

LEVEL 2 REPLACEMENT RESERVE REPORT FY 2020 DUFIEF HOMES ASSOCIATION



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Community Management by:

DUFIEF HOMES ASSOCIATION

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REPLACEMENT RESERVE REPORT

DUFIEF HOMES ASSOCIATION

NORTH POTOMAC, MARYLAND
August 24, 2020
Board Approved February 16, 2021



Description. Dufief Homes Association is a Homeowner's Association located in North Potomac, Maryland. Constructed between 1973 and 1974, the community consists of 306 single-family residences. The survey examined the common elements of the property, including:

- Pathways.
- Steps and pedestrian bridges.
- Culvert and swales.
- Stormwater pond.
- Tot Lot.

Level of Service. This study has been performed as a Level 2 Update with Site Visit/On-Site Review as defined by the Community Associations Institute's, National Reserve Study Standards. As such, the component inventory is based on the study that was performed by Miller-Dodson Associates in March, 2015 . This inventory was adjusted to reflect changes provided by the Community Manager and/or the Board of Directors, or adjustments made based on the site visit and visual assessment performed by the Analyst. The analysis, including fund status and funding plan, is developed from the adjusted inventory.

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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.

Purpose. The purpose of this Replacement Reserve Study is to provide Dufief Homes 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 reported 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 August 24, 2020 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 2020 covering the period from January 1, 2020 to December 31, 2020. The Replacement Reserves on deposit as of January 1, 2020 are reported to be \$87,982. The reported current annual funding for reserves is \$17,000.

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.

Acknowledgment. Miller+Dodson Associates would like to acknowledge the assistance and input of Brian Frank, board representative. who provided very helpful insight into the current operations of the property.

Analyst's Credentials. Brian J. Oates graduated from the University of Maryland with a degree in Urban Planning and studied the Principals and Practices of appraisal at the American University. Brian has owned and operated management companies and developed single and multifamily properties in the Washington metropolitan area. As a reserve analyst, Mr. Oates has performed over 600 reserve studies for Miller+Dodson Associates since 2009.

Respectfully Submitted,



Brian J. Oates
Brian J. Oates

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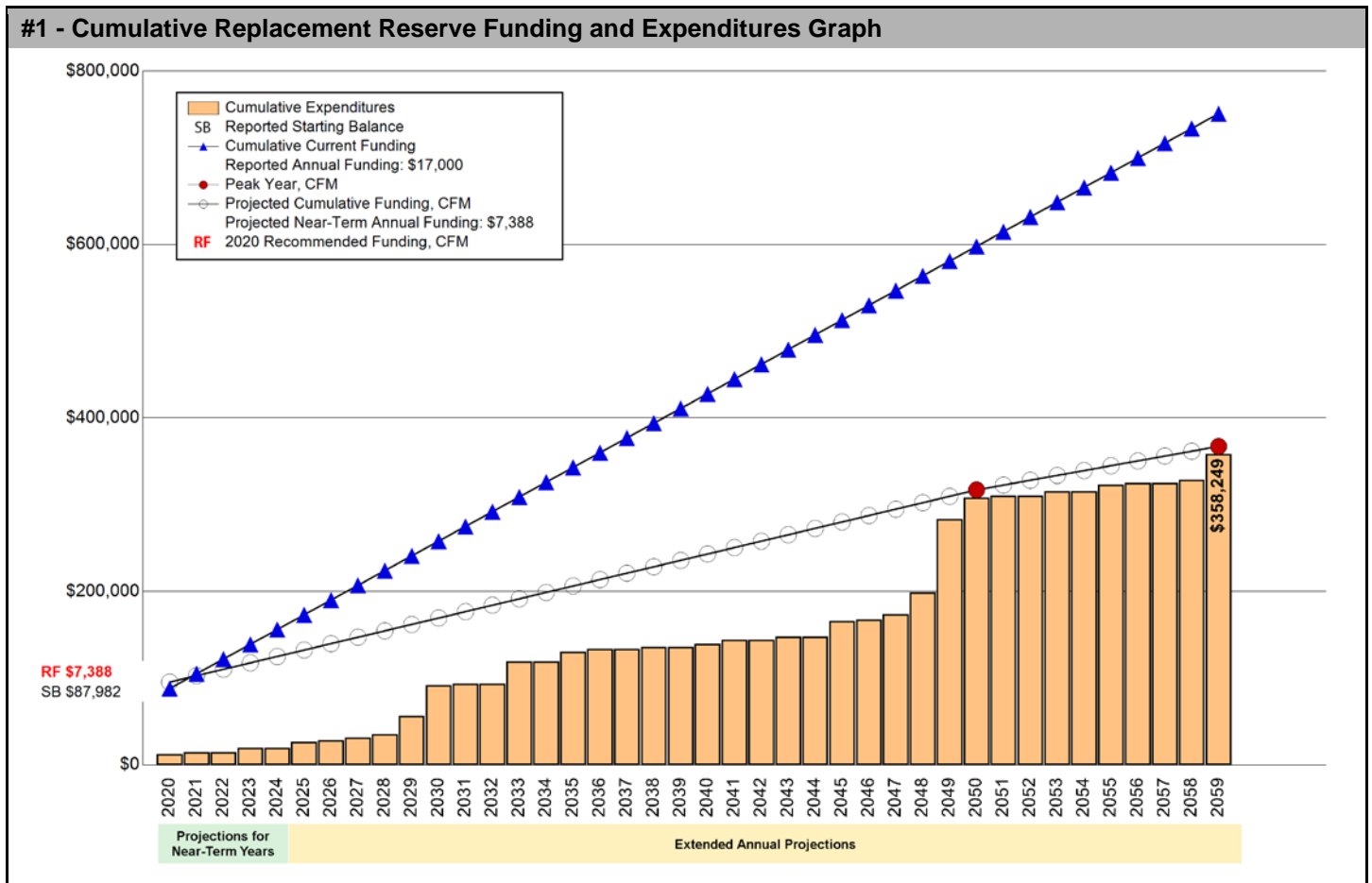
EXECUTIVE SUMMARY

The Dufief Homes Association Replacement Reserve Analysis uses the Cash Flow Method (CFM) to calculate Replacement Reserve funding for the periodic replacement of the 31 Projected Replacements identified in the Replacement Reserve Inventory.

