropriate compound to prevent water infiltration through the asphalt into the base. This repair should be done annually. Crack repair is normally considered a maintenance activity and is not funded by Reserves. Areas of extensive cracking or deterioration that cannot be made watertight should be cut out and patched.
- **Seal Coating.** The asphalt should be seal coated every five to seven years. For this maintenance activity to be effective in extending the life of the asphalt, cleaning and crack repair should be performed first.

The pricing is based on recent contracts for a two-inch overlay, which reflects the current local market for this work.

We have included an item in the reserve analysis for patching the asphalt on a five-year cycle.

Asphalt Seal Coat. We recommend seal coating the asphalt every five years to protect and extend its life. Asphalt pavement is a combination of rock, sand, and liquid asphalt. With time and exposure to sunlight, UV radiation breaks down the asphalt sufficiently to allow the loosening of the sand and stone and erosion of the top surface of the pavement. The first sign of this deterioration is the gradual change in the color of the asphalt from black to gray. As this deterioration continues, the surface of the asphalt takes on a rough appearance. The sun's UV radiation also causes the pavement to lose flexibility. This loss of flexibility causes the pavement to become brittle, crack, and break.

Salt, petroleum products, and other chemicals also damage the asphalt pavement by dissolving directly into it, softening its structure.

Before applying the seal coat, the asphalt must be cleaned, and areas damaged by petroleum products treated so that the seal coat can properly adhere to the asphalt. Additionally, all cracks in the asphalt must be cleaned out and filled to prevent water penetration to the base material under the asphalt.

Seal coating the asphalt regularly provides a barrier between these elements and the asphalt material. Seal coating materials are typically a coal tar emulsion or similar material highly resistant to water, gas and oil, salt, other chemicals, and UV radiation.

Most seal coating materials cure sufficiently in 24 hours to allow normal traffic flow.

For seal coating, several different products are available. The older, more traditional seal coating product is paint. They coat the surface of the asphalt, and they are minimally effective. However, the newer coating materials, such as those from Total Asphalt Management and Asphalt Restoration Technologies, Inc., are penetrating. They are engineered to 're-moisturize' the pavement. Asphalt pavement is intended to be flexible. Over time, the volatile chemicals in the pavement dry, the pavement becomes brittle, and degradation follows as cracking and potholes. Re-moisturizing the pavement can return its flexibility and extend pavement life.

Exterior Wood Stairs. Two exterior stairs in the recreation area are constructed from pressure-treated wood treads and landings with wood stringers, one terraced stair is constructed from pressure-treated wood borders with mulch tread, and the pond observation pier terraced stairs are constructed from pressure-treated wood borders with flagstone pavers.

- The new stairs in the recreation area were installed in 2022 and appear in excellent condition with no noted defects.
- The pond observation stairs were installed with the original development in the late 1980s, and the wood appears in poor condition. The wood borders have moderate to extensive deterioration, including cracking, rot, and failed fasteners.

The defects noted include the following:

- Rot. Although the steps are constructed from treated lumber, we noted several locations where the boards are rotting.
- Cracks. Pressure-treated lumber will crack with exposure to repeated drying cycles. When the cracking becomes excessive, it can pose a trip hazard. We noted numerous locations where the cracking in the step surfaces poses a trip hazard.

We have separated the steps into the structure, decking, and railing components in the Reserve Analysis to reflect the different service lives of these components.

When rebuilding these steps, the community may consider using engineered lumber instead of pressure-treated wood. While engineered lumber is one-third more expensive than pressure-treated wood, it offers the advantages of not splitting, cracking, creating splinters, or rotting. As a result, its rated service life is approximately 50% longer than the service life of pressure-treated wood.

The wood in the exterior stairs expands and contracts with changes in temperature and moisture levels within the wood, leading to cracks. Untreated, these cracks will expand, leading to rot within the wood.

It is recommended that the Association inspect all stairs at least once each year. All areas with moderate cracking or rot should be replaced. Areas covered with mold should be cleaned and treated.

Wells. A single well on the property is included in the Annapolis Cove Marina Study and is excluded from this Study. The life expectancy of the well is highly variable. It depends on several factors, including the general geographic location of the well, the local groundwater conditions, seasonal fluctuations in the local water table, the mineral level and type of minerals in the water supply, and the type of well. For this study, we have assumed a 50-year life for the well structure, and the service life for most well pumps is 15 years.

