

# REPLACEMENT RESERVE REPORT FY 2016 CORROTOMAN BY THE BAY ASSOCIATION



Prepared for:

**CORROTOMAN BY THE BAY ASSOCIATION**

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CORROTOMAN BY THE BAY ASSOCIATION

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# REPLACEMENT RESERVE REPORT

## CORROTOMAN BY THE BAY ASSOCIATION

LANCASTER, VIRGINIA



**Description.** Corrotoman by the Bay Association is a homeowners association located in Lancaster, Virginia. Constructed in 1967, the community consists of 591 dues paying community members. The survey examined the common elements of the property, including:

- Asphalt roads, clubhouse parking, and gravel roads.
- Concrete sidewalk at clubhouse.
- Entrance feature and vinyl fencing.
- Picnic shelter and storage building.
- Swimming pool, tennis courts, and play equipment.
- Community building interior and exterior.
- Pier, bulkhead, and boat ramp.

**Level of Service.** This study has been performed as a Level 2 Update with Site Visit/On-Site Review as defined under the National Reserve Study Standards that have been adopted by the Community Associations Institute. As such, the component inventory is based on the study that was performed in 2011 and updated in 2013 by Miller - Dodson Associates. The inventory was adjusted to reflect changes as provided by the Community Manager or adjustments were made based on the site visit and visual inspection performed by the Analyst. The included fund status and funding plan have been developed from analysis of the adjusted inventory.

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#### Replacement Reserve Analysis

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Overview, Standard Terms, and Definitions  
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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](http://mdareserves.com).

**Purpose.** The purpose of this Replacement Reserve Study is to provide Corrotoman by the Bay Association (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 Association's current funding and the recommended funding based on the Cash Flow Method. An Executive Summary of these calculations is provided on Page A1. The alternative Component Method of funding is provided in the Appendix.

**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 July 18, 2015 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 not 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.

**Current Funding.** This reserve study has been prepared for Fiscal Year 2016 covering the period from March 1, 2015 to February 28, 2016. The starting balance on March 1, 2015 was \$36,384. The planned contribution to the Replacement Reserve for the 2016 fiscal year is \$41,982.

The balance and contribution figures have been supplied by the managing agent and 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.

**Acknowledgement.** Miller - Dodson Associates would like to acknowledge the assistance and input of Mr. Robert Bennett (Community President), Ms. Jean Ehlman (Chairman) and Mr. Bill Ehlman (Board Member) who provided very helpful insight into the current operations of the property.

**Analyst's Credentials.** Mr. Eric D. Kinder holds a Bachelor of Architecture from Virginia Tech. Mr. Kinder has been a Registered Professional Architect in the Commonwealth of Virginia since 1996. Since 2002, Mr. Kinder has provided commercial and residential architectural services in the Richmond area through the firm of Eric D. Kinder Architect. He is currently a Reserve Specialist for Miller - Dodson Associates.

Respectfully submitted,



Eric D. Kinder, RS  
Reserve Specialist

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## EXECUTIVE SUMMARY

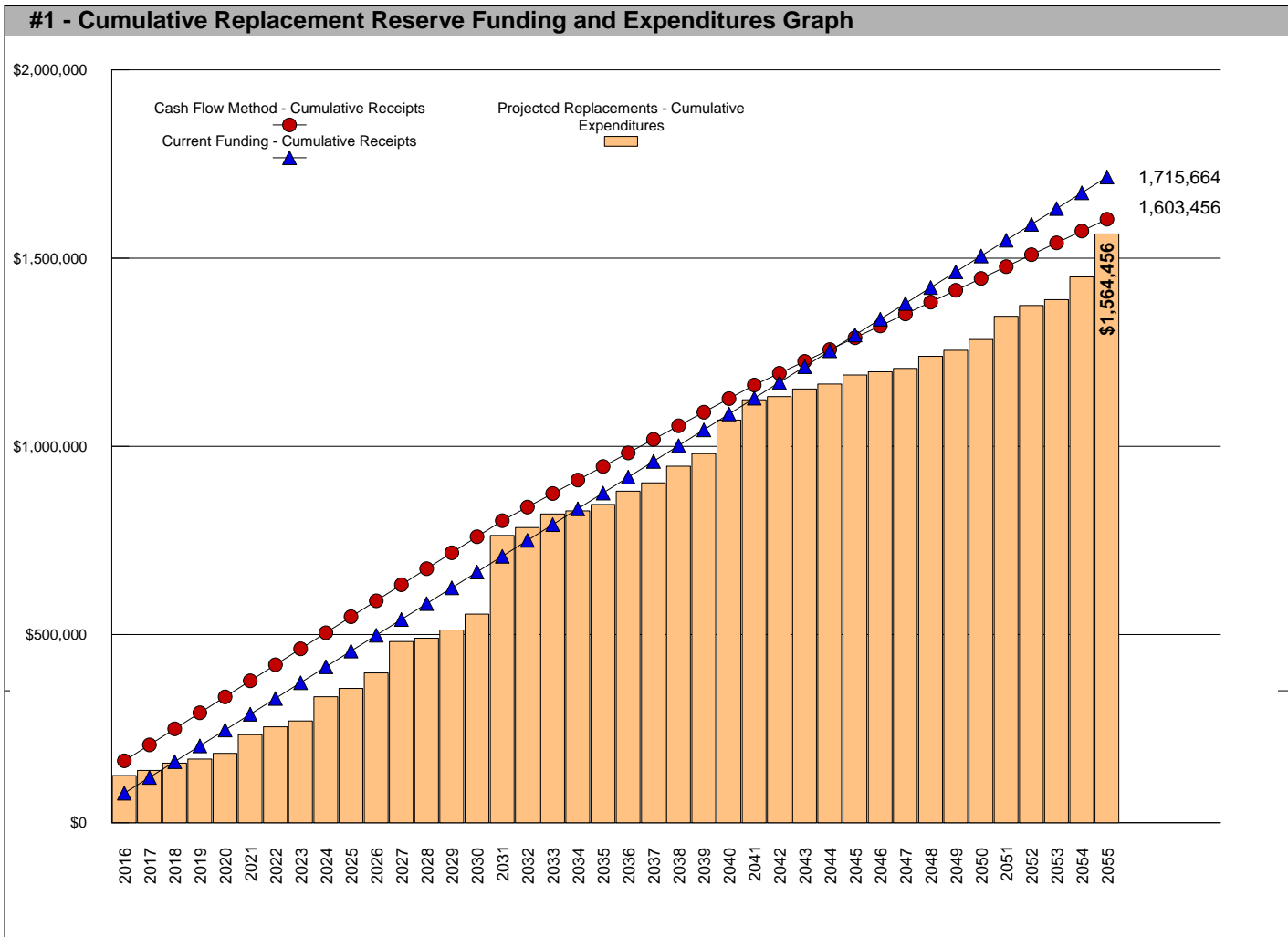
The Corrotoman by the Bay Replacement Reserve Analysis uses the Cash Flow Method (CFM) to calculate Replacement Reserve funding for the periodic replacement of the 107 Projected Replacements identified in the Replacement Reserve Inventory.

**\$128,063** RECOMMENDED REPLACEMENT RESERVE FUNDING FOR THE STUDY YEAR, 2016

\$18.06 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 A5.

Corrotoman by the Bay reports a Starting Balance of \$36,384 and Annual Funding totaling \$41,982. Current funding is inadequate to fund the \$1,564,456 of Projected Replacements scheduled in the Replacement Reserve Inventory over the 40-year Study Period. See Page A3 for a more detailed evaluation.



The Current Funding Objective as calculated by the Component Method (Fully Funded) is \$465,355 making the reserve account 7.8% funded. See the Appendix for more information on this method.

**REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION**

The Corrotoman by the Bay Replacement Reserve Analysis calculations of recommended funding of Replacement Reserves by the Cash Flow Method 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.

**2016 | STUDY YEAR**

The Association reports that their accounting year begins on March 1, and the Study Year, the first year evaluated by the Replacement Reserve Analysis, begins on March 1, 2015.

**40 Years | STUDY PERIOD**

The Replacement Reserve Analysis evaluates the funding of Replacement Reserves over a 40-year Study Period.

**\$36,384 | STARTING BALANCE**

The Association reports Replacement Reserves on Deposit totaling \$36,384 at the start of the Study Year.

**Level One | LEVEL OF SERVICE**

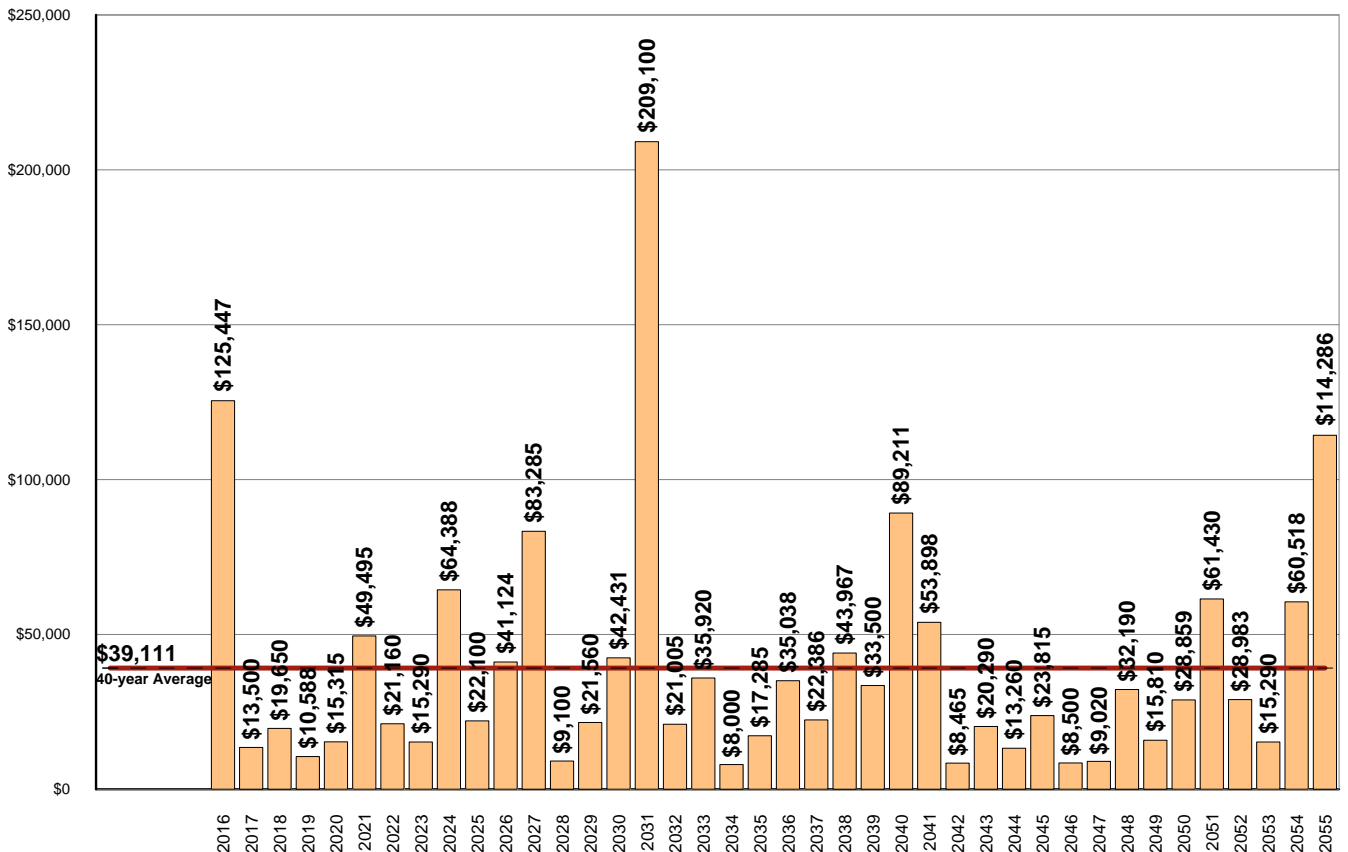
The Replacement Reserve Inventory has been developed in compliance with the National Reserve Study Standards for a Level One Study, as defined by the Community Associations Institute (CAI).

**\$1,564,456 | REPLACEMENT RESERVE INVENTORY - PROJECTED REPLACEMENTS**

The Corrotoman by the Bay Replacement Reserve Inventory identifies 107 items that will require periodic replacement, that are to be funded from Replacement Reserves. We estimate the cost of these replacements will be \$1,564,456 over the 40-year Study Period. The Projected Replacements are divided into 15 major categories starting on Page B3. Pages B1-B2 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 40-year Study Period. The red line shows the average annual expenditure of \$39,111. Section C provides a year by year Calendar of these expenditures.





## UPDATING

### 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 A4 and A5. The Projected Replacements listed on Page C2 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 A5.

### 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 A5.

### ANNUAL EXPENDITURES AND CURRENT FUNDING

The annual expenditures that comprise the \$1,564,456 of Projected Expenditures over the 40-year Study Period and the impact of the Association continuing to fund Replacement Reserves at the current level are detailed in Table 3.