\$7,388 **RECOMMENDED REPLACEMENT RESERVE FUNDING FOR THE STUDY YEAR, 2020**
 \$2.01 Per unit (average), minimum monthly funding of Replacement Reserves

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

Dufief Homes Association reports a Starting Balance of \$87,982 and Annual Funding totaling \$17,000. The reported Current Annual Funding of \$17,000 adequately funds projected replacements for the near-term years. See Page A.3 for a more detailed evaluation.



The Current Funding Objective as calculated by the Component Method (Fully Funded) is \$68,998 making the reserve account 127.5% funded. See the Appendix for more information on this method.

REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION

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

2020 STUDY YEAR

The Association reports that their accounting year begins on January 1, and the Study Year, the first year evaluated by the Replacement Reserve Analysis, begins on January 1, 2020.

40 Years STUDY PERIOD

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

\$87,982 STARTING BALANCE

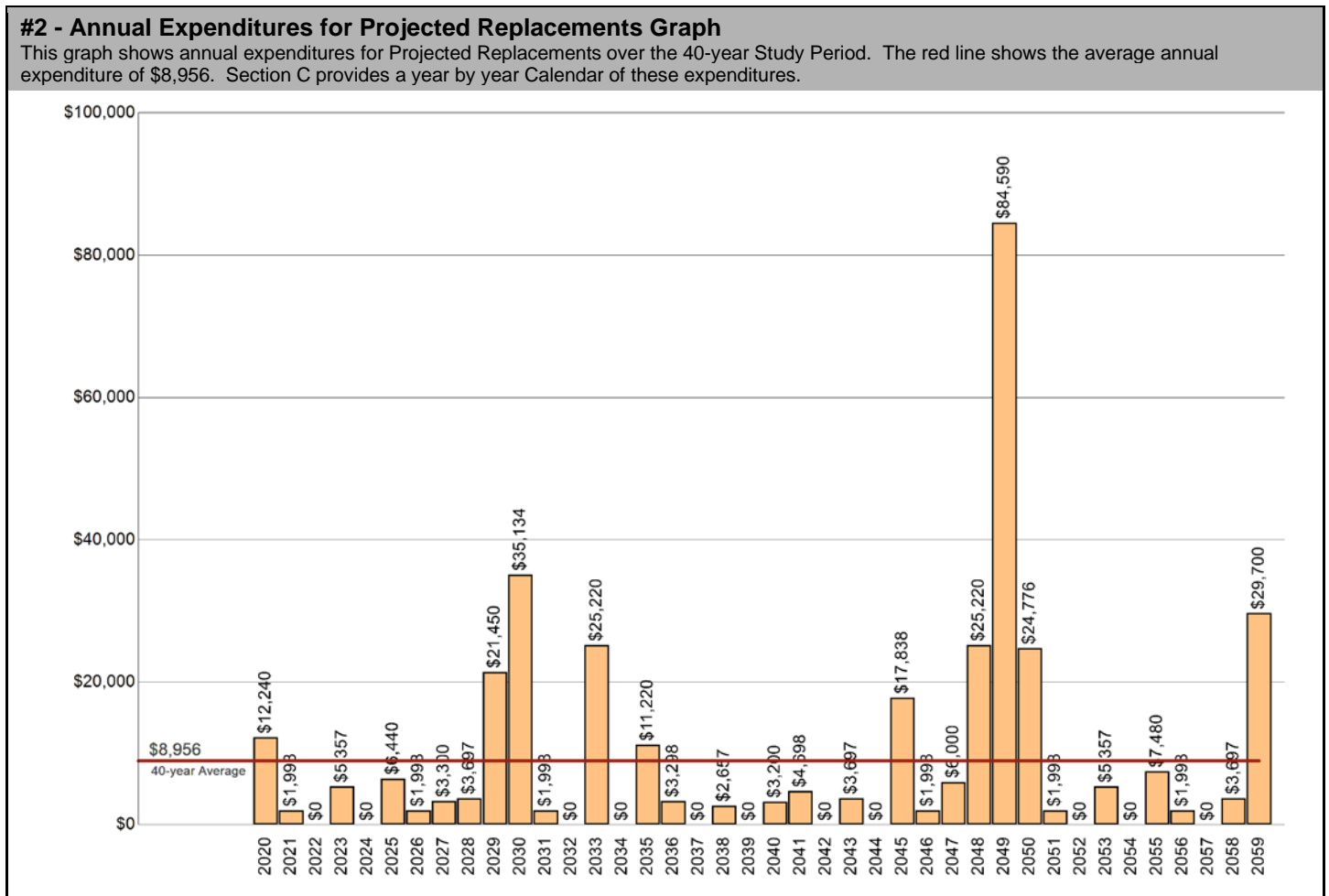
The Association reports Replacement Reserves on Deposit totaling \$87,982 at the start of the Study Year.

Level Two LEVEL OF SERVICE

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

\$358,249 REPLACEMENT RESERVE INVENTORY - PROJECTED REPLACEMENTS

The Dufief Homes Association Replacement Reserve Inventory identifies 31 items that will require periodic replacement, which are to be funded from Replacement Reserves. We estimate the cost of these replacements will be \$358,249 over the 40-year Study Period. The Projected Replacements are divided into 2 major categories starting on Page B.3. Pages B.1-B.2 provide detailed information on the Replacement Reserve Inventory.



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

UPDATING OF THE REPLACEMENT RESERVE STUDY

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

ANNUAL EXPENDITURES AND CURRENT FUNDING

The annual expenditures that comprise the \$358,249 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.