Wood Bulkhead, Stone Revetments, and Living Shoreline. The Association is responsible for approximately 360 linear feet of shoreline creosote-treated wooden bulkhead and 600 linear feet of a stone revetment along the waterfront portion of the community to help control beach erosion. The bulkhead repair and maintenance are paid for by a special grant and are assessed via homeowners' taxes, which will be paid off in 2030. [3/24/2023] Revised.

- **Bulkheads.** The bulkhead appears to be in fair condition. No significant defects were noted. We noted damaged cap boards but no leaning sections, sinkholes behind the wall, or exposed anchor tie rods. We could not see below the waterline.

Bulkheads have a rated service life of 50 years. We recommend that the association start planning to replace the bulkhead due to its age while 85% of the bulkhead is intact and permits can be acquired. Bulkheads need to be designed by a qualified professional.

We recommend that the wood bulkhead be inspected at least once yearly and immediately following a storm that exposed the wall to significant wave action.

- **Shoreline Rip-Rap Revetments.** The community's shoreline permeable stone revetments were recently installed with a state grant, and the association is responsible for the management and maintenance going forward.

The revetment appears to be in good condition with no noted erosion but several gaps. Permeable stone revetments, if properly maintained, can have a useful life of 30-50 years.

Keeping up with your rip-rap rock wall's annual maintenance will help it to last a lifetime. Rip-rap rocks are designed to be durable and long-lasting. With proper upkeep, the rip-rap revetment has a lifespan of decades.

Because it is highly unlikely that all of the stone revetment components will fail and require replacement in the study period, we have programmed funds to replace 33% of these inventories to spread the funds over an extended timeframe to reflect the incremental nature of this work.

Here are some links to information about Chesapeake Bay coastal erosion, Maryland erosion control guidelines, and a detailed study by the US Army Corps of Engineers about the design of Bulkheads and Revetments.

Coastal Erosion www.mgs.md.gov

Shoreline Erosion Control Guidelines dnr.maryland.gov

US Army Corps of Engineers Design of Sea Walls, Bulkheads, and Revetments www.publications.usace.army.mil

- **Living Shoreline.** 'Living shorelines are the result of applying erosion control measures that include a suite of techniques that can be used to minimize coastal erosion and maintain the coastal process. Techniques may include using fiber coir logs, sills, groins, breakwaters, or other natural components combined with sand, other natural materials, and/or marsh plantings. These techniques protect, restore, enhance, or create natural shoreline habitats.' - Maryland DNR https://dnr.maryland.gov/ccs/pages/livingshorelines.aspx

The Association is currently considering implementing living shorelines in the community recreation area.

Stormwater Pond. The community is served by one stormwater management pond along Chrisland Drive. The pond is an area of approximately 1700 square yards and appears to be in fair condition. The pond is aerated by a two-horsepower fountain replaced in 2022. We noted no accumulated algae growth and could not see below the water. Inspections of ponds for compliance with regulations are beyond the scope of this study and are excluded. Pond inspection should be performed by a qualified professional.

Ponds will accumulate silt over time and lose the ability to store stormwater at design levels, which could result in overflows and minor local flooding. In addition, water quality can be negatively affected by increased siltation and debris accumulation. Accordingly, ponds require periodic dredging.

Estimates of cost and the frequency of dredging ponds are a function of many variables, including the pond's volume, the siltation rate, the nature of the material being removed, the method of removal, and the haul distance to a site that will accept the spoil material. This information is unknown and must be assumed for reserve study planning. The siltation rate and cost of periodic dredging are speculative, varying greatly depending on local conditions.

As a rule, dredging should be performed when approximately one-third of the pond's volume has been filled with silt. Without accurate information about the original depth of the pond and the local siltation rate, we have assumed that it will be necessary to remove one cubic yard of material over a third of the pond area periodically, as noted in the inventory. We have assumed that the removed material is free of heavy metals and hydrocarbons and will be accepted as fill at a local landfill. A more accurate prediction of cost and cycles will require a hydrologic analysis and testing, which is beyond the scope of our study.

It is only possible to accurately estimate dredging volume in a body of water with the data provided by a detailed Bathymetric Study. MillerDodson Associates recommends that the Association arranges through their Pond and Lake specialist to have Bathymetric Studies conducted. At that time, the Reserve Study can be revised to reflect the data provided by the Bathymetric Study.

As a supplement to traditional dredging methods, hydro-raking can prolong the interval between dredging.

Because of the significant cost of this work, it is recommended that the Association undertake studies to refine the assumptions of this study.