<b>#3 - Table of Annual Expenditures and Current Funding Data - Years 1 through 40</b>										
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Starting Balance	\$36,384									
Projected Replacements	(\$125,447)	(\$13,500)	(\$19,650)	(\$10,588)	(\$15,315)	(\$49,495)	(\$21,160)	(\$15,290)	(\$64,388)	(\$22,100)
Annual Deposit	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982
End of Year Balance	(\$47,081)	(\$18,599)	\$3,733	\$35,127	\$61,794	\$54,281	\$75,103	\$101,795	\$79,390	\$99,272
Cumulative Expenditures	(\$125,447)	(\$138,947)	(\$158,597)	(\$169,185)	(\$184,500)	(\$233,995)	(\$255,155)	(\$270,445)	(\$334,832)	(\$356,932)
Cumulative Receipts	\$78,366	\$120,348	\$162,330	\$204,312	\$246,294	\$288,276	\$330,258	\$372,240	\$414,222	\$456,204
Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Projected Replacements	(\$41,124)	(\$83,285)	(\$9,100)	(\$21,560)	(\$42,431)	(\$209,100)	(\$21,005)	(\$35,920)	(\$8,000)	(\$17,285)
Annual Deposit	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982
End of Year Balance	\$100,130	\$58,827	\$91,709	\$112,131	\$111,682	(\$55,436)	(\$34,459)	(\$28,397)	\$5,585	\$30,282
Cumulative Expenditures	(\$398,056)	(\$481,341)	(\$490,441)	(\$512,001)	(\$554,432)	(\$763,532)	(\$784,537)	(\$820,457)	(\$828,457)	(\$845,742)
Cumulative Receipts	\$498,186	\$540,168	\$582,150	\$624,132	\$666,114	\$708,096	\$750,078	\$792,060	\$834,042	\$876,024
Year	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Projected Replacements	(\$35,038)	(\$22,386)	(\$43,967)	(\$33,500)	(\$89,211)	(\$53,898)	(\$8,465)	(\$20,290)	(\$13,260)	(\$23,815)
Annual Deposit	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982
End of Year Balance	\$37,227	\$56,822	\$54,838	\$63,320	\$16,091	\$4,174	\$37,691	\$59,383	\$88,105	\$106,272
Cumulative Expenditures	(\$880,779)	(\$903,166)	(\$947,132)	(\$980,632)	(\$1,069,834)	(\$1,123,742)	(\$1,132,207)	(\$1,152,497)	(\$1,165,757)	(\$1,189,572)
Cumulative Receipts	\$918,006	\$959,988	\$1,001,970	\$1,043,952	\$1,085,934	\$1,127,916	\$1,169,898	\$1,211,880	\$1,253,862	\$1,295,844
Year	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
Projected Replacements	(\$8,500)	(\$9,020)	(\$32,190)	(\$15,810)	(\$28,859)	(\$61,430)	(\$28,983)	(\$15,290)	(\$60,518)	(\$114,286)
Annual Deposit	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982	\$41,982
End of Year Balance	\$139,754	\$172,716	\$182,508	\$208,680	\$221,803	\$202,355	\$215,355	\$242,047	\$223,511	\$151,208
Cumulative Expenditures	(\$1,198,072)	(\$1,207,092)	(\$1,239,282)	(\$1,255,092)	(\$1,283,951)	(\$1,345,381)	(\$1,374,363)	(\$1,389,653)	(\$1,450,171)	(\$1,564,456)
Cumulative Receipts	\$1,337,826	\$1,379,808	\$1,421,790	\$1,463,772	\$1,505,754	\$1,547,736	\$1,589,718	\$1,631,700	\$1,673,682	\$1,715,664

### EVALUATION OF CURRENT FUNDING

The evaluation of Current Funding (Starting Balance of \$36,384 & annual funding of \$41,982), 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 107 Projected Replacements identified in the Replacement Reserve Inventory and that the Association will continue Annual Funding of \$41,982 throughout the 40-year Study Period.

Annual Funding of \$41,982 is approximately 33 percent of the \$128,063 recommended Annual Funding calculated by the Cash Flow Method for 2016, the Study Year.

Evaluation of the 107 Projected Replacements calculates an average annual expenditure over the next 40 years of \$39,111. Annual funding of \$41,982 is 107 percent of the average annual expenditure.

Our calculations identify funding shortfalls in 5 years of the Study Period with the initial shortfall in 2016. The largest shortfall, \$-55,436, occurs in 2031. All shortfalls can be seen and evaluated in Table 3 above.

In summary, Current Funding as reported by the Association and shown above, does not provide adequate funding for the \$1,564,456 of Projected Replacements scheduled in the Replacement Reserve Inventory over the Study Period.

### CASH FLOW METHOD FUNDING

**\$128,063**

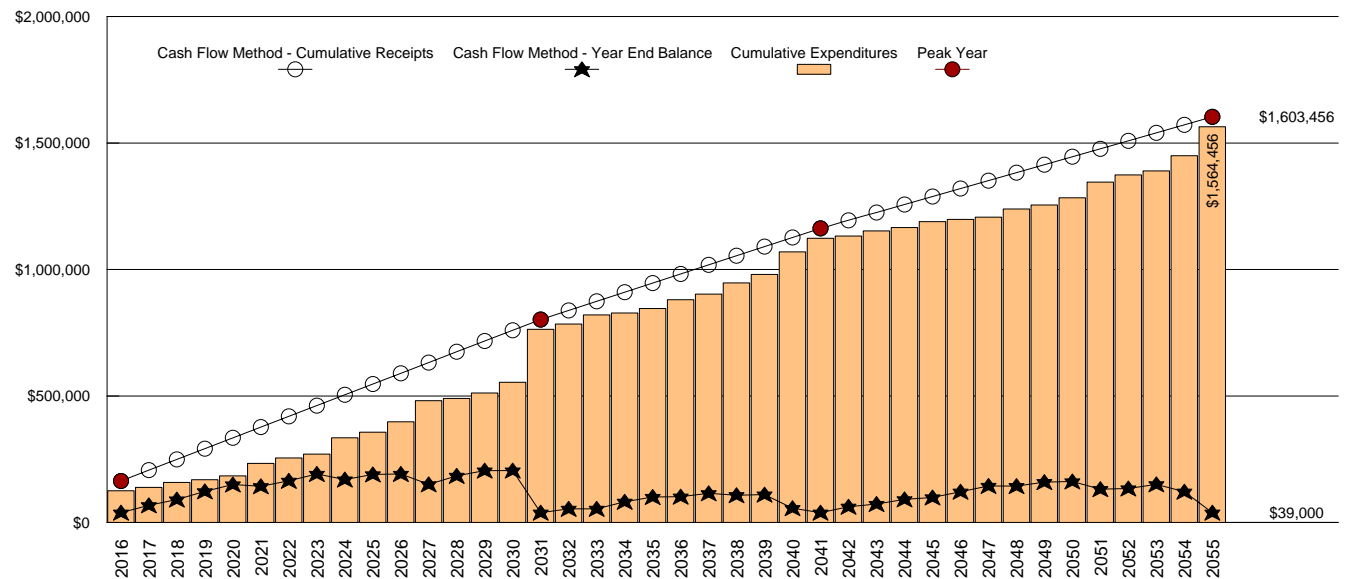
#### RECOMMENDED REPLACEMENT RESERVE FUNDING FOR 2016

\$18.06 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 2016 with Replacement Reserves on Deposit dropping to the Minimum Balance after the completion of \$125,447 of replacements in the Study Year, 2016. Recommended funding declines from \$128,063 in 2016 to \$42,539 in 2017. Peak Years are identified in Chart 4 and Table 5.
- **Minimum Balance.** The calculations assume a Minimum Balance of \$39,000 in Replacement Reserves. This is approx. 12 months of average expenditures based on the \$39,111, 40-year average annual expenditure.
- **Cash Flow Method Study Period.** Cash Flow Method calculates funding for \$1,564,456 of expenditures over the 40-year Study Period. It does not include funding for any projects beyond 2055 and in 2055, the end of year balance will always be the Minimum Balance.

**#4 - Cash Flow Method - Graph of Cumulative Receipts and Expenditures - Years 1 through 40**



**#5 - Cash Flow Method - Table of Receipts & Expenditures - Years 1 through 40**

Year	1st Peak - 2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Starting Balance	\$36,384									
Projected Replacements	(\$125,447)	(\$13,500)	(\$19,650)	(\$10,588)	(\$15,315)	(\$49,495)	(\$21,160)	(\$15,290)	(\$64,388)	(\$22,100)
Annual Deposit	\$128,063	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539
End of Year Balance	\$39,000	\$68,039	\$90,928	\$122,879	\$150,103	\$143,147	\$164,526	\$191,775	\$169,927	\$190,366
Cumulative Expenditures	\$125,447	\$138,947	\$158,597	\$169,185	\$184,500	\$233,995	\$255,155	\$270,445	\$334,832	\$356,932
Cumulative Receipts	\$164,447	\$206,986	\$249,525	\$292,064	\$334,603	\$377,142	\$419,681	\$462,220	\$504,759	\$547,298
Year	2026	2027	2028	2029	2030	2nd Peak - 2031	2032	2033	2034	2035
Projected Replacements	(\$41,124)	(\$83,285)	(\$9,100)	(\$21,560)	(\$42,431)	(\$209,100)	(\$21,005)	(\$35,920)	(\$8,000)	(\$17,285)
Annual Deposit	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539	\$42,539	\$36,021	\$36,021	\$36,021	\$36,021
End of Year Balance	\$191,781	\$151,035	\$184,474	\$205,453	\$205,561	\$39,000	\$54,016	\$54,117	\$82,138	\$100,874
Cumulative Expenditures	(\$398,056)	(\$481,341)	(\$490,441)	(\$512,001)	(\$554,432)	(\$763,532)	(\$784,537)	(\$820,457)	(\$828,457)	(\$845,742)
Cumulative Receipts	\$589,837	\$632,376	\$674,915	\$717,454	\$759,993	\$802,532	\$838,553	\$874,574	\$910,595	\$946,616
Year	2036	2037	2038	2039	2040	3rd Peak - 2041	2042	2043	2044	2045
Projected Replacements	(\$35,038)	(\$22,386)	(\$43,967)	(\$33,500)	(\$89,211)	(\$53,898)	(\$8,465)	(\$20,290)	(\$13,280)	(\$23,815)
Annual Deposit	\$36,021	\$36,021	\$36,021	\$36,021	\$36,021	\$36,021	\$31,480	\$31,480	\$31,480	\$31,480
End of Year Balance	\$101,857	\$115,492	\$107,547	\$110,067	\$56,877	\$39,000	\$62,015	\$73,204	\$91,424	\$99,088
Cumulative Expenditures	(\$880,779)	(\$903,166)	(\$947,132)	(\$980,632)	(\$1,069,843)	(\$1,123,742)	(\$1,132,207)	(\$1,152,497)	(\$1,165,757)	(\$1,189,572)
Cumulative Receipts	\$982,637	\$1,018,658	\$1,054,679	\$1,090,700	\$1,126,721	\$1,162,742	\$1,194,221	\$1,225,701	\$1,257,180	\$1,288,660
Year	2046	2047	2048	2049	2050	2051	2052	2053	2054	4th Peak - 2055
Projected Replacements	(\$8,500)	(\$9,020)	(\$32,190)	(\$15,810)	(\$28,859)	(\$61,430)	(\$28,983)	(\$15,290)	(\$60,518)	(\$114,286)
Annual Deposit	\$31,480	\$31,480	\$31,480	\$31,480	\$31,480	\$31,480	\$31,480	\$31,480	\$31,480	\$31,480
End of Year Balance	\$122,068	\$144,528	\$143,817	\$159,487	\$162,107	\$132,157	\$134,654	\$150,844	\$121,806	\$39,000
Cumulative Expenditures	(\$1,198,072)	(\$1,207,092)	(\$1,239,282)	(\$1,255,092)	(\$1,283,951)	(\$1,345,381)	(\$1,374,363)	(\$1,389,653)	(\$1,450,171)	(\$1,564,456)
Cumulative Receipts	\$1,320,140	\$1,351,619	\$1,383,099	\$1,414,578	\$1,446,058	\$1,477,538	\$1,509,017	\$1,540,497	\$1,571,976	\$1,603,456

## 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.

### **\$128,063** 2016 - CASH FLOW METHOD RECOMMENDED FUNDING

The 2016 Study Year calculations have been made using current replacement costs (see Page B2), modified by the Analyst for any project specific conditions.

### **\$44,453** 2017 - INFLATION ADJUSTED FUNDING

A new analysis calculates 2017 funding based on three assumptions;

- Replacement Reserves on Deposit totaling \$39,000 on March 1, 2016.
- All 2016 Projected Replacements listed on Page C2 accomplished at a cost to Replacement Reserves less than \$125,447.
- Construction Cost Inflation of 4.50 percent in 2016.

The \$44,453 inflation adjusted funding in 2017 is a 4.50 percent increase over the non-inflation adjusted 2017 funding of \$42,539.

### **\$46,694** 2018 - INFLATION ADJUSTED FUNDING

A new analysis calculates 2018 funding based on three assumptions;

- Replacement Reserves on Deposit totaling \$69,346 on March 1, 2017.
- All 2017 Projected Replacements listed on Page C2 accomplished at a cost to Replacement Reserves less than \$14,108.
- Construction Cost Inflation of 4.50 percent in 2017.

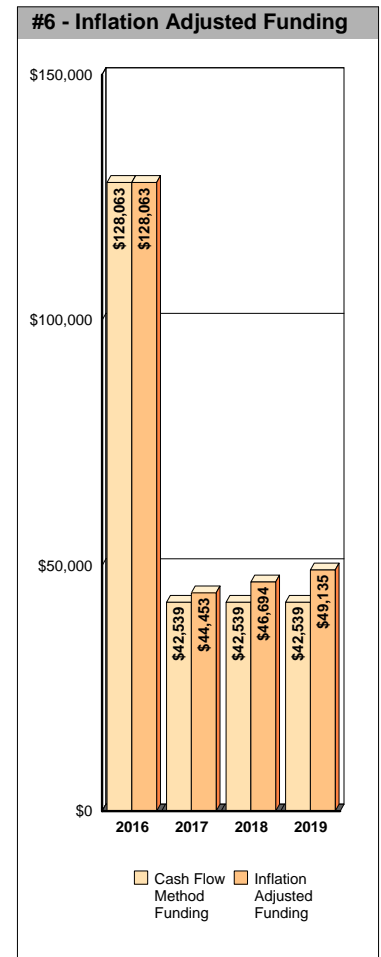
The \$46,694 inflation adjusted funding in 2018 is a 9.77 percent increase over the non-inflation adjusted 2018 funding of \$42,539.

### **\$49,135** 2019 - INFLATION ADJUSTED FUNDING

A new analysis calculates 2019 funding based on three assumptions;

- Replacement Reserves on Deposit totaling \$94,581 on March 1, 2018.
- All 2018 Projected Replacements listed on Page C2 accomplished at a cost to Replacement Reserves less than \$21,458.
- Construction Cost Inflation of 4.50 percent in 2018.

The \$49,135 inflation adjusted funding in 2019 is a 15.50 percent increase over the non-inflation adjusted funding of \$42,539.



## YEAR FIVE & 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 be professionally updated every 3 to 5 years.

## INFLATION ADJUSTMENT

Prior to approving a budget based upon the 2017, 2018 and 2019 inflation adjusted funding calculations above, the 4.50 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 percent), 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 2016, based on a 1.00 percent interest rate, we estimate the Association may earn \$377 on an average balance of \$37,692, \$542 on an average balance of \$54,173 in 2017, and \$820 on \$81,964 in 2018. The Association may elect to attribute 100 percent of the earned interest to Reserves, resulting in a reduction in the 2016 funding from \$128,063 to \$127,686 (a 0.29 percent reduction), \$44,453 to \$43,911 in 2017 (a 1.22 percent reduction), and \$46,694 to \$45,874 in 2018 (a 1.76 percent reduction).

## REPLACEMENT RESERVE STUDY - SUPPLEMENTAL COMMENTS

- Corrotoman by the Bay has 591 units. The type of property is a home owners association.
- The Cash Flow Method calculates the minimum annual funding necessary to prevent Replacement Reserves from dropping below the Minimum Balance. Failure to fund at least the recommended levels may result in funding not being available for the Projected Replacements listed in the Replacement Reserve Inventory.
- The accuracy of the Replacement Reserve Analysis is dependent upon expenditures from Replacement Reserves being made ONLY for the 107 Projected Replacements specifically listed in the Replacement Reserve Inventory. The inclusion/exclusion of items from the Replacement Reserve Inventory is discussed on Page B1.
- 10/12/15. Changed starting balance and current contribution.