#3 - Table of Annual Expenditures and Current Funding Data - Years 1 through 40										
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Starting Balance	\$87,982									
Projected Replacements	(\$12,240)	(\$1,998)		(\$5,357)		(\$6,440)	(\$1,998)	(\$3,300)	(\$3,697)	(\$21,450)
Annual Deposit	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
End of Year Balance	\$92,742	\$107,745	\$124,745	\$136,388	\$153,388	\$163,948	\$178,950	\$192,650	\$205,953	\$201,503
Cumulative Expenditures	(\$12,240)	(\$14,238)	(\$14,238)	(\$19,594)	(\$19,594)	(\$26,034)	(\$28,032)	(\$31,332)	(\$35,029)	(\$56,479)
Cumulative Receipts	\$104,982	\$121,982	\$138,982	\$155,982	\$172,982	\$189,982	\$206,982	\$223,982	\$240,982	\$257,982
Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Projected Replacements	(\$35,134)	(\$1,998)		(\$25,220)		(\$11,220)	(\$3,298)		(\$2,657)	
Annual Deposit	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
End of Year Balance	\$183,370	\$198,372	\$215,372	\$207,152	\$224,152	\$229,932	\$243,634	\$260,634	\$274,978	\$291,978
Cumulative Expenditures	(\$91,613)	(\$93,610)	(\$93,610)	(\$118,830)	(\$118,830)	(\$130,050)	(\$133,348)	(\$133,348)	(\$136,004)	(\$136,004)
Cumulative Receipts	\$274,982	\$291,982	\$308,982	\$325,982	\$342,982	\$359,982	\$376,982	\$393,982	\$410,982	\$427,982
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Projected Replacements	(\$3,200)	(\$4,698)		(\$3,697)		(\$17,838)	(\$1,998)	(\$6,000)	(\$25,220)	(\$84,590)
Annual Deposit	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
End of Year Balance	\$305,778	\$318,080	\$335,080	\$348,383	\$365,383	\$364,546	\$379,548	\$390,548	\$382,328	\$314,738
Cumulative Expenditures	(\$139,204)	(\$143,902)	(\$143,902)	(\$147,599)	(\$147,599)	(\$165,436)	(\$167,434)	(\$173,434)	(\$198,654)	(\$283,244)
Cumulative Receipts	\$444,982	\$461,982	\$478,982	\$495,982	\$512,982	\$529,982	\$546,982	\$563,982	\$580,982	\$597,982
Year	2050	2051	2052	2053	2054	2055	2056	2057	2058	2059
Projected Replacements	(\$24,776)	(\$1,998)		(\$5,357)		(\$7,480)	(\$1,998)		(\$3,697)	(\$29,700)
Annual Deposit	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000	\$17,000
End of Year Balance	\$306,962	\$321,964	\$338,964	\$350,608	\$367,608	\$377,128	\$392,130	\$409,130	\$422,433	\$409,733
Cumulative Expenditures	(\$308,020)	(\$310,018)	(\$310,018)	(\$315,374)	(\$315,374)	(\$322,854)	(\$324,852)	(\$324,852)	(\$328,549)	(\$358,249)
Cumulative Receipts	\$614,982	\$631,982	\$648,982	\$665,982	\$682,982	\$699,982	\$716,982	\$733,982	\$750,982	\$767,982

EVALUATION OF CURRENT FUNDING

The evaluation of Current Funding (Starting Balance of \$87,982 & annual funding of \$17,000), 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 31 Projected Replacements identified in the Replacement Reserve Inventory and that the Association will continue Annual Funding of \$17,000 throughout the 40-year Study Period.

Annual Funding of \$17,000 is approximately 230 percent of the \$7,388 recommended Annual Funding calculated by the Cash Flow Method for 2020, the Study Year.

The progression and effect of continued Current Annual Funding coupled with this studies Projected Replacements over the Study Period are evaluated in Table 3 above. Maintaining Current Annual Funding may result in inadequate End of Year Balances, noted in red.

See the Executive Summary for the Current Funding Statement.