Based on our understanding, we recommend the following:

- Periodically remove accumulated debris and vegetation growing in the ponds.
- Survey the ponds to establish the current profile of the bottom. After five years of operation, re-survey the pond to establish new depths to determine the local siltation rate. This will establish the frequency required for periodic dredging.
- Periodically sample and test for contaminants.
- Consult with local contractors to determine the cost of removing and disposing of the spoil once its nature is known.

Firms specializing in this work can typically be found by searching “Lake and Pond, Construction and Maintenance” for your state or area of the country. Some states provide shortlists of companies that specialize in this type of work.

Please note that the periodic removal of overgrown vegetation from the pond is considered a maintenance activity and has not been reserved for or included in this study.

Stormwater structures must be maintained over time so that they may perform their two major functions, stormwater storage, and stormwater quality improvement. A well-planned maintenance program is the best way to ensure that these structures will continue to perform their water quality and quantity functions.

The following information outlines the general maintenance considerations for storm-water management structures. Stormwater management structures will require routine and non-routine maintenance. Routine maintenance, such as visual inspections, vegetation management, and the regular removal of debris and litter, provides various benefits, such as reducing the chance of clogging outlet structures, trash racks, risers, and other facility components. It is important to note that while general maintenance tasks are suggested, actual maintenance needs are very site-specific. Below is a list of the general component of a standard maintenance program.

Routine:	Non-Routine:
Visual Inspection	Bank Stabilization
Vegetation Management	Sediment Removal
Debris/Litter Control Outlet	Structure Maintenance / Replacement
Maintaining Undisturbed Areas Around Infiltration Trenches/Basins (routine)	Maintenance of Mechanical Components (dependent on age of structure; non-routine)

Minimum Inspection Checklist for Ponds:

- Obstructions of the inlet or outlet devices by trash and debris.
- Excessive erosion or sedimentation in the basin.
- Cracking or settling of the dam.
- Low spots in the bottom of a dry pond.
- Deterioration of pipes.
- Condition of the emergency spillway.
- Stability of the side-slopes.
- Upstream and downstream channel conditions.
- Signs of vandalism.

Vegetation Management. The grass is usually used around and in storage, ponds to prevent erosion and to filter sediment. The grass near the pond should not be over-fertilized, or the excessive nutrients will be washed into the pond, contributing to algae growth. Grass should be cut no shorter than 6-8 inches.

Please note that the periodic removal of overgrown vegetation from the pond is considered a maintenance activity and has not been reserved for or included in this study.

Sediment Removal. One of the main purposes of a stormwater management pond is to remove sediment from stormwater. As water flows through the pond, sediment accumulates and needs to be removed. Storm-water management structures vary in design and shape. Therefore, there is no general rule for the frequency of sediment removal. Upstream conditions such as land use, type of land cover (vegetated vs. paved), and soil types are important factors in determining how rapidly sediment will accumulate in a pond. Sediment removal is usually the largest cost of maintaining a storm-water management structure. Owners are responsible for maintaining the facility and should plan, setting aside the necessary funds to pay for sediment removal. The best solution to sediment removal is to designate an on-site area or a site adjacent to the facility where the sediment can be disposed of. This area will need to locate outside of the floodplain. If such a disposal area is unavailable, the sediment must be transported and disposed of off-

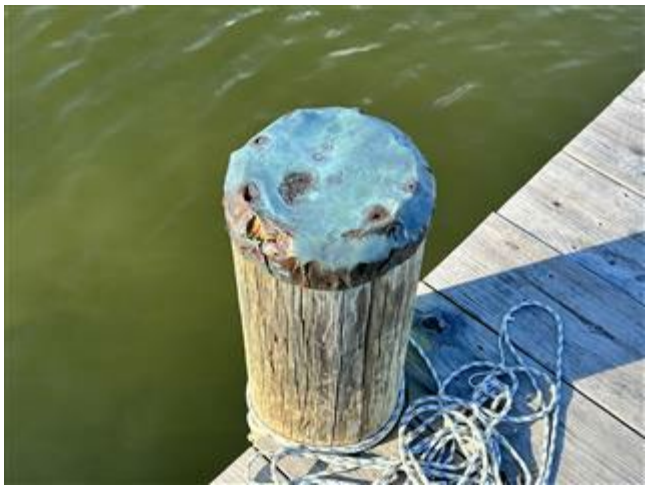
site. Transportation costs and disposal fees can greatly increase the cost of sediment removal. Once the sediment is removed, the bottom of the basin and any disturbed areas will need to be stabilized and re-vegetated, or the structure will quickly clog and require sediment removal again.