## REPLACEMENT RESERVE INVENTORY GENERAL INFORMATION

Corrotoman by the Bay - Replacement Reserve Inventory identifies 146 items. Two types of items are identified, Projected Replacements and Excluded Items:

- **PROJECTED REPLACEMENTS.** 107 of the items 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 \$877,802. Replacements totaling \$1,564,456 are scheduled in the Replacement Reserve Inventory over the 40-year Study Period.

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.** 39 of the items are Excluded Items, and expenditures for these items are NOT scheduled for funding from Replacement Reserves. The accuracy of the calculations made in the Replacement Reserve Analysis is dependent on expenditures NOT being made for Excluded Items. The Excluded Items are listed in the Replacement Reserve Inventory to identify specific items and categories of items that are not to be funded from Replacement Reserves. There are multiple categories of items that 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 \$1,000 and/or a normal economic life of less than 3 years are typically excluded from funding from Replacement Reserves. This exclusion should reflect 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 B2.

**Long-lived Items.** Items that when properly maintained, can be assumed to have a life equal to the property as a whole, are typically excluded from the Replacement Reserve Inventory.

**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.

The rationale for the exclusion of an item from funding by Replacement Reserves is discussed in more detail in the 'Comments' sections of the Section B - Replacement Reserve Inventory.

- **CATEGORIES.** The 146 items included in the Corrotoman by the Bay Replacement Reserve Inventory are divided into 15 major categories. Each category is printed on a separate page, Pages B3 to B16.
- **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 analysis of this data.*

## REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (cont'd)

- **INVENTORY DATA.** Each of the 107 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 (Yrs). The number of years that a new and properly installed item should be expected to remain in service.

Remaining Economic Life (Yrs). 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.

Each of the 39 Excluded Items includes the Item Description, Units, and Number of Units. Many of the Excluded Items are listed as a 'Lump Sum' with a quantity of 1. For the Excluded Items, this indicates that all of the items identified by the 'Item Description' are excluded from funding by Replacement Reserves.

- **REVIEW OF EXPENDITURES.** This Replacement Reserve Study should be reviewed by an accounting professional representing the Association prior to implementation.
- **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 40 YEARS.** The calculations do not include funding for initial replacements beyond 40 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 40-year window.

**SITE COMPONENT  
 PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
1	Asphalt pavement, chip seal & patch	ls	1	\$6,000.00	2	1	\$6,000
2	Asphalt pavement, road overlay	sf	59,450	\$1.30	30	11	\$77,285
3	Asphalt pavement, parking overlay	sf	11,550	\$1.30	30	8	\$15,015
4	Gravel road, power rake & replenish	ls	1	\$4,000.00	2	none	\$4,000
5	Gravel road, reshape (25%)	sf	35,675	\$0.60	10	5	\$21,405
6	Concrete sidewalk (20%)	sf	230	\$8.75	60	3	\$2,013
7	Concrete sidewalk (20%)	sf	230	\$8.75	60	23	\$2,013
8	Concrete sidewalk (20%)	sf	230	\$8.75	60	43	\$2,013
9	Fence, 3-rail (vinyl) @ clubhouse	ft	290	\$23.45	25	14	\$6,801
10	Vinyl screen, 6' h x 12' w @ clubhouse	ft	72	\$23.45	25	none	\$1,688
11	Entry monument sign	ls	1	\$1,000.00	15	7	\$1,000
12	Clubhouse message board	ea	1	\$1,000.00	25	10	\$1,000
13	Septic tank & field, clubhouse	ls	1	\$8,400.00	40	5	\$8,400
<b>SITE COMPONENT - Replacement Costs - Subtotal</b>							<b>\$148,631</b>

**SITE COMPONENT  
 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.
- "Gravel road, replenish (5%)" based on Association experience of spending approximately \$2,000 per year on repairs and additional gravel.
- 7/18/15 - "Sign & post, street" deleted from study - maintained by the County.
- 7/18/15 - "Clubhouse message board" added to study.

**BUILDING EXTERIOR  
 PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
14	CH - Shingle asphalt/fiberglass	sf	1,640	\$3.50	30	20	\$5,740
15	CH - Gutter & downspout, 5" aluminum	ft	175	\$6.50	30	20	\$1,138
16	CH - Membrane roof	sf	840	\$6.50	18	17	\$5,460
17	CH - Siding & trim, vinyl	sf	1,575	\$5.40	35	25	\$8,505
18	CH - Window, opening	sf	185	\$44.00	35	23	\$8,140
19	CH - Entry door, solid wood, fan lite	ea	1	\$945.00	20	19	\$945
20	CH - Entry door, metal, 1/2 glass	ea	1	\$840.00	20	19	\$840
21	CH - Entry door, metal, 6-panel	ea	1	\$780.00	20	8	\$780
22	CH - Entry door, wood, 6-panel	ea	2	\$740.00	20	8	\$1,480
23	CH - Storm doors	ea	5	\$315.00	15	8	\$1,575
24	SS - Shingle asphalt/fiberglass	sf	830	\$3.50	30	20	\$2,905
25	SS - Siding & trim, vinyl	sf	750	\$5.40	35	25	\$4,050
26	SS - Window, opening	sf	30	\$44.00	35	8	\$1,320
27	SS - Entry door, wood, 1/2 glass	ea	1	\$500.00	20	8	\$500
28	SS - Garage door, fiberglass, 7x12	ea	1	\$1,500.00	20	8	\$1,500
29	P - Shingle asphalt/fiberglass	sf	1,090	\$3.50	30	20	\$3,815
30	P - Siding & trim, wood	sf	425	\$5.00	30	15	\$2,125
31	P - Concrete slab	sf	745	\$10.50	60	36	\$7,823
<b>BUILDING EXTERIOR - Replacement Costs - Subtotal</b>							<b>\$58,640</b>

**BUILDING EXTERIOR  
 COMMENTS**

- CH = clubhouse, SS = storage shed, P = picnic shelter.
  
- 7/18/15 - "Garden Shed" removed from site and removed from study.
  
- 7/18/15 - "CH - Membrane roof " added



**CLUBHOUSE BUILDING INTERIOR**  
**PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
32	Flooring, interior carpet	sf	1,400	\$4.35	10	7	\$6,090
33	Flooring, vinyl sheet goods, kitchen	sf	200	\$5.15	20	13	\$1,030
34	Flooring, ceramic, men's room	sf	125	\$16.30	30	21	\$2,038
35	Flooring, ceramic, women's room	sf	120	\$16.30	30	24	\$1,956
36	Wall tile, ceramic, men's room	sf	135	\$12.25	30	21	\$1,654
37	Interior lighting, general	ea	12	\$85.00	21	10	\$1,020
38	Ceiling fan	ea	5	\$250.00	15	6	\$1,250
39	Kitchen, cabinets	ft	22	\$220.00	30	10	\$4,840
40	Kitchen, laminate countertop	ft	22	\$40.00	30	10	\$880
41	Kitchen, range, Jenn-Air	ea	1	\$1,500.00	10	7	\$1,500
42	Kitchen, range, GE	ea	1	\$575.00	10	3	\$575
43	Kitchen, refrigerator, GE	ea	1	\$1,050.00	10	5	\$1,050
44	Kitchen, refrigerator, Frigidaire	ea	1	\$700.00	10	7	\$700
45	Restroom, renovate, men's	sf	125	\$50.00	25	13	\$6,250
46	Restroom, renovate, women's	sf	120	\$50.00	25	13	\$6,000
47	Office furnishings, allowance	ls	1	\$1,000.00	12	10	\$1,000
48	Computer station, desktop	ea	1	\$1,200.00	5	4	\$1,200
49	Office equipment (allowance)	ls	1	\$1,000.00	5	4	\$1,000
CLUBHOUSE BUILDING INTERIOR - Replacement Costs - Subtotal							\$40,032

**CLUBHOUSE BUILDING INTERIOR**  
**COMMENTS**

**BUILDING INTERIOR (cont.)**

**PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
50	Love seats	ea	2	\$525.00	10	4	\$1,050
51	Upholstered chair, large	ea	1	\$365.00	10	4	\$365
52	End table	ea	3	\$235.00	20	13	\$705
53	Table lamp	ea	3	\$155.00	10	6	\$465
54	Book shelf, 30" w x 72" h	ea	2	\$260.00	25	15	\$520
55	Book shelf, 30" w x 42" h	ea	3	\$210.00	25	15	\$630
56	Stack chair	ea	21	\$55.00	15	8	\$1,155
57	Folding chair	ea	34	\$35.00	15	8	\$1,190
58	Folding chair, upholstered	ea	11	\$175.00	15	8	\$1,925
59	Table, laminate top	ea	10	\$200.00	15	8	\$2,000
60	Misc. tables	ea	7	\$150.00	15	8	\$1,050
61	TV	ea	1	\$1,000.00	15	13	\$1,000
62	HVAC, furnace/ air handler, gas fired	ea	1	\$2,000.00	30	20	\$2,000
63	HVAC, outdoor condenser unit (3 ton)	ea	1	\$2,500.00	15	10	\$2,500
64	Emergency generator	ea	1	\$6,000.00	30	27	\$6,000
65	Water heater	ea	1	\$550.00	15	2	\$550
66	Interior painting	ls	1	\$7,500.00	8	1	\$7,500
<b>BUILDING INTERIOR (cont.) - Replacement Costs - Subtotal</b>							<b>\$30,605</b>

**BUILDING INTERIOR (cont.)**

**COMMENTS**

- 7/18/15 - "TV", "Emergency generator", "Water heater" and "Interior painting" added to study.
- 10/13/15. Deleted artwork.

**SWIMMING POOL  
 PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
67	Swimming pool, structure	sf	2,340	\$65.00	60	15	\$152,100
68	Swimming pool, coping	ft	220	\$30.00	20	14	\$6,600
69	Wading pool, structure	sf	182	\$65.00	60	15	\$11,830
70	Wading pool, coping	ft	60	\$30.00	20	14	\$1,800
71	Swimming pool, concrete deck, 25%	sf	1,040	\$11.00	30	5	\$11,440
72	Swimming pool, concrete deck, 25%	sf	1,040	\$11.00	30	10	\$11,440
73	Swimming pool, concrete deck, 25%	sf	1,040	\$11.00	30	15	\$11,440
74	Swimming pool, concrete deck, 25%	sf	1,040	\$11.00	30	20	\$11,440
75	Swimming pool pump (5 hp)	ea	1	\$4,500.00	15	14	\$4,500
76	Swimming pool filter	ea	2	\$1,800.00	20	19	\$3,600
77	Chlorine generator system	ls	1	\$5,000.00	15	14	\$5,000
78	Pool furniture, allowance	ls	1	\$2,000.00	7	3	\$2,000
79	Perimeter fence - 4' (chain link)	ft	405	\$16.00	30	8	\$6,480
80	Pool cover	sf	2,800	\$1.48	12	10	\$4,144
81	Diving board	ea	1	\$1,100.00	10	2	\$1,100
82	Diving board stand	ea	1	\$10,000.00	30	2	\$10,000
83	Pool painting	ls	1	\$3,000.00	5	4	\$3,000
<b>SWIMMING POOL - Replacement Costs - Subtotal</b>							<b>\$257,914</b>

**SWIMMING POOL  
 COMMENTS**

- We have assumed that the project to replace the pool deck will include the replacement of the plumbing and electrical systems installed beneath the pavement.

**COURTS & RECREATION EQUIPMENT**  
 PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
84	Tennis court, rebuild	ls	1	\$100,684.00	100	none	\$100,684
85	Tennis court, color coat	sf	13,200	\$0.95	8	8	\$12,540
86	Tennis court, resurface/overlay	ea	13,200	\$3.95	24	24	\$52,140
87	Tennis court, post & footings	pr	2	\$1,280.00	24	24	\$2,560
88	Tennis court, net	ea	2	\$350.00	5	4	\$700
89	Tennis court, fence	ft	450	\$33.50	35	none	\$15,075
90	Basketball court, concrete, replace	sf	400	\$9.50	30	10	\$3,800
91	Basketball pole & backstop	ea	1	\$1,200.00	20	5	\$1,200
92	Tot lot, arch climber	ea	1	\$1,050.00	15	6	\$1,050
93	Tot lot, slide	ea	1	\$1,575.00	15	6	\$1,575
94	Tot lot, swing	ea	1	\$1,890.00	15	6	\$1,890
95	Tot lot, merry-go-round	ea	1	\$1,155.00	15	6	\$1,155
96	Tot lot, spring toy	ea	5	\$1,155.00	15	6	\$5,775
97	Picnic tables	ea	12	\$225.00	15	9	\$2,700
98	B-B-Que grill	ea	1	\$500.00	20	10	\$500
99	Gas grill, large	ea	1	\$2,000.00	25	15	\$2,000

COURTS & RECREATION EQUIPMENT - Replacement Costs - Subtotal \$205,344

**COURTS & RECREATION EQUIPMENT**  
 COMMENTS

- Tot lots and tot lot equipment should be evaluated annually by a playground safety specialist for compliance with the Consumer Product Safety Commission, Handbook for Public Playground Safety. Defects should be corrected immediately to protect the users of the facilities from potential injury and the Association from potential liability for those injuries.
- 7/18/15 - "Tennis court, rebuild" normal life set to 100 years to be counted as a one-time expense. This item will be removed at the next study update.
- 7/18/15 - "B-B-Que grill" & "Gas grill, large" added to study.

**DOCKS AND BULKHEADS**  
**PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
100	Pier decking	sf	685	\$11.50	15	8	\$7,878
101	Pier structure	sf	685	\$18.50	30	22	\$12,673
102	Piling, freestanding	ea	14	\$575.00	30	22	\$8,050
103	Bulkhead, cap,	lf	350	\$6.90	15	14	\$2,415
104	Bulkhead, refurbish, 10% of repl.	ls	1	\$8,000.00	30	22	\$8,000
105	Bulkhead, replace	lf	350	\$250.00	60	39	\$87,500
106	Boat ramp	sf	510	\$12.00	30	17	\$6,120

DOCKS AND BULKHEADS - Replacement Costs - Subtotal      \$132,635

**DOCKS AND BULKHEADS**  
**COMMENTS**

- "Bulkhead, replace" remaining life set to 39 years because software will only calculate and include funding for items under 40 years out. We will update and begin to count down the remaining life when the actual remaining life reaches 39 years.
  
- Pier replacement cost based on actual 2005 cost supplied by the Association.