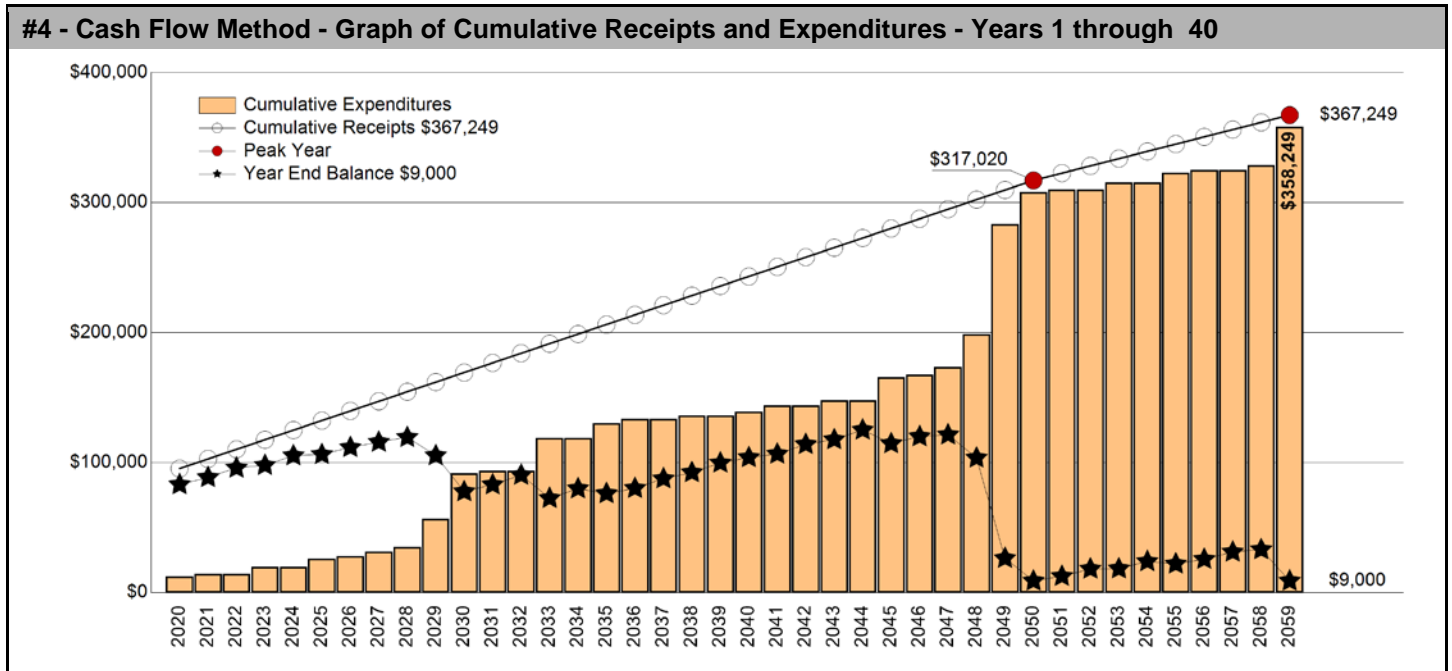
CASH FLOW METHOD FUNDING

\$7,388 RECOMMENDED REPLACEMENT RESERVE FUNDING FOR 2020

\$2.01 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 2050 with Replacement Reserves on Deposit dropping to the Minimum Balance after the completion of \$308,020 of replacements from 2020 to 2050. Recommended funding is anticipated to decline in 2051. Peak Years are identified in Chart 4 and Table 5.
- **Minimum Balance.** The calculations assume a Minimum Balance of \$9,000 will always be held in reserve, which is calculated by rounding the 12-month 40-year average annual expenditure of \$8,956 as shown on Graph #2.
- **Cash Flow Method Study Period.** Cash Flow Method calculates funding for \$358,249 of expenditures over the 40-year Study Period. It does not include funding for any projects beyond 2059 and in 2059, the end of year balance will always be the Minimum Balance.



#5 - Cash Flow Method - Table of Receipts & Expenditures - Years 1 through 40										
Year	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Starting Balance	\$87,982									
Projected Replacements	(\$12,240)	(\$1,998)		(\$5,357)		(\$6,440)	(\$1,998)	(\$3,300)	(\$3,697)	(\$21,450)
Annual Deposit	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388
End of Year Balance	\$83,130	\$88,521	\$95,909	\$97,941	\$105,329	\$106,278	\$111,668	\$115,757	\$119,448	\$105,387
Cumulative Expenditures	(\$12,240)	(\$14,238)	(\$14,238)	(\$19,594)	(\$19,594)	(\$26,034)	(\$28,032)	(\$31,332)	(\$35,029)	(\$56,479)
Cumulative Receipts	\$95,370	\$102,759	\$110,147	\$117,535	\$124,924	\$132,312	\$139,700	\$147,089	\$154,477	\$161,865
Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Projected Replacements	(\$35,134)	(\$1,998)		(\$25,220)		(\$11,220)	(\$3,298)		(\$2,657)	
Annual Deposit	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388
End of Year Balance	\$77,641	\$83,032	\$90,420	\$72,589	\$79,977	\$76,145	\$80,236	\$87,624	\$92,356	\$99,744
Cumulative Expenditures	(\$91,613)	(\$93,610)	(\$93,610)	(\$118,830)	(\$118,830)	(\$130,050)	(\$133,348)	(\$133,348)	(\$136,004)	(\$136,004)
Cumulative Receipts	\$169,254	\$176,642	\$184,030	\$191,419	\$198,807	\$206,195	\$213,584	\$220,972	\$228,360	\$235,749
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Projected Replacements	(\$3,200)	(\$4,698)		(\$3,697)		(\$17,838)	(\$1,998)	(\$6,000)	(\$25,220)	(\$84,590)
Annual Deposit	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388	\$7,388
End of Year Balance	\$103,932	\$106,623	\$114,012	\$117,703	\$125,091	\$114,642	\$120,033	\$121,421	\$103,590	\$26,388
Cumulative Expenditures	(\$139,204)	(\$143,902)	(\$143,902)	(\$147,599)	(\$147,599)	(\$165,436)	(\$167,434)	(\$173,434)	(\$198,654)	(\$283,244)
Cumulative Receipts	\$243,137	\$250,525	\$257,913	\$265,302	\$272,690	\$280,078	\$287,467	\$294,855	\$302,243	\$309,632
Year	1st Peak - 2050	2051	2052	2053	2054	2055	2056	2057	2058	2nd Peak - 2059
Projected Replacements	(\$24,776)	(\$1,998)		(\$5,357)		(\$7,480)	(\$1,998)		(\$3,697)	(\$29,700)
Annual Deposit	\$7,388	\$5,581	\$5,581	\$5,581	\$5,581	\$5,581	\$5,581	\$5,581	\$5,581	\$5,581
End of Year Balance	\$9,000	\$12,583	\$18,164	\$18,389	\$23,970	\$22,070	\$25,654	\$31,235	\$33,119	\$9,000
Cumulative Expenditures	(\$308,020)	(\$310,018)	(\$310,018)	(\$315,374)	(\$315,374)	(\$322,854)	(\$324,852)	(\$324,852)	(\$328,549)	(\$358,249)
Cumulative Receipts	\$317,020	\$322,601	\$328,182	\$333,763	\$339,344	\$344,925	\$350,506	\$356,087	\$361,668	\$367,249

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.

\$7,388 2020 - CASH FLOW METHOD RECOMMENDED FUNDING

The 2020 Study Year calculations have been made using current replacement costs (see Page B.2), modified by the Analyst for any project specific conditions.

\$7,558 2021 - INFLATION ADJUSTED FUNDING

A new analysis calculates the 2021 funding based on three assumptions:

- Replacement Reserves on Deposit totaling \$83,130 on January 1, 2021.
- All 2020 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than \$12,240.
- Construction Cost Inflation of 2.30 percent in 2020.

The \$7,558 inflation adjusted funding in 2021 is a 2.30 percent increase over the non-inflation adjusted funding of \$7,388.

\$7,732 2022 - INFLATION ADJUSTED FUNDING

A new analysis calculates the 2022 funding based on three assumptions:

- Replacement Reserves on Deposit totaling \$88,832 on January 1, 2022.
- All 2021 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than \$1,998.
- Construction Cost Inflation of 2.30 percent in 2021.