We have provided funds for the minor dredging of the detention pond and clearing of swales, creek area, and drainage lines. Because of the significance of the cost of this work in establishing the correct reserve contribution, it is recommended that the Association undertake studies to refine the information and replace the assumptions we have had to make with estimates based on your Association's current pond conditions.

RECREATION ITEMS

Wood Docks, Floating Platforms, and Observation Pier. The Association operates a boat dock, a floating dock, and an observation pier. The fixed dock and floating platform are in the recreation area, and the observation pier is at the pond on Chrisland Drive. The dock and pier are constructed from pressure-treated lumber supported by wood pilings. The floating platform is constructed from pressure-treated wood framing and decking and supported on plastic floats. The dock and piers are approximately 33 years old. New pier surfaces and railings were installed approximately 13 years ago. Pilings and decking are being replaced as needed. For the Reserve Analysis, we have separated each structure into three or four components, the wood deck, the structure, the pilings or floats, and the railing, to reflect their different service lives. It is recommended that all docks, platforms, and piers be inspected at least once yearly to identify damage to pilings, structural members, surface boards, and railings.

Wood Boat Dock. The Association is responsible for approximately 540 square feet of pressure-treated wood boat dock. The dock appears to be in overall fair condition.



- **Wood Decking.** The wood decking on the dock, the finger piers, and the wood walk are exposed to harsh sun and weather extremes. It will typically require replacement before the heavier members of the underlying structure. This decking will also be removed and replaced when the underlying structure is replaced. To model this replacement pattern, we have provided a complete replacement incident to replace the structure. We have included an additional replacement interval for the wood pier decking at the midpoint of the service life of the underlying structure. The wood decking appears in fair condition with minor defects consistent with age.
- **Dock Structure.** The structure consists of pressure-treated woodpiles on 10-foot centers with stringers spanning the distance between piles. We have assumed that all pilings will be replaced when the dock structure requires replacement. The pier structure appears to be in fair condition.
- **Freestanding Pilings.** Freestanding pilings are those pilings that are installed at the outside limit of each slip. These pilings provide mooring points to secure the stern of the boat within the slip. They are not a part of the pier structure. Because these pilings can be replaced individually when required without affecting other elements of the pier structure, we have treated them separately in the analysis and spread the cost of their replacement over time. The freestanding pilings appear to be in good condition. We noted holes in some of the pier caps.
- **Dock Utility Systems.** The Association boat dock is not fitted with utilities.

Floating Platform. The Association maintains approximately 240 square feet of a floating dock. The floating platform appears to be in good condition. Floating platforms have a useful life of around 20 to 30 years.

- **Floating Platform Decking**. The floating platform is surfaced with pressure-treated wood decking. The decking appears to be in fair condition. When necessary to resurface the platform, we recommend considering wood-plastic composites (WPCs) are composite materials made of wood fiber/wood flour and thermoplastic(s). Manufacturers claim that wood-plastic composite is more environmentally friendly and requires less maintenance than the alternatives of solid wood treated with preservatives or solid wood of rot-resistant species. WPCs do not corrode and are highly resistant to rot, decay, and insect infestation. Composite lumber comes from the manufacturer as a

finished product. There is no need to stain, sand, or paint the material. Wood-plastic composite materials usually cost more than standard lumber, but their long life and low-maintenance requirements could make them more economical in the long run.

- **Floating Platform Structure.** The structure consists of a pressure-treated wood frame comprised of stringers and band board, and it appears in fair to marginal condition with cracking and warping.
- **Floats.** Floats are manufactured in a variety of materials, including high-density polyethylene (HDPE), linear low-density polyethylene (LLDPE), and others, and some are filled with expanded polystyrene (EPS) foam.

Observation Pier. The Association is responsible for approximately 420 square feet of an observation pier at the stormwater management pond on Chrisland Drive, and it appears to be in fair condition. In addition to minor discoloration, splitting, and rot, we noted that the ring buoy is weathered.

- **Observation Pier Decking.** The wood decking on the pond observation pier is exposed to harsh sun and weather extremes. It will typically require replacement before the heavier members of the underlying structure. This decking will also be removed and replaced when the underlying structure is replaced. To model this replacement pattern, we have provided a complete replacement incident to replace the structure. We have included an additional replacement interval for the wood pier decking at the midpoint of the service life of the underlying structure. The wood pier decking appears to be in poor condition.
- **Pier Structure.** The structure consists of pressure-treated woodpiles on 10-foot centers with stringers spanning the distance between piles. We have assumed that all pilings will be replaced when the pier structure requires replacement. The pier structure appears to be in fair condition.
- **Pier Railing.** The pier has a wood railing. Water tends to stand on the railing surfaces and soak into the wood. As the sun dries and pulls the moisture out of the wood, the wood shrinks and cracks. The wood railings should be repaired, sections replaced, and sealed every 2 - 3 years. The pier railings appear to be in fair condition.