**GOLF COURSE**  
**PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
107	GC Golf course repairs	ls	1	\$4,000.00	2	none	\$4,000

GOLF COURSE - Replacement Costs - Subtotal \$4,000

**GOLF COURSE**  
**COMMENTS**

- GC = Golf Course
  
- 05/24/11. Added GC miscellaneous. Includes an annual cost for the maintenance, seeding, fertilizing, and grass cutting of the golf course.
  
- 06/24/11. Deleted irrigation and miniature golf.
- 02/14/13. Deleted regrading and sand traps, landscaping, putting practice green, and miscellaneous.
- 02/14/13. Added golf course repairs.

**VALUATION EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Site lighting fixtures	ls	1				EXCLUDED
	Property identification signage	ls	1				EXCLUDED
	Miscellaneous signage	ls	1				EXCLUDED
	Bench	ls	1				EXCLUDED
	Fire extinguisher	ls	1				EXCLUDED
	Emergency lighting, exit light, etc.	ls	1				EXCLUDED
	Signage	ls	1				EXCLUDED
	Interior doors	ls	1				EXCLUDED
	Pool access steps	ls	1				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 \$1,000.00 have not been scheduled for funding from Replacement Reserves. 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.

**LONG-LIFE EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Miscellaneous culverts	ls	1				EXCLUDED
	Building foundation(s)	ls	1				EXCLUDED
	Concrete floor slabs (interior)	ls	1				EXCLUDED
	Wall, floor, & roof structure	ls	1				EXCLUDED
	Common element electrical services	ls	1				EXCLUDED
	Electrical wiring	ls	1				EXCLUDED
	Water piping at common facilities	ls	1				EXCLUDED
	Waste piping at common facilities	ls	1				EXCLUDED
	Gas services at common facilities	ls	1				EXCLUDED
	Stainless steel pool fixtures	ls	1				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 (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Single family home, exterior & interior	ls	1				EXCLUDED
	Single family home, lot improvements	ls	1				EXCLUDED
	Single family home, utilities	ls	1				EXCLUDED
	Single family home, septic systems	ls	1				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 (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Primary electric feeds	ls	1				EXCLUDED
	Electric transformers	ls	1				EXCLUDED
	Cable TV systems and structures	ls	1				EXCLUDED
	Telephone cables and structures	ls	1				EXCLUDED
	Site lighting	ls	1				EXCLUDED
	Gas mains and meters	ls	1				EXCLUDED
	Water mains and meters	ls	1				EXCLUDED
	Stormwater management system	ls	1				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 (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Cleaning of asphalt pavement	ls	1				EXCLUDED
	Crack sealing of asphalt pavement	ls	1				EXCLUDED
	Landscaping and site grading	ls	1				EXCLUDED
	Exterior painting	ls	1				EXCLUDED
	Janitorial service	ls	1				EXCLUDED
	Repair services	ls	1				EXCLUDED
	Capital improvements	ls	1				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 by this standard 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 (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Government, roadways	ls	1				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 right-of-ways, including LIST ROADS, and adjacent properties.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

## PROJECTED ANNUAL REPLACEMENTS GENERAL INFORMATION

CALENDAR OF ANNUAL REPLACEMENTS. The 107 Projected Replacements in the Corrotoman by the Bay 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 C2.

### REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

- **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.
- **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 next thirty years, 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.
- **REVIEW OF THE REPLACEMENT RESERVE STUDY.** For this study to be effective, it should be reviewed by the Corrotoman by the Bay 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.

**PROJECTED REPLACEMENTS - YEARS 1 TO 6**

2016 - STUDY YEAR			2017 - YEAR 2			2018 - YEAR 3		
Item		\$	Item		\$	Item		\$
4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000
10	Vinyl screen, 6' h x 12' w @	\$1,688	66	Interior painting	\$7,500	65	Water heater	\$550
84	Tennis court, rebuild	\$100,684				81	Diving board	\$1,100
89	Tennis court, fence	\$15,075				82	Diving board stand	\$10,000
107	GC Golf course repairs	\$4,000				107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$125,447	Total Scheduled Replacements		\$13,500	Total Scheduled Replacements		\$19,650
2019 - YEAR 4			2020 - YEAR 5			2021 - YEAR 6		
Item		\$	Item		\$	Item		\$
1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000
6	Concrete sidewalk (20%)	\$2,013	48	Computer station, desktop	\$1,200	5	Gravel road, reshape (25%)	\$21,405
42	Kitchen, range, GE	\$575	49	Office equipment (allowance)	\$1,000	13	Septic tank & field, clubhous	\$8,400
78	Pool furniture, allowance	\$2,000	50	Love seats	\$1,050	43	Kitchen, refrigerator, GE	\$1,050
			51	Upholstered chair, large	\$365	71	Swimming pool, concrete de	\$11,440
			83	Pool painting	\$3,000	91	Basketball pole & backstop	\$1,200
			88	Tennis court, net	\$700			
			107	GC Golf course repairs	\$4,000			
Total Scheduled Replacements		\$10,588	Total Scheduled Replacements		\$15,315	Total Scheduled Replacements		\$49,495

**PROJECTED REPLACEMENTS - YEARS 7 TO 12**

Item	2022 - YEAR 7	\$
4	Gravel road, power rake & r	\$4,000
38	Ceiling fan	\$1,250
53	Table lamp	\$465
92	Tot lot, arch climber	\$1,050
93	Tot lot, slide	\$1,575
94	Tot lot, swing	\$1,890
95	Tot lot, merry-go-round	\$1,155
96	Tot lot, spring toy	\$5,775
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$21,160

Item	2023 - YEAR 8	\$
1	Asphalt pavement, chip seal	\$6,000
11	Entry monument sign	\$1,000
32	Flooring, interior carpet	\$6,090
41	Kitchen, range, Jenn-Air	\$1,500
44	Kitchen, refrigerator, Frigida	\$700
Total Scheduled Replacements		\$15,290

Item	2024 - YEAR 9	\$
3	Asphalt pavement, parking c	\$15,015
4	Gravel road, power rake & r	\$4,000
21	CH - Entry door, metal, 6-pa	\$780
22	CH - Entry door, wood, 6-pa	\$1,480
23	CH - Storm doors	\$1,575
26	SS - Window, opening	\$1,320
27	SS - Entry door, wood, 1/2 g	\$500
28	SS - Garage door, fiberglass	\$1,500
56	Stack chair	\$1,155
57	Folding chair	\$1,190
58	Folding chair, upholstered	\$1,925
59	Table, laminate top	\$2,000
60	Misc. tables	\$1,050
79	Perimeter fence - 4' (chain li	\$6,480
85	Tennis court, color coat	\$12,540
100	Pier decking	\$7,878
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$64,388

Item	2025 - YEAR 10	\$
1	Asphalt pavement, chip seal	\$6,000
48	Computer station, desktop	\$1,200
49	Office equipment (allowance	\$1,000
66	Interior painting	\$7,500
83	Pool painting	\$3,000
88	Tennis court, net	\$700
97	Picnic tables	\$2,700
Total Scheduled Replacements		\$22,100

Item	2026 - YEAR 11	\$
4	Gravel road, power rake & r	\$4,000
12	Clubhouse message board	\$1,000
37	Interior lighting, general	\$1,020
39	Kitchen, cabinets	\$4,840
40	Kitchen, laminate countertop	\$880
47	Office furnishings, allowance	\$1,000
63	HVAC, outdoor condenser u	\$2,500
72	Swimming pool, concrete de	\$11,440
78	Pool furniture, allowance	\$2,000
80	Pool cover	\$4,144
90	Basketball court, concrete, r	\$3,800
98	B-B-Que grill	\$500
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$41,124

Item	2027 - YEAR 12	\$
1	Asphalt pavement, chip seal	\$6,000
2	Asphalt pavement, road ove	\$77,285
All Replacements not listed		\$83,285

**PROJECTED REPLACEMENTS - YEARS 13 TO 18**

Item	2028 - YEAR 13	\$
4	Gravel road, power rake & r	\$4,000
81	Diving board	\$1,100
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$9,100

Item	2029 - YEAR 14	\$
1	Asphalt pavement, chip seal	\$6,000
33	Flooring, vinyl sheet goods,	\$1,030
42	Kitchen, range, GE	\$575
45	Restroom, renovate, men's	\$6,250
46	Restroom, renovate, women	\$6,000
52	End table	\$705
61	TV	\$1,000
Total Scheduled Replacements		\$21,560

Item	2030 - YEAR 15	\$
4	Gravel road, power rake & r	\$4,000
9	Fence, 3-rail (vinyl) @ clubh	\$6,801
48	Computer station, desktop	\$1,200
49	Office equipment (allowance)	\$1,000
50	Love seats	\$1,050
51	Upholstered chair, large	\$365
68	Swimming pool, coping	\$6,600
70	Wading pool, coping	\$1,800
75	Swimming pool pump (5 hp)	\$4,500
77	Chlorine generator system	\$5,000
83	Pool painting	\$3,000
88	Tennis court, net	\$700
103	Bulkhead, cap,	\$2,415
107	GC Golf course repairs	\$4,000
All Replacements not listed		\$42,431

Item	2031 - YEAR 16	\$
1	Asphalt pavement, chip seal	\$6,000
5	Gravel road, reshape (25%)	\$21,405
30	P - Siding & trim, wood	\$2,125
43	Kitchen, refrigerator, GE	\$1,050
54	Book shelf, 30" w x 72" h	\$520
55	Book shelf, 30" w x 42" h	\$630
67	Swimming pool, structure	\$152,100
69	Wading pool, structure	\$11,830
73	Swimming pool, concrete de	\$11,440
99	Gas grill, large	\$2,000
Total Scheduled Replacements		\$209,100

Item	2032 - YEAR 17	\$
4	Gravel road, power rake & r	\$4,000
53	Table lamp	\$465
85	Tennis court, color coat	\$12,540
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$21,005

Item	2033 - YEAR 18	\$
1	Asphalt pavement, chip seal	\$6,000
16	CH - Membrane roof	\$5,460
32	Flooring, interior carpet	\$6,090
41	Kitchen, range, Jenn-Air	\$1,500
44	Kitchen, refrigerator, Frigida	\$700
65	Water heater	\$550
66	Interior painting	\$7,500
78	Pool furniture, allowance	\$2,000
106	Boat ramp	\$6,120
Total Scheduled Replacements		\$35,920



**PROJECTED REPLACEMENTS - YEARS 19 TO 24**

Item	2034 - YEAR 19	\$
4	Gravel road, power rake & r	\$4,000
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$8,000

Item	2035 - YEAR 20	\$
1	Asphalt pavement, chip seal	\$6,000
19	CH - Entry door, solid wood,	\$945
20	CH - Entry door, metal, 1/2 c	\$840
48	Computer station, desktop	\$1,200
49	Office equipment (allowance)	\$1,000
76	Swimming pool filter	\$3,600
83	Pool painting	\$3,000
88	Tennis court, net	\$700
Total Scheduled Replacements		\$17,285

Item	2036 - YEAR 21	\$
4	Gravel road, power rake & r	\$4,000
14	CH - Shingle asphalt/fibergl	\$5,740
15	CH - Gutter & downspout, 5'	\$1,138
24	SS - Shingle asphalt/fibergl	\$2,905
29	P - Shingle asphalt/fiberglas	\$3,815
62	HVAC, furnace/ air handler,	\$2,000
74	Swimming pool, concrete de	\$11,440
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$35,038

Item	2037 - YEAR 22	\$
1	Asphalt pavement, chip seal	\$6,000
34	Flooring, ceramic, men's roc	\$2,038
36	Wall tile, ceramic, men's roo	\$1,654
38	Ceiling fan	\$1,250
92	Tot lot, arch climber	\$1,050
93	Tot lot, slide	\$1,575
94	Tot lot, swing	\$1,890
95	Tot lot, merry-go-round	\$1,155
96	Tot lot, spring toy	\$5,775
Total Scheduled Replacements		\$22,386

Item	2038 - YEAR 23	\$
4	Gravel road, power rake & r	\$4,000
11	Entry monument sign	\$1,000
47	Office furnishings, allowance	\$1,000
80	Pool cover	\$4,144
81	Diving board	\$1,100
101	Pier structure	\$12,673
102	Piling, freestanding	\$8,050
104	Bulkhead, refurbish, 10% of	\$8,000
107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$43,967

Item	2039 - YEAR 24	\$
1	Asphalt pavement, chip seal	\$6,000
7	Concrete sidewalk (20%)	\$2,013
18	CH - Window, opening	\$8,140
23	CH - Storm doors	\$1,575
42	Kitchen, range, GE	\$575
56	Stack chair	\$1,155
57	Folding chair	\$1,190
58	Folding chair, upholstered	\$1,925
59	Table, laminate top	\$2,000
60	Misc. tables	\$1,050
100	Pier decking	\$7,878
Total Scheduled Replacements		\$33,500

**PROJECTED REPLACEMENTS - YEARS 25 TO 30**

2040 - YEAR 25			2041 - YEAR 26			2042 - YEAR 27		
Item		\$	Item		\$	Item		\$
4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000
35	Flooring, ceramic, women's	\$1,956	5	Gravel road, reshape (25%)	\$21,405	53	Table lamp	\$465
48	Computer station, desktop	\$1,200	10	Vinyl screen, 6' h x 12' w @	\$1,688	107	GC Golf course repairs	\$4,000
49	Office equipment (allowance)	\$1,000	17	CH - Siding & trim, vinyl	\$8,505			
50	Love seats	\$1,050	25	SS - Siding & trim, vinyl	\$4,050			
51	Upholstered chair, large	\$365	43	Kitchen, refrigerator, GE	\$1,050			
78	Pool furniture, allowance	\$2,000	63	HVAC, outdoor condenser u	\$2,500			
83	Pool painting	\$3,000	66	Interior painting	\$7,500			
85	Tennis court, color coat	\$12,540	91	Basketball pole & backstop	\$1,200			
86	Tennis court, resurface/over	\$52,140						
87	Tennis court, post & footings	\$2,560						
88	Tennis court, net	\$700						
97	Picnic tables	\$2,700						
107	GC Golf course repairs	\$4,000						
Total Scheduled Replacements		\$89,211	Total Scheduled Replacements		\$53,898	Total Scheduled Replacements		\$8,465
2043 - YEAR 28			2044 - YEAR 29			2045 - YEAR 30		
Item		\$	Item		\$	Item		\$
1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000
32	Flooring, interior carpet	\$6,090	21	CH - Entry door, metal, 6-pa	\$780	48	Computer station, desktop	\$1,200
41	Kitchen, range, Jenn-Air	\$1,500	22	CH - Entry door, wood, 6-pa	\$1,480	49	Office equipment (allowance)	\$1,000
44	Kitchen, refrigerator, Frigida	\$700	27	SS - Entry door, wood, 1/2 g	\$500	75	Swimming pool pump (5 hp)	\$4,500
64	Emergency generator	\$6,000	28	SS - Garage door, fiberglass	\$1,500	77	Chlorine generator system	\$5,000
			61	TV	\$1,000	83	Pool painting	\$3,000
			107	GC Golf course repairs	\$4,000	88	Tennis court, net	\$700
						103	Bulkhead, cap,	\$2,415
Total Scheduled Replacements		\$20,290	Total Scheduled Replacements		\$13,260	Total Scheduled Replacements		\$23,815