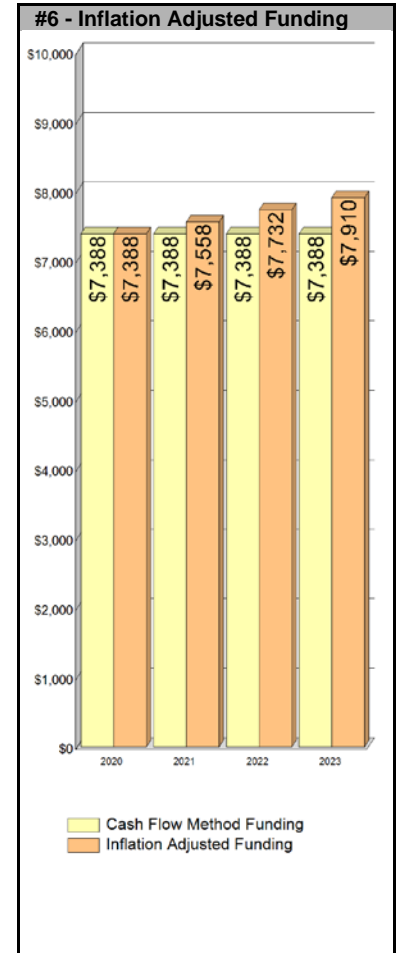
The \$7,732 inflation adjusted funding in 2022 is a 4.65 percent increase over the non-inflation adjusted funding of \$7,388.

\$7,910 2023 - INFLATION ADJUSTED FUNDING

A new analysis calculates the 2023 funding based on three assumptions:

- Replacement Reserves on Deposit totaling \$96,774 on January 1, 2023.
- No Expenditures from Replacement Reserves in 2022.
- Construction Cost Inflation of 2.30 percent in 2022.

The \$7,910 inflation adjusted funding in 2023 is a 7.05 percent increase over the non-inflation adjusted funding of \$7,388.



Year Five and Beyond

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

Inflation Adjustment

Prior to approving a budget based upon the 2021, 2022 and 2023 inflation-adjusted funding calculations above, the 2.30 percent base rate of inflation used in our calculations should be compared to rates published by the Bureau of Labor Statistics. If there is a significant discrepancy (over 1 percentage point), contact Miller+Dodson Associates prior to using the Inflation Adjusted Funding.

Interest on Reserves

The recommended funding calculations do not account for interest earned on Replacement Reserves. In 2020, based on a 1.00 percent interest rate, we estimate the Association may earn \$856 on an average balance of \$85,556, \$860 on an average balance of \$85,981 in 2021, and \$928 on \$92,803 in 2022. The Association may elect to attribute 100 percent of the earned interest to Reserves, resulting in a reduction in the 2020 funding from \$7,388 to \$6,533 (a 11.57 percent reduction), \$7,558 to \$6,698 in 2021 (a 11.37 percent reduction), and \$7,732 to \$6,804 in 2022 (a 12.00 percent reduction).

REPLACEMENT RESERVE STUDY - SUPPLEMENTAL COMMENTS

- The Cash Flow Method calculates the minimum annual funding necessary to prevent Replacement Reserves from dropping below the Minimum Balance, as defined on Page A4. 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 31 Projected Replacements specifically listed in the Replacement Reserve Inventory. The inclusion/exclusion of items from the Replacement Reserve Inventory is discussed on Page B.1.

REPLACEMENT RESERVE INVENTORY GENERAL INFORMATION

Dufief Homes Association - Replacement Reserve Inventory identifies 31 Projected Replacements.

- **PROJECTED REPLACEMENTS.** 31 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 \$200,001. Cumulative Replacements totaling \$358,249 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.** None of the items included in the Replacement Reserve Inventory are 'Excluded Items'. Multiple categories of items are typically excluded from funding by Replacement Reserves, including but not limited to:

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

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

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

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

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

- **CATEGORIES.** The 31 items included in the Dufief Homes Association Replacement Reserve Inventory are divided into 2 major categories. Each category is printed on a separate page, beginning on page B.3.
- **LEVEL OF SERVICE.** This Replacement Reserve Inventory has been developed in compliance with the standards established for a Level 2 Update, as defined by the National Reserve Study Standards, established in 1998 by Community Associations Institute, which states:

This study has been performed as a Level 2 Update with Site Visit/On-Site Review as defined by the Community Associations Institute's, National Reserve Study Standards. As such, the component inventory is based on the study that was performed by Miller-Dodson Associates in March 2015. This inventory was adjusted to reflect changes provided by the Community Manager and/or the Board of Directors, or adjustments made based on the site visit and visual assessment performed by the Analyst. The analysis, including fund status and funding plan, is developed from the adjusted inventory.

REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (CONT'D)

- **INVENTORY DATA.** Each of the 31 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-linear feet, SY-square yard, LS-lump sum, EA-each, and PR-pair. Non-standard abbreviations are noted in the Comments section at the bottom of the page.
 - Number of Units. The methods used to develop the quantities are discussed in "Level of Service" above.
 - Unit Replacement Cost. We use four sources to develop the unit cost data shown in the Inventory; actual replacement cost data provided by the client, information provided by local contractors and suppliers, industry standard estimating manuals, and a cost database we have developed based upon our detailed interviews with contractors and service providers who are specialists in their respective lines of work.
 - Normal Economic Life (Years). The number of years that a new and properly installed item should be expected to remain in service.
 - Remaining Economic Life (Years). The estimated number of years before an item will need to be replaced. In "normal" conditions, this could be calculated by subtracting the age of the item from the Normal Economic Life of the item, but only rarely do physical assets age "normally". Some items may have longer or shorter lives depending on many factors such as environment, initial quality of the item, maintenance, etc.
 - Total Replacement Cost. This is calculated by multiplying the Unit Replacement Cost by the Number of Units.
- **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 ITEMS					NEL- Normal Economic Life (yrs)		
PROJECTED REPLACEMENTS					REL- Remaining Economic Life (yrs)		
ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NEL	REL	REPLACEMENT COST (\$)
1	Asphalt path, overlay	sf	2,350	\$4.85	15	10	\$11,398
2	Asphalt path, seal coat	sf	2,350	\$0.85	5	1	\$1,998
3	Pathway crushed stone replenishment	sf	3,000	\$0.90	6	3	\$2,700
4	Paver, open cell, reset/replace	sf	575	\$4.50	20	10	\$2,588
5	Swales, rip rap installation, Coles Chance Rd.	sy	400	\$25.00	100	none	\$10,000
6	Corrugated metal swale pipe Coles Chance Rd.	lf	20	\$65.00	25	16	\$1,300
7	Wood steps, PTL 6" x 6", Coles Chance Rd.	ft	260	\$18.00	20	10	\$4,680
8	Step railing, wood (2-rails & post) Coles Chance	ft	130	\$20.90	20	10	\$2,717
9	Wood pedestrian bridge, PTL structure	sf	56	\$34.20	20	10	\$1,915
10	Wood bridge decking, PTL	sf	56	\$12.65	20	10	\$708
11	Wood bridge railing, wood (2-rails & post)	ft	16	\$20.90	20	10	\$334
12	Wood pedestrian bridge, PTL structure	sf	90	\$34.20	20	10	\$3,078
13	Wood bridge decking, PTL	sf	90	\$12.65	20	10	\$1,139
14	Wood bridge railing, wood (2-rails & post)	ft	36	\$20.90	20	10	\$752
15	Wood steps, PTL timber 6" x 6", pathway	ft	72	\$18.00	20	10	\$1,296
16	Retaining wall, PTL	sf	20	\$39.75	20	10	\$795
17	PTL 6' x 6" path border timber	ft	120	\$14.45	20	10	\$1,734
Replacement Costs - Page Subtotal							\$49,131