It is recommended that all docks, platforms, and piers be inspected at least once yearly to identify damage to pilings, structural members, surface boards, and railings.

Kayak, Paddleboard, and Catamaran Storage. The Association maintains 42 Kayak storage racks and one each catamaran and paddleboard storage rack constructed of pressure-treated wood for storage purposes. The racks are stick-built and in good to fair condition with no noted defects or carpet padding. The paddleboard rack is new and appears in excellent condition. We have assumed that the components of the racks will be replaced with ones of similar type and size.

Wooden kayak racks require the same care and maintenance as any other exposed pressure-treated wood construction. Inspect the rack often: Weather and UV rays can slowly deteriorate a kayak rack's wood surface. Inspect the rack for cracks and wear. We recommend pressure washing and sealing pressure-treated wood every two years. Replace broken or deteriorated structural members as required.

Basketball Court. The community maintains a half basketball court in the Marina area. The court surface is funded in the study as a concrete flatwork. The overall condition of the court appears to be excellent, with no noted defects.

Replacement of nets and hoops is considered a maintenance activity and is therefore not included in the study. Repaving and color coating is not required, and the entire goal replacement is included.

Tot Lots. The community maintains one tot lot located in the Marina area. The tot lot includes play structures, miscellaneous play equipment, synthetic borders, and a rubber chip surface. The facility facilities appear in good condition with minor wear and no noted loose connections. We noted cutting, entanglement, falling, or tripping hazards. The plastic border appears to be in good condition. The rubber chip surface is displaced or missing or does not appear to be adequate. We recommend a swing wear mat be installed under the tire swing.

The safety of each piece of playground equipment and the layout of the entire play area should be considered when evaluating a playground for safety. The installation and maintenance of the protective surfacing under and around all equipment are crucial. Please note that the evaluation of the equipment and these safety facilities is beyond the scope of this work.

Information for playground design and safety can be found in the "Public Playground Safety Handbook", U.S. Consumer Product Safety Commission (Pub Number 325). For a link to this handbook, please see our website at www.mdareserves.com/resources/links/recreation.

Our estimates for playground equipment are based on comparing photos of the existing equipment with equipment of a similar size in manufacturers' catalogs. We use the pricing quoted by manufacturers for comparable equipment and added 30% for the disposal of the old equipment and installation of new equipment.

Flag Poles. The Association maintains one 20-foot aluminum flag pole with brass ornaments. The pole appears to be in good condition. The pole is of the external truck type with a cleat. Flag pole maintenance requires routine inspection and cleaning if necessary (rarely), occasional halyard, truck, and flag spring clip repair or replacement. The pole bases appear to be stable, and no leaning was observed.

Recreation Items. The community maintains nine wooden picnic tables (one with metal supports), eight wooden benches (two with metal supports), six Adirondack chairs with end tables, one metal bike rack, and no observed trash receptacles or grills. The picnic tables appear to be in mixed condition. The benches with metal supports are in fair condition, with some noted corrosion on the supports. The Marina area benches are stick-built out of pressure-treated wood and are new and in excellent condition.

Wood Maintenance: A garden hose can clean off surface stains, spills, or mud. Tougher messes on plastic, metal and wooden outdoor furniture are best tackled with a wet scrub brush and some soap. It's important to take into consideration the materials when cleaning outdoor furniture. For example, it is not recommended to power wash wooden outdoor furniture, as this will put unnecessary wear and tear on the softer wood finish. A better option would be to use an oil-based soap designed specifically for wood, which will clean and protect wooden parts.

Metal Maintenance: Another material commonly used in outdoor furniture that can require special care is metal. Metal furniture often comes pre-coated to protect against rust, but this finish can eventually wear off. In this situation, it's best to buff away rust with some steel wool and refresh the anti-rust coating for future protection. In-ground mounted metal bases should have mounting pockets caulked flush if in concrete or masonry to prevent the rusting of the posts.

Recycled Plastic. Plastic products are made of recycled plastic from waste materials. This type of furniture is not painted, does not rust, and is very durable. The material is stronger than regular plastic material, is resistant to the effects of the weather, and does not fade in color. Recycled plastic furniture, unlike wood, is also resistant to mold, fungus, insects,

termites, and rotting. When it comes time to replace the outdoor furniture, the Community may wish to consider recycled plastic. Maintenance: Recycled plastic is easy to clean. It is smooth, does not hold water to its surface, and dries quickly.