**PROJECTED REPLACEMENTS - YEARS 31 TO 36**

2046 - YEAR 31			2047 - YEAR 32			2048 - YEAR 33		
Item		\$	Item		\$	Item		\$
4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000
98	B-B-Que grill	\$500	37	Interior lighting, general	\$1,020	65	Water heater	\$550
107	GC Golf course repairs	\$4,000	78	Pool furniture, allowance	\$2,000	81	Diving board	\$1,100
						82	Diving board stand	\$10,000
						85	Tennis court, color coat	\$12,540
						107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$8,500	Total Scheduled Replacements		\$9,020	Total Scheduled Replacements		\$32,190
2049 - YEAR 34			2050 - YEAR 35			2051 - YEAR 36		
Item		\$	Item		\$	Item		\$
1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000
33	Flooring, vinyl sheet goods,	\$1,030	47	Office furnishings, allowance	\$1,000	5	Gravel road, reshape (25%)	\$21,405
42	Kitchen, range, GE	\$575	48	Computer station, desktop	\$1,200	12	Clubhouse message board	\$1,000
52	End table	\$705	49	Office equipment (allowance	\$1,000	16	CH - Membrane roof	\$5,460
66	Interior painting	\$7,500	50	Love seats	\$1,050	43	Kitchen, refrigerator, GE	\$1,050
			51	Upholstered chair, large	\$365	71	Swimming pool, concrete de	\$11,440
			68	Swimming pool, coping	\$6,600	89	Tennis court, fence	\$15,075
			70	Wading pool, coping	\$1,800			
			80	Pool cover	\$4,144			
			83	Pool painting	\$3,000			
			88	Tennis court, net	\$700			
			107	GC Golf course repairs	\$4,000			
Total Scheduled Replacements		\$15,810	All Replacements not listed		\$28,859	Total Scheduled Replacements		\$61,430

**PROJECTED REPLACEMENTS - YEARS 37 TO 42**

Item	2052 - YEAR 37	\$	Item	2053 - YEAR 38	\$	Item	2054 - YEAR 39	\$
4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000	3	Asphalt pavement, parking c	\$15,015
31	P - Concrete slab	\$7,823	11	Entry monument sign	\$1,000	4	Gravel road, power rake & r	\$4,000
38	Ceiling fan	\$1,250	32	Flooring, interior carpet	\$6,090	23	CH - Storm doors	\$1,575
53	Table lamp	\$465	41	Kitchen, range, Jenn-Air	\$1,500	45	Restroom, renovate, men's	\$6,250
92	Tot lot, arch climber	\$1,050	44	Kitchen, refrigerator, Frigida	\$700	46	Restroom, renovate, women	\$6,000
93	Tot lot, slide	\$1,575				56	Stack chair	\$1,155
94	Tot lot, swing	\$1,890				57	Folding chair	\$1,190
95	Tot lot, merry-go-round	\$1,155				58	Folding chair, upholstered	\$1,925
96	Tot lot, spring toy	\$5,775				59	Table, laminate top	\$2,000
107	GC Golf course repairs	\$4,000				60	Misc. tables	\$1,050
						78	Pool furniture, allowance	\$2,000
						79	Perimeter fence - 4' (chain li	\$6,480
						100	Pier decking	\$7,878
						107	GC Golf course repairs	\$4,000
Total Scheduled Replacements		\$28,983	Total Scheduled Replacements		\$15,290	Total Scheduled Replacements		\$60,518

Item	2055 - YEAR 40	\$	Item	2056 (beyond Study Period)	\$	Item	2057 (beyond Study Period)	\$
1	Asphalt pavement, chip seal	\$6,000	4	Gravel road, power rake & r	\$4,000	1	Asphalt pavement, chip seal	\$6,000
9	Fence, 3-rail (vinyl) @ clubh	\$6,801	39	Kitchen, cabinets	\$4,840	2	Asphalt pavement, road ove	\$77,285
19	CH - Entry door, solid wood,	\$945	40	Kitchen, laminate countertop	\$880	66	Interior painting	\$7,500
20	CH - Entry door, metal, 1/2 c	\$840	54	Book shelf, 30" w x 72" h	\$520			
48	Computer station, desktop	\$1,200	55	Book shelf, 30" w x 42" h	\$630			
49	Office equipment (allowance)	\$1,000	63	HVAC, outdoor condenser u	\$2,500			
76	Swimming pool filter	\$3,600	72	Swimming pool, concrete de	\$11,440			
83	Pool painting	\$3,000	85	Tennis court, color coat	\$12,540			
88	Tennis court, net	\$700	90	Basketball court, concrete, r	\$3,800			
97	Picnic tables	\$2,700	99	Gas grill, large	\$2,000			
105	Bulkhead, replace	\$87,500	107	GC Golf course repairs	\$4,000			
Total Scheduled Replacements		\$114,286	Total Scheduled Replacements		\$47,150	Total Scheduled Replacements		\$90,785

## CONDITION ASSESSMENT

**General Comments.** Miller - Dodson Associates conducted a Reserve Study at Corrotoman by the Bay Association in July 2015. Corrotoman by the Bay Association is in generally good condition for a community constructed in 1967. A review of the Replacement Reserve Inventory will show that we are anticipating most of the components achieving their normal economic lives.

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

### 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.

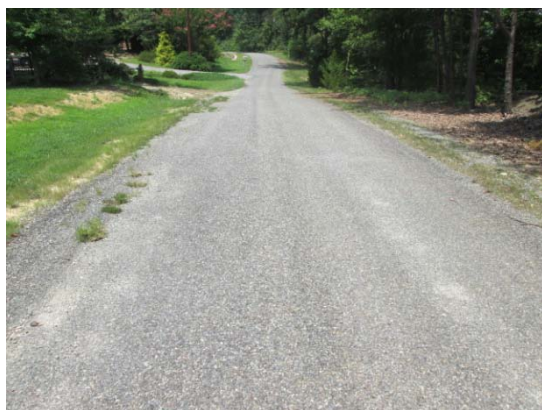
**Poor.** 10% to 0% of Normal Economic Life expected, with significant distress and wear. Left unattended, additional damage to underlying structures is likely to occur. Further maintenance is unlikely to be cost effective.

## SITE COMPONENTS

**Asphalt Pavement.** The asphalt paved roads are being maintained by as-needed patching and periodic chip seal applications. The average life of a chip seal coating is about 7 to 10 years. The Association reported spending between \$4,000 and \$5,000 per year on both the asphalt and the gravel roads to patch and chip seal asphalt roads and refurbish the gravel roads. We have allocated \$3,000 per year to the asphalt road repair and \$2,000 per year to the gravel road repair for a total of \$5,000 per year.

Areas of vegetation growing into the paving should be removed to prevent root damage to the asphalt. In addition, cracks should be filled between chip seal applications to prevent water penetration and further damage during freeze/thaw cycles.





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

In order to maintain the condition of the pavement throughout the community and to ensure the longest life of the asphalt, we recommend 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 it will not be funded from Reserves.
- **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 from 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 used is based on recent contracts for a two-inch overlay, which reflects the current local market for this work.

For seal coating, several different products are available. The older, more traditional seal coating products are simply paints. They coat the surface of the asphalt and they are minimally effective. However, the newer coating materials, such as those from Total Asphalt Management, Asphalt Restoration Technologies, Inc., and others, are penetrating. They are engineered, so to speak, to 'remoisturize' 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 in the forms of cracking and potholes. Remoisturizing the pavement can return its flexibility and extend the life of the pavement.

Lastly, the resource links provided on our website may provide insight into the general terms and concerns, including maintenance related advantages and disadvantages, which may help the Association better manage the asphalt pavements throughout the community: <http://mdareserves.com/resources/links/site-components>.

**Gravel Roads.** The gravel roads are in overall fair to good condition with several areas of erosion and loss of gravel. The roads were power raked and supplemented in early 2015. This operation should take place every year to keep the roads in good condition. About every 20 years, we anticipate the roads will need a more thorough “reshaping” with a motor grader to remove deep wheel ruts, high and low spots, and restore proper camber for drainage.



**Fencing.** The vinyl fencing at the clubhouse remains in overall good condition. Fencing systems have a large number of 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.

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.

For more information on fencing, visit our [website link](#) to the American Fence Association.

**Entry Sign.** The wood entry sign has been relocated to the clubhouse area. The sign is in good condition and can be touch-up painted to extend its economic life.



**Clubhouse Septic System.** The septic system serving the clubhouse remains in good operating condition. The Association did report there have been recent problems with the piping, but these were able to be repaired. Because of the age of the current system, the Association anticipates a new system will need to be installed in the near term. We have included funding for this work to take place in about 5 years. Engineering drawings were not used in the determination of these underground components. Instead, we have provided an estimate of the approximate replacement costs based on our experience with other facilities of similar size and configuration. The inspection and evaluation of underground lines and structures is beyond the scope of work for this study.

## CLUBHOUSE BUILDING EXTERIOR

**Building Roofing.** The clubhouse asphalt shingle roofing is approximately 9 years old and remains in good condition with normal aging noted. Over time, the shingles will lose the granular protective surface and we observed this has happened along the shingle edges. Asphalt shingle roofs can have a useful life of 20 to 50 years depending on the weight and quality of the shingle. Weathered, curled, and missing shingles are all indications that the shingles may be nearing the end of their useful life.

The low-slope asphalt roof on the rear of the building has been re-roofed with a membrane roof in excellent condition. Flat roofing systems typically have a useful life of 15 to 25 years.





Annual inspections are recommended, with cleaning, repair, and mitigation of vegetation performed as needed. Access, inspection, and repair work should be performed by contractors and personnel with the appropriate access equipment who are experienced in the types of roofing used for the facility.

For additional information on roofs and roof maintenance, please see the appropriate links on our web site at <http://mdareserves.com/resources/links/building-exterior>.

**Siding and Trim.** The vinyl siding on the clubhouse remains in overall good condition. Minor repairs have been made and there are a couple small holes in the siding on the restroom side.

Vinyl siding and trim can have an extended useful life if not damaged by impact, heat, or other physical reasons. However, the coatings and finishes typically have a useful life and over time begin to weather, chalk, and show their age. For these reasons, we have modeled for the replacement of the siding and trim every 35 years.



**Windows and Doors.** The windows at the clubhouse are in good condition with no defects noted or reported. The front and rear doors have been replaced.

In general, we recommend coordinating the replacement of these units with other exterior work, such as siding and roof replacements. The weather tightness of the building envelope often requires transitional flashing and caulking that should be performed in coordination with each other. Warranties and advantages in 'economy of scale' can often result in lower overall replacement costs and results that are more reliable. Lastly,

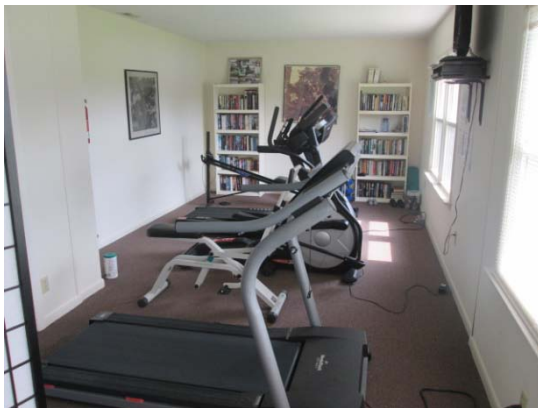
coordinated replacements offer the opportunity to correct initial construction defects and improve the effectiveness of details with improved construction techniques and materials.

For more information, please see our links at <http://mdareserves.com/resources/links/building-exterior>.

## CLUBHOUSE BUILDING INTERIOR

**Interior.** The clubhouse interior components remain in overall good condition. The carpet was replaced about three years ago and is in excellent condition. We have added the new TV and the existing water heater to the study. In addition, we have included painting of the interior on a 7 year schedule.

To extend the life of the carpet, it is important that the Association continue with a comprehensive maintenance program that includes regular vacuuming, spot and spill removal, interim cleaning of high traffic areas, and regular scheduled cleanings. It is also recommended that all entrances be fitted with walk-off mats to trap soil.





## MECHANICAL & ELECTRICAL

**Emergency Generator.** The Association installed a small emergency generator at the clubhouse building in 2012. We have included funding to replace the generator in approximately 30 years, which is the anticipated engine life given by the manufacturer.



## RECREATIONAL FACILITIES

**Swimming Pool.** The community operates an outdoor pool and wading pool of concrete construction. Listed below are the major components of the pool facilities:





- Pool Shell. The shell for the swimming pool remains in good condition.
- Pool Deck. The pool concrete deck has been patched where the filter system piping was recently replaced. The patches are smooth and in good condition. The remaining concrete deck has several cracks that should be ground smooth, if needed, and filled to prevent water penetration. There is one tripping hazard at a corner on the diving board end that should be ground down.
- Pool Paint. The pool paint is in good condition. We have included funding to repaint the pool every 5 years.
- Coping. The pool precast coping remains in overall good condition. The caulk joint between the coping and the deck is in overall good condition, but a couple isolated areas need touch-up.
- Pump and Filter System. The filter system is new as of 2014 and in good operating condition.

- Pool Fence. The swimming pool is enclosed by a chain link fence that remains in fair condition with areas of rust.

**Tot Lot.** The community maintains play equipment near the clubhouse, to include, a slide, monkey bars, spring toys and a merry-go-round. The equipment is older and does not meet current requirements for safety. For example, connections should be made with closed fasteners and not S-hooks. The facility facilities are in generally fair condition with minor wear and a few loose connections. The major defect is the lack of protective surfacing around and under the equipment. Adequate surfacing provides fall protection for the user. The "Public Playground Safety Handbook" listed below can provide guidance to the Association on what changes need to be made to make the equipment safe for use.



The safety of each individual piece of playground equipment as well as 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 is crucial. Please note that the evaluation of the equipment and these facilities for safety 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 web site at [www.mdareerves.com/resources/links/recreation](http://www.mdareerves.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 that is quoted by manufacturers for comparable equipment and add 30% for the disposal of the old equipment and installation of new equipment.

**Tennis Courts.** The community maintains two tennis courts. The overall condition of these courts is poor with severe cracking. The existing courts were installed at too low a grade and are frequently flooded during heavy rains. The Association is planning to totally replace the courts in 2016, to include, raising the court level to allow for proper drainage.