COMMENTS
<ul style="list-style-type: none"> Item #12: Wood pedestrian bridge, PTL structure - Located on pond/ark path. Item #16: Retaining wall, PTL - Located on pond/park path.

SITE ITEMS - (cont.)					NEL- Normal Economic Life (yrs)		REPLACEMENT COST (\$)
PROJECTED REPLACEMENTS					REL- Remaining Economic Life (yrs)		
ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NEL	REL	REPLACEMENT COST (\$)
18	Storm water pond dredging, (33%)	cy	250	\$75.00	20	9	\$18,750
19	Pond riser & slip line pipe, repair/replacement	ls	1	\$65,840.00	40	29	\$65,840
20	Storm water pond gate valve & stem extension	ls	1	\$27,000.00	40	39	\$27,000
21	Concrete culvert repair, allowance	ls	1	\$1,000.00	5	5	\$1,000
22	Stone wall, (repoint/repair allowance)	ls	1	\$1,000.00	5	5	\$1,000
23	Entrance monument, carved wood sign, (2)	sf	30	\$110.00	20	7	\$3,300
24	Entrance monument, painted wood at park	sf	8	\$130.00	20	15	\$1,040
Replacement Costs - Page Subtotal							\$117,930

COMMENTS
<ul style="list-style-type: none"> Item #19: Pond riser & slip line pipe, repair/replacement - Cost establish by applying CPI to previous contract price. Item #23: Entrance monument, carved wood sign, (2) - Located at Dufief Drive and Darnestown Road.

RECREATION ITEMS
PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NEL	REL	REPLACEMENT COST (\$)
25	Tot lot, ADA MP structure, 2 platforms & 2 slides	ea	1	\$17,000.00	15	13	\$17,000
26	Tot lot, border PLT	ft	385	\$14.45	15	13	\$5,563
27	Tot lot surfacing, engineered wood fiber (3")	sf	324	\$8.20	5	3	\$2,657
28	Picnic table (PTL wood table & bench, metal	ea	2	\$520.00	15	8	\$1,040
29	Picnic table (PTL wood table & bench, metal	ea	2	\$520.00	15	none	\$1,040
30	Trash can & receptacle (32 gal. wood slat)	ea	12	\$370.00	10	5	\$4,440
31	Bench along pathways	ea	3	\$400.00	20	none	\$1,200
Replacement Costs - Page Subtotal							\$32,940

COMMENTS

Empty comment box for additional information.

VALUATION EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	REPLACEMENT COST (\$)	UNIT REPLACEMENT COST (\$)	NEL	REL	REPLACEMENT COST (\$)
	Miscellaneous signage							EXCLUDED

VALUATION EXCLUSIONS

Comments

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

LONG-LIFE EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	REPLACEMENT COST (\$)	UNIT REL	REL	REPLACEMENT COST (\$)
	Miscellaneous culverts						EXCLUDED

LONG-LIFE EXCLUSIONS

Comments

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

UNIT IMPROVEMENTS EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NEL	REL	REPLACEMENT COST (\$)
	Domestic water pipes serving one unit						EXCLUDED
	Sanitary sewers serving one unit						EXCLUDED
	Electrical wiring serving one unit						EXCLUDED
	Cable TV service serving one unit						EXCLUDED
	Telephone service serving one unit						EXCLUDED
	Gas service serving one unit						EXCLUDED
	Driveway on an individual lot						EXCLUDED
	Apron on an individual lot						EXCLUDED
	Lead walk on an individual lot						EXCLUDED
	Stairs on an individual lot						EXCLUDED
	Retaining wall on an individual lot						EXCLUDED
	Fence on an individual lot						EXCLUDED
	Unit exterior						EXCLUDED
	Unit windows						EXCLUDED
	Unit doors						EXCLUDED
	Unit skylights						EXCLUDED
	Unit deck, patio, and/or balcony						EXCLUDED
	Unit interior						EXCLUDED
	Unit HVAC system						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	REPLACEMENT COST (\$)	UNIT REL	REL	REPLACEMENT COST (\$)
	Primary electric feeds						EXCLUDED
	Electric transformers						EXCLUDED
	Cable TV systems and structures						EXCLUDED
	Telephone cables and structures						EXCLUDED
	Site lighting						EXCLUDED
	Gas mains and meters						EXCLUDED
	Water mains and meters						EXCLUDED
	Sanitary sewers						EXCLUDED
	Stormwater management system						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	REPLACEMENT COST (\$)	UNIT REL	REPLACEMENT COST (\$)
	Partial replacements					EXCLUDED
	Capital improvements					EXCLUDED

MAINTENANCE AND REPAIR EXCLUSIONS

Comments

- Maintenance activities, one-time-only repairs, and capital improvements. These activities are NOT appropriately funded from Replacement Reserves. The inclusion of such component in the Replacement Reserve Inventory could jeopardize the special tax status of ALL Replacement Reserves, exposing the Association to significant tax liabilities. We recommend that the Board of Directors discuss these exclusions and Revenue Ruling 75-370 with a Certified Public Accountant.
- Examples of items excluded from funding by Replacement Reserves are listed above. The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

GOVERNMENT EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NEL	REL	REPLACEMENT COST (\$)
	Government, roadways & parking						EXCLUDED
	Government, lighting						EXCLUDED
	Government, mailboxes						EXCLUDED

GOVERNMENT EXCLUSIONS

Comments

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

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PROJECTED ANNUAL REPLACEMENTS GENERAL INFORMATION

CALENDAR OF ANNUAL REPLACEMENTS. The 31 Projected Replacements in the Dufief Homes Association Replacement Reserve Inventory whose replacement is scheduled to be funded from Replacement Reserves are broken down on a year-by-year basis, beginning on Page C.2.

REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

- **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 Study Period, begins on Page C2. Actual experience in replacing the items may differ significantly from the cost estimates and time frames shown because of conditions beyond our control. These differences may be caused by maintenance practices, inflation, variations in pricing and market conditions, future technological developments, regulatory actions, acts of God, and luck. Some items may function normally during our visual evaluation and then fail without notice.
- **REVIEW OF THE REPLACEMENT RESERVE STUDY.** For this study to be effective, it should be reviewed by the Board of Directors, those responsible for the management of the items included in the Replacement Reserve Inventory, and the accounting professionals employed by the Association.

PROJECTED REPLACEMENTS - YEARS 1 TO 6

Item	2020 - YEAR 1	\$
5	Swales, rip rap installation, Coles Chance Rd.	\$10,000
29	Picnic table (PTL wood table & bench, metal supports)	\$1,040
31	Bench along pathways	\$1,200
Total Scheduled Replacements		\$12,240

Item	2021 - YEAR 2	\$
2	Asphalt path, seal coat	\$1,998
Total Scheduled Replacements		\$1,998

Item	2022 - YEAR 3	\$
No Scheduled Replacements		

Item	2023 - YEAR 4	\$
3	Pathway crushed stone replenishment	\$2,700
27	Tot lot surfacing, engineered wood fiber (3")	\$2,657
Total Scheduled Replacements		\$5,357

Item	2024 - YEAR 5	\$
No Scheduled Replacements		

Item	2025 - YEAR 6	\$
21	Concrete culvert repair, allowance	\$1,000
22	Stone wall, (repoint/repair allowance)	\$1,000
30	Trash can & receptacle (32 gal. wood slat)	\$4,440
Total Scheduled Replacements		\$6,440

PROJECTED REPLACEMENTS - YEARS 7 TO 12

Item	2026 - YEAR 7	\$	Item	2027 - YEAR 8	\$
2	Asphalt path, seal coat	\$1,998	23	Entrance monument, carved wood sign, (2)	\$3,300
Total Scheduled Replacements		\$1,998	Total Scheduled Replacements		\$3,300

Item	2028 - YEAR 9	\$	Item	2029 - YEAR 10	\$
27	Tot lot surfacing, engineered wood fiber (3")	\$2,657	3	Pathway crushed stone replenishment	\$2,700
28	Picnic table (PTL wood table & bench, metal)	\$1,040	18	Storm water pond dredging, (33%)	\$18,750
Total Scheduled Replacements		\$3,697	Total Scheduled Replacements		\$21,450

Item	2030 - YEAR 11	\$	Item	2031 - YEAR 12	\$
1	Asphalt path, overlay	\$11,398	2	Asphalt path, seal coat	\$1,998
4	Paver, open cell, reset/replace	\$2,588			
7	Wood steps, PTL 6" x 6", Coles Chance Rd.	\$4,680			
8	Step railing, wood (2-rails & post) Coles Chance	\$2,717			
9	Wood pedestrian bridge, PTL structure	\$1,915			
10	Wood bridge decking, PTL	\$708			
11	Wood bridge railing, wood (2-rails & post)	\$334			
12	Wood pedestrian bridge, PTL structure	\$3,078			
13	Wood bridge decking, PTL	\$1,139			
14	Wood bridge railing, wood (2-rails & post)	\$752			
15	Wood steps, PTL timber 6" x 6", pathway	\$1,296			
16	Retaining wall, PTL	\$795			
17	PTL 6' x 6" path border timber	\$1,734			
21	Concrete culvert repair, allowance	\$1,000			
22	Stone wall, (repoint/repair allowance)	\$1,000			
Total Scheduled Replacements		\$35,134	Total Scheduled Replacements		\$1,998

PROJECTED REPLACEMENTS - YEARS 13 TO 18

Item	2032 - YEAR 13	\$	Item	2033 - YEAR 14	\$
No Scheduled Replacements			25	Tot lot, ADA MP structure, 2 platforms & 2 slides (small)	\$17,000
			26	Tot lot, border PLT	\$5,563
			27	Tot lot surfacing, engineered wood fiber (3")	\$2,657
No Scheduled Replacements			Total Scheduled Replacements		\$25,220

Item	2034 - YEAR 15	\$	Item	2035 - YEAR 16	\$
No Scheduled Replacements			3	Pathway crushed stone replenishment	\$2,700
			21	Concrete culvert repair, allowance	\$1,000
			22	Stone wall, (repoint/repair allowance)	\$1,000
			24	Entrance monument, painted wood at park	\$1,040
			29	Picnic table (PTL wood table & bench, metal supports)	\$1,040
			30	Trash can & receptacle (32 gal. wood slat)	\$4,440
No Scheduled Replacements			Total Scheduled Replacements		\$11,220

Item	2036 - YEAR 17	\$	Item	2037 - YEAR 18	\$
2	Asphalt path, seal coat	\$1,998			
6	Corrugated metal swale pipe Coles Chance Rd.	\$1,300			
Total Scheduled Replacements		\$3,298	No Scheduled Replacements		

PROJECTED REPLACEMENTS - YEARS 19 TO 24

Item	2038 - YEAR 19	\$	Item	2039 - YEAR 20	\$
27	Tot lot surfacing, engineered wood fiber (3")	\$2,657			
Total Scheduled Replacements		\$2,657	No Scheduled Replacements		

Item	2040 - YEAR 21	\$	Item	2041 - YEAR 22	\$	
21	Concrete culvert repair, allowance	\$1,000	2	Asphalt path, seal coat	\$1,998	
22	Stone wall, (repoint/repair allowance)	\$1,000	3	Pathway crushed stone replenishment	\$2,700	
31	Bench along pathways	\$1,200				
Total Scheduled Replacements		\$3,200	Total Scheduled Replacements			\$4,698