This Condition Assessment is based upon our visual survey of the property. The sole purpose of the visual survey was an evaluation of the common and limited common elements of the property to ascertain their remaining useful life and replacement cost. Our evaluation assumed that all components met building code requirements in force at the time of construction. Our visual survey was conducted with care by experienced persons, but no warranty or guarantee is expressed or implied.

End of Condition Assessment

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1. COMMON INTEREST DEVELOPMENTS - AN OVERVIEW

Over the past 40 years, the responsibility for many services, facilities and infrastructure around our homes has shifted from the local government to Community Associations. Thirty years ago, a typical new town house abutted a public street on the front and a public alley on the rear. Open space was provided by a nearby public park, and recreational facilities were purchased ala carte from privately-owned country clubs, swim clubs, tennis clubs, and gymnasiums. Today, 60% of all new residential construction, i.e. townhouses, single-family homes, condominiums, and cooperatives, is in Common Interest Developments (CID). In a CID, a homeowner is bound to a Community Association that owns, maintains, and is responsible for periodic replacements of various components that may include the roads, curbs, sidewalks, playgrounds, streetlights, recreational facilities, and other community facilities and infrastructure.

The growth of Community Associations has been explosive. In 1965, there were only approximately 500 Community Associations in the United States. According to the 1990 U.S. Census, there were roughly 130,000 Community Associations. The Community Associations Institute (CAI), a national trade association, estimates in 2020 that there were more than 350,000 communities with over 75 million residents.

The shift of responsibility for billions of dollars of community facilities and infrastructure from the local government and private sector to Community Associations has generated new and unanticipated issues. Although Community Associations have succeeded in solving many short-term issues, many Associations still fail to properly plan for the significant expenses of replacing community facilities and infrastructure components. When inadequate Replacement Reserve funding results in less than timely replacements of failing components, home owners are invariably exposed to the burden of special assessments, major increases in Association fees, and often a decline in property values.

2. REPLACEMENT RESERVE STUDY

The purpose of a Replacement Reserve Study is to provide the Association with an inventory of the common community facilities and infrastructure components that require periodic major repair or replacement, a general view of the physical condition of these components, and an effective financial plan to fund projected periodic replacements or major repairs. The Replacement Reserve Study consists of the following:

Replacement Reserve Study Introduction. The introduction provides a description of the property, an Executive Summary of the Funding Recommendations, Level of Reserve Study service, and a statement of the Purpose of the Replacement Reserve Study. It also lists documents and site evaluations upon which the Replacement Reserve Study is based, and provides the Credentials of the Reserve Analyst.

Section A Replacement Reserve Analysis. Many components that are owned by the Association have a limited life and require periodic replacement. Therefore, it is essential that the Association have a financial plan that provides funding for the timely replacement of these components in order to protect the safety, appearance, and ultimately, the property value of the home sin the community. In conformance with National Reserve Study Standards, a Replacement Reserve Analysis evaluates the current funding of Replacement Reserves as reported by the Association and recommends annual funding of Replacement Reserves using the Threshold Cash Flow Method. See definition below.

Section B Replacement Reserve Inventory. The Replacement Reserve Inventory lists the commonly owned components within the community that require periodic replacement using funding from Replacement Reserves. Replacement Reserve Inventory includes estimates of the Normal Economic Life (NEL) and the Remaining Economic Life (REL) for those components whose replacement is scheduled for funding from Replacement Reserves.

The Replacement Reserve Inventory also provides information about those components which are excluded from the Replacement Reserve Inventory and whose replacement is not scheduled for funding from Replacement Reserves.

Section C Projected Annual Replacements. The Calendar of Projected Annual Replacements provides a year-by-year listing of the Projected Replacements based on the data in the Replacement Reserve Inventory.

Section D Condition Assessment. The observed condition of the major items listed in the Replacement Reserve Inventory are discussed in more detail. The Condition Assessment includes a narrative and photographs that document conditions at the property observed at the time of our visual evaluation.

The Appendix is provided as an attachment to the Replacement Reserve Study. Additional attachments may include supplemental photographs to document conditions at the property and additional information specific to the property cited in the Conditions Assessment (i.e. Consumer Product Safety Commission, Handbook for Public Playground Safety, information on segmental retaining walls, manufacturer recommendations for asphalt shingles or siding, etc.).