Listed below are the major components of the tennis court facilities:

- Asphalt Pavement (base layer). Once replaced, we have assumed a service life of 20 to 30 years for the asphalt base layer.
- Color Coat (surface layer). Annual cleaning is recommended to maintain the surface of the court. The base of a tennis court is subject to cracking and low spots known as “birdbaths” that can occur from weather and earth movement. A program to address cracks as they appear will help to prolong the useful life of the color coat. We have assumed a service life of five to ten years for the color coat.
- Fencing. We have assumed that the fencing will be replaced when the asphalt pavement is replaced. Posts and fencing should be inspected, repaired, and painted as needed to prolong their economic life. Periodic inspection of the posts, gates, hinges, and latches is also recommended, and it is important that posts and footings be protected to prevent soil erosion. In addition, care should be taken so that damage from string trimmers is minimized.
- Net Posts. We have assumed that the new posts will be replaced when the asphalt pavement is replaced.

**Basketball Court.** The community maintains a small basketball court. The asphalt court remains in good condition with minor cracking. Cracks should be filled with an elastomeric sealant to prevent water penetration and further damage during freeze/thaw cycles. The goal has been bent and will need to be replaced and we assume this will be funded through the operating budget.



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

**Wood Pier.** The wood pier remains in overall good condition with no significant defects noted. The pier is approximately 10 years old.



**Wood Pier Decking.** The wood decking on the main pier and the finger piers is exposed to harsh extremes of sun and weather. It will typically require replacement before the heavier members of the underlying structure. This decking will also be removed and replaced in its entirety when the underlying structure is replaced. To model this replacement pattern, we have provided for complete replacement incident to the replacement of the structure, and we have included an additional replacement interval for the wood pier decking at the midpoint of the service life of the underlying structure. The decking can be sealed every 2 to 3 years to protect the wood and extend its useful life.

The pier structure is in good 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 when the pier structure will require replacement, all piling also will be replaced.

The pier structure is in good 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 are in good condition.

**Bulkhead.** The bulkhead remains in overall good condition. Because it is most exposed to weathering, we anticipate the cap board will require replacement several times over the life of the bulkhead. It remains in good condition at this time.



**Boat Ramp.** The boat ramp remains in good condition with no significant cracks or damage noted. It was mentioned that the ramp is not long enough to easily launch some boats. The ramp may need to be extended in the future.

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 elements of the property to ascertain the remaining useful life and the replacement costs of these common elements. 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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## CASH FLOW METHOD ACCOUNTING SUMMARY

This Corrotoman by the Bay - Cash Flow Method Accounting Summary is an attachment to the Corrotoman by the Bay - Replacement Reserve Study dated Revised October 12, 2015 and is for use by accounting and reserve professionals experienced in Association funding and accounting principles. This Summary consists of four reports, the 2016, 2017, and 2018 Cash Flow Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- CASH FLOW METHOD CATEGORY FUNDING REPORT, 2016, 2017, and 2018. Each of the 107 Projected Replacements listed in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of 8 categories. The following information is summarized by category in each report:
  - Normal Economic Life and Remaining Economic Life of the Projected Replacements.
  - Cost of all Scheduled Replacements in each category.
  - Replacement Reserves on Deposit allocated to the category at the beginning and end of the report period.
  - Cost of Projected Replacements in the report period.
  - Recommended Replacement Reserve Funding allocated to the category during the report period as calculated by the Cash Flow Method.
- THREE-YEAR REPLACEMENT FUNDING REPORT. This report details the allocation of the \$36,384 Beginning Balance (at the start of the Study Year) and the \$213,141 of additional Replacement Reserve Funding in 2016 through 2018 (as calculated in the Replacement Reserve Analysis) to each of the 107 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and discussed below. The calculated data includes:
  - Identification and estimated cost of each Projected Replacement scheduled in years 2016 through 2018.
  - Allocation of the \$36,384 Beginning Balance to the Projected Replacements by Chronological Allocation.
  - Allocation of the \$213,141 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2016 through 2018, by Chronological Allocation.
- CHRONOLOGICAL ALLOCATION. Chronological Allocation assigns Replacement Reserves to Projected Replacements on a "first come, first serve" basis in keeping with the basic philosophy of the Cash Flow Method. The Chronological Allocation methodology is outlined below.
  - The first step is the allocation of the \$36,384 Beginning Balance to the Projected Replacements in the Study Year. Remaining unallocated funds are next allocated to the Projected Replacements in subsequent years in chronological order until the total of Projected Replacements in the next year is greater than the unallocated funds. Projected Replacements in this year are partially funded with each replacement receiving percentage funding. The percentage of funding is calculated by dividing the unallocated funds by the total of Projected Replacements in the partially funded year.

At Corrotoman by the Bay the Beginning Balance funds 29.0% of Scheduled Replacements in the Study Year.
  - The next step is the allocation of the \$128,063 of 2016 Cash Flow Method Reserve Funding calculated in the Replacement Reserve Analysis. These funds are first allocated to fund the partially funded Projected Replacements and then to subsequent years in chronological order as outlined above.

At Corrotoman by the Bay the Beginning Balance and the 2016 Replacement Reserve Funding, funds replacements through 2018 and partial funds (55.3%) replacements in 2019.
  - Allocations of the 2017 and 2018 Reserve Funding are done using the same methodology.
  - The Three-Year Replacement Funding Report details component by component allocations made by Chronological Allocation.

## 2016 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 107 Projected Replacements included in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of the 8 categories listed in TABLE CF1 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- A Beginning Balance of \$36,384 as of the first day of the Study Year, March 1, 2015.
- Total reserve funding (including the Beginning Balance) of \$164,447 in the Study Year.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2016 being accomplished in 2016 at a cost of \$125,447.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2016 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF1							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2016 BEGINNING BALANCE	2016 RESERVE FUNDING	2016 PROJECTED REPLACEMENTS	2016 END OF YEAR BALANCE
SITE COMPONENT	2 to 60 years	0 to 43 years	\$148,631	\$1,650	\$18,466	(\$5,688)	\$14,427
BUILDING EXTERIOR	15 to 60 years	8 to 36 years	\$58,640				
CLUBHOUSE BUILDING INTERIOR	5 to 30 years	3 to 24 years	\$40,032		\$318		\$318
BUILDING INTERIOR (cont.)	8 to 30 years	1 to 27 years	\$30,605		\$8,050		\$8,050
SWIMMING POOL	5 to 60 years	2 to 20 years	\$257,914		\$12,205		\$12,205
COURTS & RECREATION EQUIPMENT	5 to 100 years	0 to 24 years	\$205,344	\$33,574	\$82,185	(\$115,759)	
DOCKS AND BULKHEADS	15 to 60 years	8 to 39 years	\$132,635				
GOLF COURSE	2 years	0 years	\$4,000	\$1,160	\$6,840	(\$4,000)	\$4,000

## 2017 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 107 Projected Replacements included in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of the 8 categories listed in TABLE CF2 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$39,000 on March 1, 2016.
- Total reserve funding (including the Beginning Balance) of \$206,986 from 2016 through 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2017 being accomplished in 2017 at a cost of \$13,500.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2017 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF2							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2017 BEGINNING BALANCE	2017 RESERVE FUNDING	2017 PROJECTED REPLACEMENTS	2017 END OF YEAR BALANCE
SITE COMPONENT	2 to 60 years	0 to 42 years	\$148,631	\$14,427	\$23,852	(\$6,000)	\$32,279
BUILDING EXTERIOR	15 to 60 years	7 to 35 years	\$58,640				
CLUBHOUSE BUILDING INTERIOR	5 to 30 years	2 to 23 years	\$40,032	\$318	\$2,934		\$3,252
BUILDING INTERIOR (cont.)	8 to 30 years	0 to 26 years	\$30,605	\$8,050	\$1,415	(\$7,500)	\$1,965
SWIMMING POOL	5 to 60 years	1 to 19 years	\$257,914	\$12,205	\$9,092		\$21,297
COURTS & RECREATION EQUIPMENT	5 to 100 years	3 to 99 years	\$205,344		\$1,245		\$1,245
DOCKS AND BULKHEADS	15 to 60 years	7 to 38 years	\$132,635				
GOLF COURSE	2 years	1 years	\$4,000	\$4,000	\$4,000		\$8,000

## 2018 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 107 Projected Replacements included in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of the 8 categories listed in TABLE CF3 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$68,039 on March 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$249,525 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2018 being accomplished in 2018 at a cost of \$19,650.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2018 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF3							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2018 BEGINNING BALANCE	2018 RESERVE FUNDING	2018 PROJECTED REPLACEMENTS	2018 END OF YEAR BALANCE
SITE COMPONENT	2 to 60 years	0 to 41 years	\$148,631	\$32,279	\$22,474	(\$4,000)	\$50,753
BUILDING EXTERIOR	15 to 60 years	6 to 34 years	\$58,640				
CLUBHOUSE BUILDING INTERIOR	5 to 30 years	1 to 22 years	\$40,032	\$3,252	\$1,490		\$4,742
BUILDING INTERIOR (cont.)	8 to 30 years	0 to 25 years	\$30,605	\$1,965	\$341	(\$550)	\$1,756
SWIMMING POOL	5 to 60 years	0 to 18 years	\$257,914	\$21,297	\$6,243	(\$11,100)	\$16,440
COURTS & RECREATION EQUIPMENT	5 to 100 years	2 to 98 years	\$205,344	\$1,245	\$9,055		\$10,300
DOCKS AND BULKHEADS	15 to 60 years	6 to 37 years	\$132,635				
GOLF COURSE	2 years	0 years	\$4,000	\$8,000	\$2,936	(\$4,000)	\$6,936





### COMPONENT METHOD



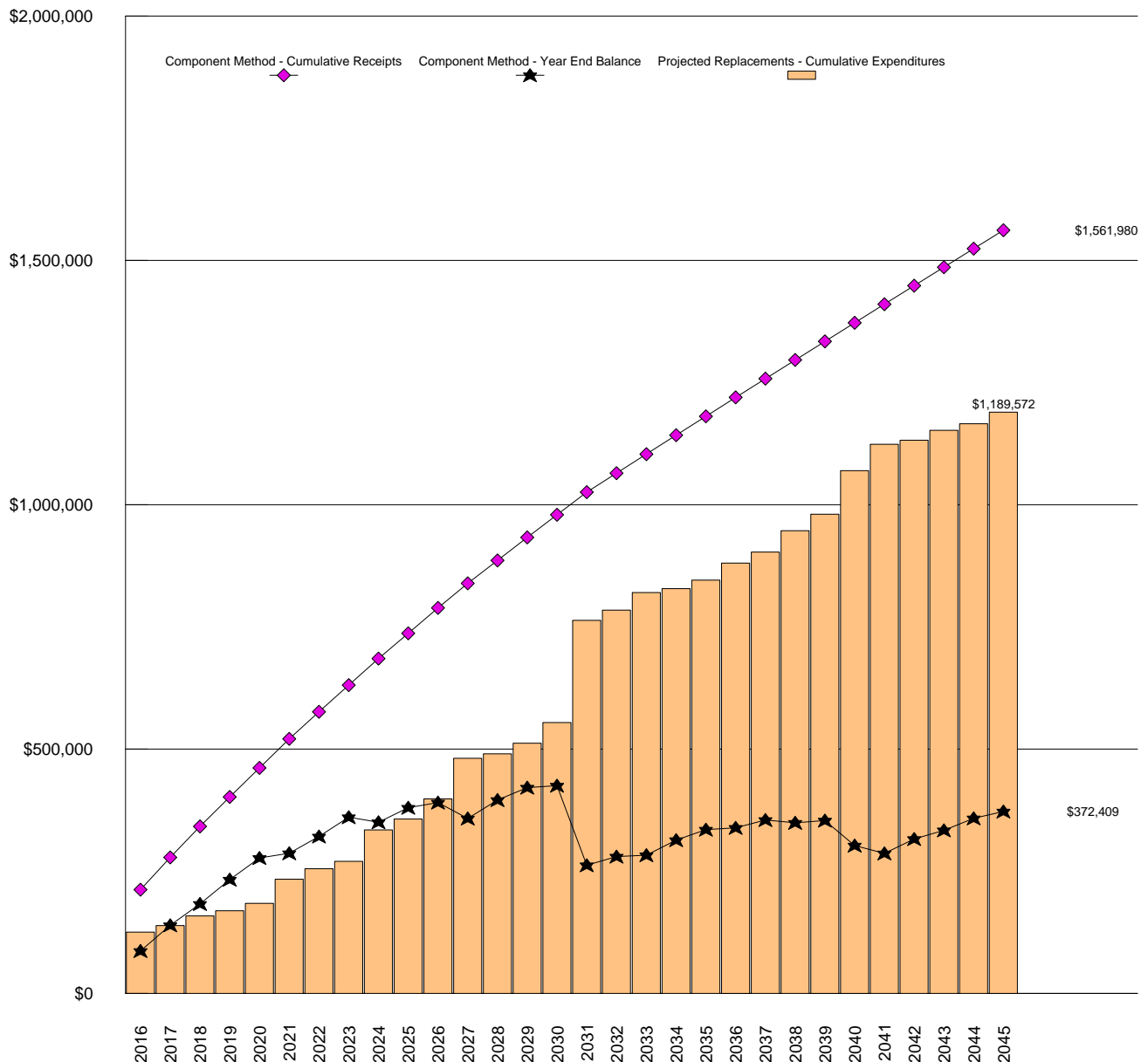
\$176,122

#### COMPONENT METHOD RECOMMENDED ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2016.

\$24.83 Per unit (average), recommended monthly funding of Replacement Reserves

General. The Component Method (also referred to as the Full Funded Method) is a very conservative mathematical model developed by HUD in the early 1980s. Each of the 107 Projected Replacements listed in the Replacement Reserve Inventory is treated as a separate account. The Beginning Balance is allocated to each of the individual accounts, as is all subsequent funding of Replacement Reserves. These funds are "locked" in these individual accounts and are not available to fund other Projected Replacements. The calculation of Recommended Annual Funding of Replacement Reserves is a multi-step process outlined in more detail on Page CM2.

Component Method - Cumulative Receipts and Expenditures Graph



**COMPONENT METHOD (cont'd)**

- **Current Funding Objective.** A Current Funding Objective is calculated for each of the Projected Replacements listed in the Replacement Reserve Inventory. Replacement Cost is divided by the Normal Economic Life to determine the nominal annual contribution. The Remaining Economic Life is then subtracted from the Normal Economic Life to calculate the number of years that the nominal annual contribution should have been made. The two values are then multiplied to determine the Current Funding Objective. This is repeated for each of the 107 Projected Replacements. The total, \$465,355, is the Current Funding Objective.

For an example, consider a very simple Replacement Reserve Inventory with one Projected Replacement, a fence with a \$1,000 Replacement Cost, a Normal Economic Life of 10 years, and a Remaining Economic Life of 2 years. A contribution to Replacement Reserves of \$100 (\$1,000 + 10 years) should have been made in each of the previous 8 years (10 years - 2 years). The result is a Current Funding Objective of \$800 (8 years x \$100 per year).