3. METHODS OF ANALYSIS

The Replacement Reserve industry generally recognizes two different methods of accounting for Replacement Reserve Analysis, the Cash Flow Method and the Component Method. Due to the difference in accounting methodologies, these methods lead to different calculated values for the Recommended Annual Funding to the Reserves. A brief description is included below:

Cash Flow Threshold Method. This Reserve Study uses the Threshold Cash Flow Method, sometimes referred to as the "Pooling Method." It calculates the minimum constant annual funding to reserves (Minimum Annual Deposit) required to meet projected expenditures without allowing total reserves on hand to fall below the predetermined Minimum Balance, or Threshold, in any year.

Component Method. The Component Method of calculating Reserve Funding needs is based upon an older mathematical model. Instead of calculating total funding based on yearly funding requirements, the Component method treats each component as its own “line item” budget that can only be used for that component. As a result, the Component Method is typically more conservative requiring greater Annual Reserve Funding levels.

4. REPLACEMENT RESERVE STUDY DATA

Identification of Reserve Components. The Reserve Analyst has only two methods of identifying Reserve Components; (1) information provided by the Association and (2) observations made at the site. It is important that the Reserve Analyst be provided with all available information detailing the components owned by the Association. It is our policy to request such information prior to bidding on a project and to meet with the parties responsible for maintaining the community after acceptance of our proposal. Upon submission of the initial Study, the Study should be reviewed by the Board of Directors and the individuals responsible for maintaining the community. We depend upon the Association for correct information, documentation, and drawings. We also look to the Association representative to help us fashion the Reserve Study so that it reflects what the community hopes to accomplish in the coming years.

Unit Costs. Unit costs are developed using nationally published standards and estimating guides and are adjusted by state or region. In some instances, recent data received in the course of our work is used to modify these figures. Contractor proposals or actual cost experience may be available as part of the Association records. This is useful information, which should be incorporated into your report. Please bring any such available data to our attention, preferably before the report is commenced.

Replacement vs. Repair and Maintenance. A Replacement Reserve Study addresses the required funding for Capital Replacement Expenditures. This should not be confused with operational costs or cost of regular repairs or maintenance.

5. DEFINITIONS

Adjusted Cash Flow Analysis. Cash flow analysis adjusted to take into account annual cost increases due to inflation and interest earned on invested reserves. In this method, the annual contribution is assumed to grow annually at the inflation rate.

Annual Deposit if Reserves Were Fully Funded. Shown on the Summary Sheet A1 in the Component Method summary, this would be the amount of the Annual Deposit needed if the Reserves Currently on Deposit were equal to the Total Current Objective.

Cash Flow Analysis. See Cash Flow Threshold Method, above.

Component Analysis. See Component Method, above.

Contingency. An allowance for unexpected requirements. The “Threshold” used in the Cash Flow Method is a predetermined minimum balance that serves the same purpose as a “contingency”. However, IRS Guidelines do not allow for a “contingency” line item in the inventory. Therefore, it is built into the mathematical model as a “Threshold”.

Cyclic Replacement Item. A component item that typically begins to fail after an initial period (Estimated Initial Replacement), but which will be replaced in increments over a number of years (the Estimated Replacement Cycle). The Reserve Analysis program divides the number of years in the Estimated Replacement Cycle into five equal increments. It then allocates the Estimated Replacement Cost equally over those five increments. (As distinguished from Normal Replacement Items, see below)

Estimated Normal Economic Life (NEL). Used in the Normal Replacement Schedules. This represents the industry average number of years that a new item should be expected to last until it has to be replaced. This figure is sometimes modified by climate, region, or original construction conditions.

Estimated Remaining Economic Life (REL). Used in the Normal Replacement Schedules. Number of years until the item is expected to need replacement. Normally, this number would be considered to be the difference between the Estimated

Economic Life and the age of the item. However, this number must be modified to reflect maintenance practice, climate, original construction and quality, or other conditions. For the purpose of this report, this number is determined by the Reserve Analyst based on the present condition of the item relative to the actual age.

Minimum Annual Deposit. Shown on the Summary Sheet A1. The calculated requirement for annual contribution to reserves as calculated by the Cash Flow Method (see above).

Minimum Balance. Otherwise referred to as the Threshold, this amount is used in the Cash Flow Threshold Method only. Normally derived using the average annual expenditure over the study period, this is the minimum amount held in reserves in the Peak Year.

National Reserve Study Standards. A set of Standards developed by the Community Associations Institute in 1995 (and updated in 2017) which establishes the accepted methods of Reserve Calculation and stipulates what data must be included in the Reserve Study for each component listed in the inventory. These Standards can be found at CAIonline.org.