- **Funding Percentage.** The Funding Percentage is calculated by dividing the Beginning Balance (\$36,384) by the Current Funding Objective (\$465,355). At Corrotoman by the Bay the Funding Percentage is 7.8%
- **Allocation of the Beginning Balance.** The Beginning Balance is divided among the 107 Projected Replacements in the Replacement Reserve Inventory. The Current Funding Objective for each Projected Replacement is multiplied by the Funding Percentage and these funds are then "locked" into the account of each item.

If we relate this calculation back to our fence example, it means that the Association has not accumulated \$800 in Reserves (the Funding Objective), but rather at 7.8 percent funded, there is \$63 in the account for the fence.

- **Annual Funding.** The Recommended Annual Funding of Replacement Reserves is then calculated for each Projected Replacement. The funds allocated to the account of the Projected Replacement are subtracted from the Replacement Cost. The result is then divided by the number of years until replacement, and the result is the annual funding for each of the Projected Replacements. The sum of these is \$176,122, the Component Method Recommended Annual Funding of Replacement Reserves in the Study Year (2016).

In our fence example, the \$63 in the account is subtracted from the \$1,000 Total Replacement Cost and divided by the 2 years that remain before replacement, resulting in an annual deposit of \$469. Next year, the deposit remains \$469, but in the third year, the fence is replaced and the annual funding adjusts to \$100.

- **Adjustment to the Component Method for interest and inflation.** The calculations in the Replacement Reserve Analysis do not account for interest earned on Replacement Reserves, inflation, or a constant annual increase in Annual Funding of Replacement Reserves. The Component Method is a very conservative method and if the Analysis is updated regularly, adequate funding will be maintained without the need for adjustments.

**Component Method Data - Years 1 through 30**

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Beginning balance	\$36,384									
Recommended annual funding	\$176,122	\$65,988	\$63,396	\$60,258	\$59,549	\$59,418	\$55,406	\$54,496	\$54,251	\$51,857
Interest on reserves										
Expenditures	\$125,447	\$13,500	\$19,650	\$10,588	\$15,315	\$49,495	\$21,160	\$15,290	\$64,388	\$22,100
Year end balance	\$87,059	\$139,547	\$183,293	\$232,964	\$277,198	\$287,121	\$321,367	\$360,573	\$350,437	\$380,194
Cumulative Expenditures	\$125,447	\$138,947	\$158,597	\$169,185	\$184,500	\$233,995	\$255,155	\$270,445	\$334,832	\$356,932
Cumulative Receipts	\$212,506	\$278,495	\$341,891	\$402,149	\$461,698	\$521,116	\$576,522	\$631,018	\$685,269	\$737,126
Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Recommended annual funding	\$51,774	\$50,463	\$46,901	\$46,901	\$46,507	\$46,211	\$38,855	\$38,855	\$38,730	\$38,730
Interest on reserves										
Expenditures	\$41,124	\$83,285	\$9,100	\$21,560	\$42,431	\$209,100	\$21,005	\$35,920	\$8,000	\$17,285
Year end balance	\$390,844	\$358,022	\$395,823	\$421,164	\$425,240	\$262,352	\$280,202	\$283,137	\$313,867	\$335,311
Cumulative Expenditures	\$398,056	\$481,341	\$490,441	\$512,001	\$554,432	\$763,532	\$784,537	\$820,457	\$828,457	\$845,742
Cumulative Receipts	\$788,900	\$839,363	\$886,264	\$933,165	\$979,672	\$1,025,884	\$1,064,739	\$1,103,594	\$1,142,324	\$1,181,053
Year	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Recommended annual funding	\$38,730	\$38,374	\$38,332	\$38,064	\$37,919	\$37,998	\$37,884	\$37,884	\$37,871	\$37,871
Interest on reserves										
Expenditures	\$35,038	\$22,386	\$43,967	\$33,500	\$89,211	\$53,898	\$8,465	\$20,290	\$13,260	\$23,815
Year end balance	\$339,004	\$354,991	\$349,357	\$353,921	\$302,629	\$286,729	\$316,148	\$333,742	\$358,353	\$372,409
Cumulative Expenditures	\$880,779	\$903,166	\$947,132	\$980,632	\$1,069,843	\$1,123,742	\$1,132,207	\$1,152,497	\$1,165,757	\$1,189,572
Cumulative Receipts	\$1,219,783	\$1,258,157	\$1,296,489	\$1,334,553	\$1,372,472	\$1,410,471	\$1,448,355	\$1,486,239	\$1,524,109	\$1,561,980



## COMPONENT METHOD ACCOUNTING SUMMARY

This Corrotoman by the Bay - Component Method Accounting Summary is an attachment to the Corrotoman by the Bay - Replacement Reserve Study dated Revised October 12, 2015 and is for use by accounting and reserve professionals experienced in Association funding and accounting principles. This Summary consists of four reports, the 2016, 2017, and 2018 Component Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- COMPONENT METHOD CATEGORY FUNDING REPORT, 2016, 2017, and 2018. Each of the 107 Projected Replacements listed in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of 8 categories. The following information is summarized by category in each report:
  - Normal Economic Life and Remaining Economic Life of the Projected Replacements.
  - Cost of all Scheduled Replacements in each category.
  - Replacement Reserves on Deposit allocated to the category at the beginning and end of the report period.
  - Cost of Projected Replacements in the report period.
  - Recommended Replacement Reserve Funding allocated to the category during the report period as calculated by the Component Method.
- THREE-YEAR REPLACEMENT FUNDING REPORT. This report details the allocation of the \$36,384 Beginning Balance (at the start of the Study Year) and the \$305,507 of additional Replacement Reserve funding from 2016 to 2018 (as calculated in the Replacement Reserve Analysis) to each of the 107 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using the Component Method as outlined in the Replacement Reserve Analysis. The calculated data includes:
  - Identification and estimated cost of each Projected Replacement schedule in years 2016 through 2018.
  - Allocation of the \$36,384 Beginning Balance to the Projected Replacements by the Component Method.
  - Allocation of the \$305,507 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2016 through 2018, by the Component Method.

## 2016 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 107 Projected Replacements included in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of the 8 categories listed in TABLE CM1 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- A Beginning Balance of \$36,384 as of the first day of the Study Year, March 1, 2015.
- Total reserve funding (including the Beginning Balance) of \$212,506 in the Study Year.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2016 being accomplished in 2016 at a cost of \$125,447.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

**2016 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM1**

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2016 BEGINNING BALANCE	2016 RESERVE FUNDING	2016 PROJECTED REPLACEMENTS	2016 END OF YEAR BALANCE
SITE COMPONENT	2 to 60 years	0 to 43 years	\$148,631	\$6,696	\$21,960	\$5,688	\$22,967
BUILDING EXTERIOR	15 to 60 years	8 to 36 years	\$58,640	\$1,392	\$2,923		\$4,315
CLUBHOUSE BUILDING INTERIOR	5 to 30 years	3 to 24 years	\$40,032	\$1,117	\$3,770		\$4,887
BUILDING INTERIOR (cont.)	8 to 30 years	1 to 27 years	\$30,605	\$954	\$5,545		\$6,499
SWIMMING POOL	5 to 60 years	2 to 20 years	\$257,914	\$12,744	\$20,601		\$33,344
COURTS & RECREATION EQUIPMENT	5 to 100 years	0 to 24 years	\$205,344	\$9,926	\$112,942	\$115,759	\$7,109
DOCKS AND BULKHEADS	15 to 60 years	8 to 39 years	\$132,635	\$3,242	\$4,695		\$7,937
GOLF COURSE	2 years	0 years	\$4,000	\$313	\$3,687	\$4,000	

## 2017 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 107 Projected Replacements included in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of the 8 categories listed in TABLE CM2 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$87,059 on March 1, 2016.
- Total reserve funding (including the Beginning Balance) of \$278,495 from 2016 through 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2017 being accomplished in 2017 at a cost of \$13,500.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

**2017 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM2**

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2017 BEGINNING BALANCE	2017 RESERVE FUNDING	2017 PROJECTED REPLACEMENTS	2017 END OF YEAR BALANCE
SITE COMPONENT	2 to 60 years	0 to 42 years	\$148,631	\$22,967	\$18,783	\$6,000	\$35,750
BUILDING EXTERIOR	15 to 60 years	7 to 35 years	\$58,640	\$4,315	\$2,923		\$7,238
CLUBHOUSE BUILDING INTERIOR	5 to 30 years	2 to 23 years	\$40,032	\$4,887	\$3,770		\$8,657
BUILDING INTERIOR (cont.)	8 to 30 years	0 to 26 years	\$30,605	\$6,499	\$5,545	\$7,500	\$4,545
SWIMMING POOL	5 to 60 years	1 to 19 years	\$257,914	\$33,344	\$20,601		\$53,945
COURTS & RECREATION EQUIPMENT	5 to 100 years	3 to 99 years	\$205,344	\$7,109	\$7,671		\$14,781
DOCKS AND BULKHEADS	15 to 60 years	7 to 38 years	\$132,635	\$7,937	\$4,695		\$12,632
GOLF COURSE	2 years	1 years	\$4,000		\$2,000		\$2,000

## 2018 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 107 Projected Replacements included in the Corrotoman by the Bay Replacement Reserve Inventory has been assigned to one of the 8 categories listed in TABLE CM3 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$139,547 on March 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$341,891 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2018 being accomplished in 2018 at a cost of \$19,650.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

**2018 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM3**

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2018 BEGINNING BALANCE	2018 RESERVE FUNDING	2018 PROJECTED REPLACEMENTS	2018 END OF YEAR BALANCE
SITE COMPONENT	2 to 60 years	0 to 41 years	\$148,631	\$35,750	\$18,783	\$4,000	\$50,534
BUILDING EXTERIOR	15 to 60 years	6 to 34 years	\$58,640	\$7,238	\$2,923		\$10,160
CLUBHOUSE BUILDING INTERIOR	5 to 30 years	1 to 22 years	\$40,032	\$8,657	\$3,770		\$12,427
BUILDING INTERIOR (cont.)	8 to 30 years	0 to 25 years	\$30,605	\$4,545	\$2,953	\$550	\$6,948
SWIMMING POOL	5 to 60 years	0 to 18 years	\$257,914	\$53,945	\$20,601	\$11,100	\$63,446
COURTS & RECREATION EQUIPMENT	5 to 100 years	2 to 98 years	\$205,344	\$14,781	\$7,671		\$22,452
DOCKS AND BULKHEADS	15 to 60 years	6 to 37 years	\$132,635	\$12,632	\$4,695		\$17,327
GOLF COURSE	2 years	0 years	\$4,000	\$2,000	\$2,000	\$4,000	

## COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT

TABLE CM4 below details the allocation of the \$36,384 Beginning Balance, as reported by the Association and the \$305,507 of Replacement Reserve Funding calculated by the Cash Flow Method from 2016 to 2018, to the 107 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made by Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and outlined on Page CF1. The accuracy of the allocations is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$36,384 on March 1, 2015.
- Replacement Reserves on Deposit totaling \$87,059 on March 1, 2016.
- Replacement Reserves on Deposit totaling \$139,547 on March 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$341,891 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory from 2016 to 2018 being accomplished as scheduled in the Replacement Reserve Inventory at a cost of \$158,597.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates, Inc., to arrange for an update of the Replacement Reserve Study.

### COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CM4

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance	2018 Reserve Funding	2018 Projected Replacements	2018 End of Year Balance
SITE COMPONENT												
1	Asphalt pavement, chip seal & patch	6,000		3,000		3,000	3,000	(6,000)		3,000		3,000
2	Asphalt pavement, road overlay	77,285	3,626	6,138		9,764	6,138		15,902	6,138		22,040
3	Asphalt pavement, parking overlay	15,015	822	1,577		2,399	1,577		3,976	1,577		5,553
4	Gravel road, power rake & replenish	4,000	313	3,687	(4,000)		2,000		2,000	2,000	(4,000)	
5	Gravel road, reshape (25%)	21,405	669	3,456		4,125	3,456		7,581	3,456		11,037
6	Concrete sidewalk (20%)	2,013	147	466		613	466		1,080	466		1,546
7	Concrete sidewalk (20%)	2,013	94	80		174	80		254	80		334
8	Concrete sidewalk (20%)	2,013	42	45		87	45		132	45		176
9	Fence, 3-rail (vinyl) @ clubhouse	6,801	213	439		652	439		1,091	439		1,530
10	Vinyl screen, 6' h x 12' w @ clubhouse	1,688	132	1,556	(1,688)		68		68	68		135
11	Entry monument sign	1,000	36	120		157	120		277	120		398
12	Clubhouse message board	1,000	44	87		131	87		218	87		305
13	Septic tank & field, clubhouse	8,400	558	1,307		1,865	1,307		3,172	1,307		4,479
BUILDING EXTERIOR												
14	CH - Shingle asphalt/fiberglass	5,740	135	267		402	267		668	267		935
15	CH - Gutter & downspout, 5" aluminum	1,138	27	53		80	53		132	53		185
16	CH - Membrane roof	5,460		303		303	303		607	303		910
17	CH - Siding & trim, vinyl	8,505	171	321		492	321		812	321		1,133
18	CH - Window, opening	8,140	200	331		531	331		862	331		1,193
19	CH - Entry door, solid wood, fan lite	945		47		47	47		95	47		142
20	CH - Entry door, metal, 1/2 glass	840		42		42	42		84	42		126
21	CH - Entry door, metal, 6-panel	780	34	83		116	83		199	83		282
22	CH - Entry door, wood, 6-panel	1,480	64	157		221	157		378	157		536
23	CH - Storm doors	1,575	49	170		219	170		388	170		558
24	SS - Shingle asphalt/fiberglass	2,905	68	135		203	135		338	135		473
25	SS - Siding & trim, vinyl	4,050	81	153		234	153		387	153		539
26	SS - Window, opening	1,320	77	138		215	138		353	138		491
27	SS - Entry door, wood, 1/2 glass	500	22	53		75	53		128	53		181
28	SS - Garage door, fiberglass, 7x12	1,500	65	159		224	159		384	159		543
29	P - Shingle asphalt/fiberglass	3,815	89	177		267	177		444	177		622
30	P - Siding & trim, wood	2,125	78	128		206	128		333	128		461
31	P - Concrete slab	7,823	234	205		440	205		645	205		850
CLUBHOUSE BUILDING INTERIOR												
32	Flooring, interior carpet	6,090	95	749		845	749		1,594	749		2,343
33	Flooring, vinyl sheet goods, kitchen	1,030	24	72		96	72		168	72		240
34	Flooring, ceramic, men's room	2,038	42	91		133	91		224	91		315
35	Flooring, ceramic, women's room	1,956	25	77		103	77		180	77		257
36	Wall tile, ceramic, men's room	1,654	34	74		108	74		182	74		255
37	Interior lighting, general	1,020	38	89		127	89		217	89		306
38	Ceiling fan	1,250	52	171		223	171		394	171		565
39	Kitchen, cabinets	4,840	240	418		658	418		1,076	418		1,494

COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CM4 cont'd													
Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance	2018 Reserve Funding	2018 Projected Replacements	2018 End of Year Balance	2019 Reserve Funding
40	Kitchen, laminate countertop	880	44	76		120	76		196	76		272	
41	Kitchen, range, Jenn-Air	1,500	23	185		208	185		393	185		577	
42	Kitchen, range, GE	575	27	137		164	137		301	137		438	
43	Kitchen, refrigerator, GE	1,050	33	170		202	170		372	170		541	
44	Kitchen, refrigerator, Frigidaire	700	11	86		97	86		183	86		269	
45	Restroom, renovate, men's	6,250	215	431		646	431		1,077	431		1,508	
46	Restroom, renovate, women's	6,000	206	414		620	414		1,034	414		1,448	
47	Office furnishings, allowance	1,000	7	90		97	90		187	90		277	
48	Computer station, desktop	1,200		240		240	240		480	240		720	
49	Office equipment (allowance)	1,000		200		200	200		400	200		600	
BUILDING INTERIOR (cont.)													
50	Love seats	1,050	41	202		243	202		445	202		646	
51	Upholstered chair, large	365	14	70		84	70		155	70		225	
52	End table	705	17	49		66	49		115	49		164	
53	Table lamp	465	11	65		76	65		141	65		206	
54	Book shelf, 30" w x 72" h	520	15	32		46	32		78	32		109	
55	Book shelf, 30" w x 42" h	630	18	38		56	38		94	38		133	
56	Stack chair	1,155	36	124		160	124		285	124		409	
57	Folding chair	1,190	37	128		165	128		293	128		421	
58	Folding chair, upholstered	1,925	60	207		267	207		475	207		682	
59	Table, laminate top	2,000	63	215		278	215		493	215		708	
60	Misc. tables	1,050	33	113		146	113		259	113		372	
61	TV	1,000	5	71		76	71		147	71		218	
62	HVAC, furnace/ air handler, gas fired	2,000	47	93		140	93		233	93		326	
63	HVAC, outdoor condenser unit (3 ton)	2,500	52	223		275	223		497	223		720	
64	Emergency generator	6,000	31	213		244	213		458	213		671	
65	Water heater	550	34	172		206	172		378	172	(550)		
66	Interior painting	7,500	440	3,530		3,970	3,530	(7,500)		938		938	
SWIMMING POOL													
67	Swimming pool, structure	152,100	8,721	8,961		17,682	8,961		26,643	8,961		35,604	
68	Swimming pool, coping	6,600	129	431		560	431		992	431		1,423	
69	Wading pool, structure	11,830	678	697		1,375	697		2,072	697		2,769	
70	Wading pool, coping	1,800	35	118		153	118		270	118		388	
71	Swimming pool, concrete deck, 25%	11,440	716	1,787		2,503	1,787		4,290	1,787		6,078	
72	Swimming pool, concrete deck, 25%	11,440	566	989		1,555	989		2,543	989		3,532	
73	Swimming pool, concrete deck, 25%	11,440	417	689		1,106	689		1,795	689		2,484	
74	Swimming pool, concrete deck, 25%	11,440	268	532		800	532		1,332	532		1,864	
75	Swimming pool pump (5 hp)	4,500		300		300	300		600	300		900	
76	Swimming pool filter	3,600		180		180	180		360	180		540	
77	Chlorine generator system	5,000		333		333	333		667	333		1,000	
78	Pool furniture, allowance	2,000	67	483		550	483		1,034	483		1,517	
79	Perimeter fence - 4' (chain link)	6,480	355	681		1,035	681		1,716	681		2,396	
80	Pool cover	4,144	27	374		401	374		776	374		1,150	
81	Diving board	1,100	60	347		407	347		753	347	(1,100)		
82	Diving board stand	10,000	704	3,099		3,802	3,099		6,901	3,099	(10,000)		
83	Pool painting	3,000		600		600	600		1,200	600		1,800	
COURTS & RECREATION EQUIPM													
84	Tennis court, rebuild	100,684	7,872	92,812	(100,684)		1,007		1,007	1,007		2,014	
85	Tennis court, color coat	12,540		1,393		1,393	1,393		2,787	1,393		4,180	
86	Tennis court, resurface/overlay	52,140		2,086		2,086	2,086		4,171	2,086		6,257	
87	Tennis court, post & footings	2,560		102		102	102		205	102		307	
88	Tennis court, net	700		140		140	140		280	140		420	
89	Tennis court, fence	15,075	1,179	13,896	(15,075)		431		431	431		861	
90	Basketball court, concrete, replace	3,800	188	328		517	328		845	328		1,173	
91	Basketball pole & backstop	1,200	66	189		255	189		444	189		633	
92	Tot lot, arch climber	1,050	44	144		188	144		331	144		475	
93	Tot lot, slide	1,575	66	216		281	216		497	216		713	
94	Tot lot, swing	1,890	79	259		338	259		596	259		855	
95	Tot lot, merry-go-round	1,155	48	158		206	158		364	158		523	
96	Tot lot, spring toy	5,775	241	791		1,031	791		1,822	791		2,613	
97	Picnic tables	2,700	70	263		333	263		596	263		859	
98	B-B-Que grill	500	18	44		61	44		105	44		149	
99	Gas grill, large	2,000	56	121		178	121		299	121		421	
DOCKS AND BULKHEADS													
100	Pier decking	7,878	246	848		1,094	848		1,942	848		2,790	
101	Pier structure	12,673	231	541		772	541		1,313	541		1,854	
102	Piling, freestanding	8,050	147	344		490	344		834	344		1,178	
103	Bulkhead, cap,	2,415		161		161	161		322	161		483	

## 1. COMMON INTEREST DEVELOPMENTS - AN OVERVIEW

Over the past 40 years, the responsibility for community facilities and infrastructure around many of 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 500 Community Associations in the United States. According to the 1990 U.S. Census, there were 130,000 Community Associations. Community Associations Institute (CAI), a national trade association, estimates there were more than 200,000 Community Associations in the year 2000, and that the number of Community Associations will continue to multiply.

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 problems. Although Community Associations have succeeded in solving many short-term problems, many Associations have failed to properly plan for the tremendous 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 exposed to the burden of special assessments, major increases in Association fees, and 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 replacement, a general view of the condition of these components, and an effective financial plan to fund projected periodic replacements. The Replacement Reserve Study consists of the following:

- Replacement Reserve Study Introduction. The introduction provides a description of the property, reviews the intent of the Replacement Reserve Study, and lists documents and site evaluations upon which the Replacement Reserve Study is based.
- Section A Replacement Reserve Analysis. Many components owned by the Association have a limited life and require periodic replacement. Therefore, it is essential the Association have a financial plan that provides funding for the timely replacement of these components in order to protect the safety, appearance, and value of the community. In conformance with American Institute of Certified Public Accountant guidelines, a Replacement Reserve Analysis evaluates the current funding of Replacement Reserves as reported by the Association and recommends annual funding of Replacement Reserves by two generally accepted accounting methods; the Cash Flow Method and the Component Method. Miller - Dodson provides a replacement reserve recommendation based on the Cash Flow Method in Section A, and the Component Method in the Appendix of the report.
- 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. The Replacement Reserve Inventory also provides information about components excluded from the Replacement Reserve Inventory whose replacement is not scheduled for funding from Replacement Reserves.

Replacement Reserve Inventory includes estimates of the normal economic life and the remaining economic life for those components whose replacement is 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. Several of the 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 during 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). The Appendix also includes the Accounting Summary for the Cash Flow Method and the Component Method.

### 3. METHODS OF ANALYSIS

The Replacement Reserve industry generally recognizes two different methods of accounting for Replacement Reserve Analysis. Due to the difference in accounting methodologies, these methods lead to different calculated values for the Minimum Annual Contribution to the Reserves. The results of both methods are presented in this report. The Association should obtain the advice of its accounting professional as to which method is more appropriate for the Association. The two methods are:

- **Cash Flow Method.** The Cash Flow Method is sometimes referred to as the "Pooling Method." It calculates the minimum constant annual contribution to reserves (Minimum Annual Deposit) required to meet projected expenditures without allowing total reserves on hand to fall below the specified minimum level in any year.

First, the Minimum Recommended Reserve Level to be Held on Account is determined based on the age, condition, and replacement cost of the individual components. The mathematical model then allocates the estimated replacement costs to the future years in which they are projected to occur. Based on these expenditures, it then calculates the minimum constant yearly contribution (Minimum Annual Deposit) to the reserves necessary to keep the reserve balance at the end of each year above the Minimum Recommended Reserve Level to be Held on Account. The Cash Flow Analysis assumes that the Association will have authority to use all of the reserves on hand for replacements as the need occurs. This method usually results in a Minimum Annual Deposit that is less than that arrived at by the Component Method.

- **Component Method.** This method is a time tested mathematical model developed by HUD in the early 1980s, but has been generally relegated to a few States that require it by law. For the vast majority of Miller - Dodson's clients, this method is not used.

The Component Method treats each item in the replacement schedule as an individual line item budget. Generally, the Minimum Annual Contribution to Reserves is higher when calculated by the Component Method. The mathematical model for this method works as follows:

First, the total Current Objective is calculated, which is the reserve amount that would have accumulated had all of the items on the schedule been funded from initial construction at their current replacement costs. Next, the Reserves Currently on Deposit (as reported by the Association) are distributed to the components in the schedule in proportion to the Current Objective. The Minimum Annual Deposit for each component is equal to the Estimated Replacement Cost, minus the Reserves on Hand, divided by the years of life remaining.

### 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 individuals responsible for maintaining the community after acceptance of our proposal. After completion of the Study, the Study should be reviewed by the Board of Directors, individuals responsible for maintaining the community, and the Association's accounting professionals. We are dependent upon the Association for correct information, documentation, and drawings.
- **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 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 Method, above.

**Component Analysis.** See Component Method, above.

**Contingency.** An allowance for unexpected requirements. Roughly the same as the Minimum Recommended Reserve Level to be Held on Account used in the Cash Flow Method of analysis.

**Critical Year.** In the Cash Flow Method, a year in which the reserves on hand are projected to fall to the established minimum level. See Minimum Recommended Reserve Level to be Held on Account.

**Current Objective.** This is the reserve amount that would have accumulated had the item been funded from initial construction at its current replacement cost. It is equal to the estimated replacement cost divided by the estimated economic life, times the number of years expended (the difference between the Estimated Economic Life and the Estimated Life Left). The Total Current Objective can be thought of as the amount of reserves the Association should now have on hand based on the sum of all of the Current Objectives.

**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 Economic Life.** 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 Economic Life Left.** 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.

**Estimated Initial Replacement.** For a Cyclic Replacement Item (see above), the number of years until the replacement cycle is expected to begin.

**Estimated Replacement Cycle.** For a Cyclic Replacement Item, the number of years over which the remainder of the component's replacement occurs.

**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 Deposit in the Study Year.** Shown on the Summary Sheet A1. The calculated requirement for contribution to reserves in the study year as calculated by the Component Method (see above).

**Minimum Recommended Reserve Level to be Held on Account.** Shown on the Summary Sheet A1, this number is used in the Cash Flow Method only. This is the prescribed level below which the reserves will not be allowed to fall in any year. This amount is determined based on the age, condition, and replacement cost of the individual components. This number is normally given as a percentage of the total Estimated Replacement Cost of all reserve components.

**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.)

Normal Replacement Schedules. The list of Normal Replacement Items by category or location. These items appear on pages designated.

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. This study covers a 40-year period.

One Time Deposit Required to Fully Fund Reserves. Shown on the Summary Sheet A1 in the Component Method summary, this is the difference between the Total Current Objective and the Reserves Currently on Deposit.

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.

Reserves on Hand. Shown in the Cyclic Replacement and Normal Replacement Schedules, this is the amount of reserves allocated to each component item in the Cyclic or Normal Replacement schedules. This figure is based on the ratio of Reserves Currently on Deposit divided by the total Current Objective.

Replacement Reserve Study. An analysis of all of the components of the common property of the Association for which a need for 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, Estimated Economic Life, and Estimated Life Left. The objective of the study is to calculate a recommended annual contribution 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    FT: feet    LS: lump sum    PR: pair    SF: square feet    SY: square yard

What is a Reserve Study?  
Who are we?



<http://bcove.me/nc0o69t7>

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



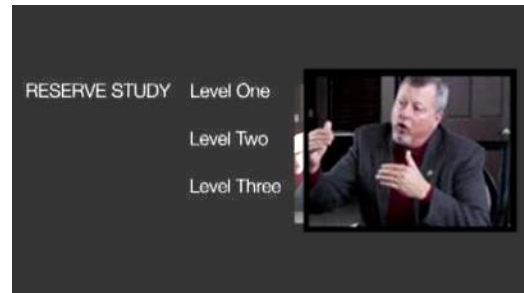
<http://bcove.me/stt373hj>

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



<http://bcove.me/81ch7kit>

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



<http://bcove.me/ixis1yxm>

What is in a Reserve Study and what is out?  
Improvement vs Component, is there a difference?



<http://bcove.me/81ch7kit>

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



<http://bcove.me/fazwdk3h>

clients?

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



<http://bcove.me/n6nwnktv>

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



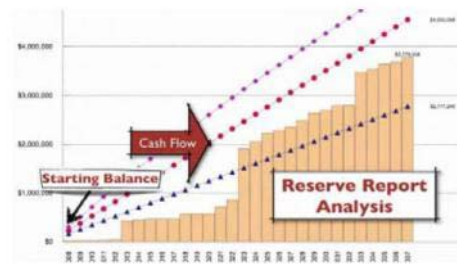
<http://bcove.me/2vfih1tz>

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



<http://bcove.me/wb2fugb1>

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



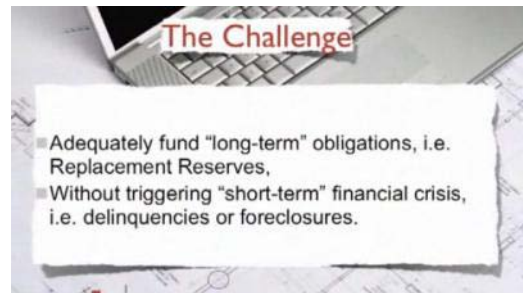
<http://bcove.me/7buer3n8>

How are interest and inflation addressed?  
What should we look at when considering inflation?



<http://bcove.me/s2tmtj9b>

A community needs more help, where do we go?  
What is a Strategic Funding Plan?



<http://bcove.me/iqul31vq>