Normal Replacement Item. A component of the property that, after an expected economic life, is replaced in its entirety. (As distinguished from Cyclic Replacement Items, see above.)

Number of Years of the Study. The numbers of years into the future for which expenditures are projected and reserve levels calculated. This number should be large enough to include the projected replacement of every item on the schedule, at least once. The Reserve Study must cover a minimum of 20 years to comply with the National Reserve Study Standards. However, your study covers a 30-year period.

Peak Year. In the Cash Flow Threshold Method, a year in which the reserves on hand are projected to fall to the established threshold level. See Minimum Balance, above.

Reserves Currently on Deposit. Shown on the Summary Sheet A1, this is the amount of accumulated reserves as reported by the Association in the current year.

Replacement Reserve Study. An analysis of all of the components of the common property of a Community Association for which replacement should be anticipated within the economic life of the property as a whole. The analysis involves estimation for each component of its Estimated Replacement Cost, Normal Economic Life, and Remaining Economic Life. The objective of the study is to calculate a Recommended Annual Funding to the Association's Replacement Reserve Fund.

Total Replacement Cost. Shown on the Summary Sheet A1, this is total of the Estimated Replacement Costs for all items on the schedule if they were to be replaced once.

Unit Replacement Cost. Estimated replacement cost for a single unit of a given item on the schedule.

Unit (of Measure). Non-standard abbreviations are defined on the page of the Replacement Reserve Inventory where the item appears. The following standard abbreviations are used in this report:

ea	each	**ls**	lump sum	**sy**	square yard
ft or lf	linear foot	**pr**	pair	**cy**	cubic yard
sf	square foot				

What is a Reserve Study?
Who are we?

https://youtu.be/m4BcOE6q3Aw

What kind of property uses a Reserve Study?
Who are our clients?

https://youtu.be/40SodajTW1g

Who conducts a Reserve Study?
Reserve Specialist (RS) what does this mean?

https://youtu.be/pYSMZO13VjQ

When should a Reserve Study be updated?
What are the different types of Reserve Studies?

https://youtu.be/Qx8WHB9Cgnc

What's in a Reserve Study and what's out?
Improvement/Component, what's the difference?

https://youtu.be/ZfBoAEhtf3E

What is my role as a Community Manager?
Will the report help me explain Reserves?

https://youtu.be/1J2h7FIU3qw

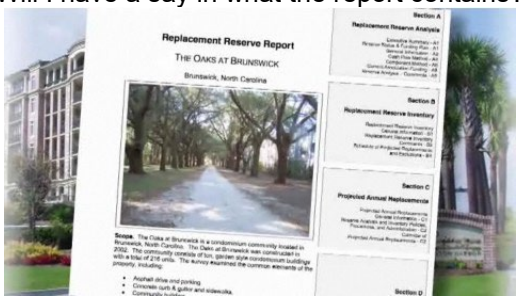
What is my role as a community Board Member?
Will a Reserve Study meet my needs?

https://youtu.be/aARD1B1Oa3o

Community dues, how can a Reserve Study help?
Will a study keep my property competitive?

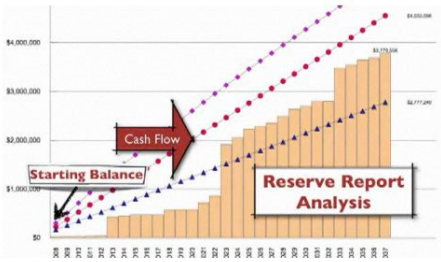
https://youtu.be/diZfM1IyJYU

How do I read the report?
Will I have a say in what the report contains?



https://youtu.be/qCeVJhFf9ag

Where do the numbers come from?
Cumulative expenditures and funding, what?

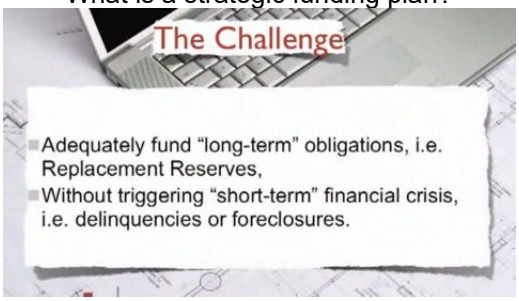


https://youtu.be/SePdwVDvHWI

How are interest and inflation addressed?
Inflation, what should we consider?

https://youtu.be/W8CDLwRIv68

A community needs more help, where do we go?
What is a strategic funding plan?



https://youtu.be/hIxV9X1tIcA