Item	2042 - YEAR 23	\$	Item	2043 - YEAR 24	\$	
No Scheduled Replacements			27	Tot lot surfacing, engineered wood fiber (3")	\$2,657	
			28	Picnic table (PTL wood table & bench, metal)	\$1,040	
			Total Scheduled Replacements			\$3,697

PROJECTED REPLACEMENTS - YEARS 25 TO 30

Item	2044 - YEAR 25	\$	Item	2045 - YEAR 26	\$
			1	Asphalt path, overlay	\$11,398
			21	Concrete culvert repair, allowance	\$1,000
			22	Stone wall, (repoint/repair allowance)	\$1,000
			30	Trash can & receptacle (32 gal. wood slat)	\$4,440
No Scheduled Replacements			Total Scheduled Replacements		
			\$17,838		

Item	2046 - YEAR 27	\$	Item	2047 - YEAR 28	\$
2	Asphalt path, seal coat	\$1,998	3	Pathway crushed stone replenishment	\$2,700
			23	Entrance monument, carved wood sign, (2)	\$3,300
Total Scheduled Replacements			Total Scheduled Replacements		
\$1,998			\$6,000		

Item	2048 - YEAR 29	\$	Item	2049 - YEAR 30	\$
25	Tot lot, ADA MP structure, 2 platforms & 2 slides (small)	\$17,000	18	Storm water pond dredging, (33%)	\$18,750
26	Tot lot, border PLT	\$5,563	19	Pond riser & slip line pipe, repair/replacement	\$65,840
27	Tot lot surfacing, engineered wood fiber (3")	\$2,657			
Total Scheduled Replacements			Total Scheduled Replacements		
\$25,220			\$84,590		

PROJECTED REPLACEMENTS - YEARS 31 TO 36

Item	2050 - YEAR 31	\$	Item	2051 - YEAR 32	\$
4	Paver, open cell, reset/replace	\$2,588	2	Asphalt path, seal coat	\$1,998
7	Wood steps, PTL 6" x 6", Coles Chance Rd.	\$4,680			
8	Step railing, wood (2-rails & post) Coles Chance	\$2,717			
9	Wood pedestrian bridge, PTL structure	\$1,915			
10	Wood bridge decking, PTL	\$708			
11	Wood bridge railing, wood (2-rails & post)	\$334			
12	Wood pedestrian bridge, PTL structure	\$3,078			
13	Wood bridge decking, PTL	\$1,139			
14	Wood bridge railing, wood (2-rails & post)	\$752			
15	Wood steps, PTL timber 6" x 6", pathway	\$1,296			
16	Retaining wall, PTL	\$795			
17	PTL 6' x 6" path border timber	\$1,734			
21	Concrete culvert repair, allowance	\$1,000			
22	Stone wall, (repoint/repair allowance)	\$1,000			
29	Picnic table (PTL wood table & bench, metal supports)	\$1,040			
Total Scheduled Replacements		\$24,776	Total Scheduled Replacements		\$1,998

Item	2052 - YEAR 33	\$	Item	2053 - YEAR 34	\$
No Scheduled Replacements			3	Pathway crushed stone replenishment	\$2,700
			27	Tot lot surfacing, engineered wood fiber (3")	\$2,657
No Scheduled Replacements			Total Scheduled Replacements		\$5,357

Item	2054 - YEAR 35	\$	Item	2055 - YEAR 36	\$
No Scheduled Replacements			21	Concrete culvert repair, allowance	\$1,000
			22	Stone wall, (repoint/repair allowance)	\$1,000
			24	Entrance monument, painted wood at park	\$1,040
			30	Trash can & receptacle (32 gal. wood slat)	\$4,440
No Scheduled Replacements			Total Scheduled Replacements		\$7,480

PROJECTED REPLACEMENTS - YEARS 37 TO 42

Item	2056 - YEAR 37	\$	Item	2057 - YEAR 38	\$
2	Asphalt path, seal coat	\$1,998			
Total Scheduled Replacements		\$1,998	No Scheduled Replacements		

Item	2058 - YEAR 39	\$	Item	2059 - YEAR 40	\$	
27	Tot lot surfacing, engineered wood fiber (3")	\$2,657	3	Pathway crushed stone replenishment	\$2,700	
28	Picnic table (PTL wood table & bench, metal)	\$1,040	20	Storm water pond gate valve & stem extension	\$27,000	
Total Scheduled Replacements		\$3,697	Total Scheduled Replacements			\$29,700

Item	2060 (beyond study period)	\$	Item	2061 (beyond study period)	\$	
1	Asphalt path, overlay	\$11,398	2	Asphalt path, seal coat	\$1,998	
21	Concrete culvert repair, allowance	\$1,000	6	Corrugated metal swale pipe Coles Chance Rd.	\$1,300	
22	Stone wall, (repoint/repair allowance)	\$1,000				
31	Bench along pathways	\$1,200				
Total Scheduled Replacements		\$14,598	Total Scheduled Replacements			\$3,298

CONDITION ASSESSMENT

General Comments. Miller+Dodson Associates conducted a Reserve Study at Dufief Homes Association in August 2020. Dufief Homes Association is in generally good condition for a homeowner's association constructed between 1973 and 1974. 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 ITEMS

Asphalt Paths. The Association is responsible for the paths surrounding the pond located on Coles Chance Road. The asphalt paths are in good condition with minor cracking.

Asphalt paths are typically constructed on native soil. As a result, defects can begin to develop in a few years, leading to costly repairs, early replacement, and tripping hazards. Additionally, paths typically do not have proper edge confinement and support resulting in longitudinal cracking along the edges of the path. Compacted soil or gravel along the edges of the path can mitigate this problem. Lastly, tree root damage is a common issue with asphalt paths, and some communities have had success with a process called root trimming.

As a rule of thumb, asphalt should be overlaid when approximately 5% of the surface area is cracked or otherwise deteriorated.

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.

Crushed Stone Pathways. The Association maintains an inventory of approximately 3,000 square feet of crushed stone pathways that partially surround the stormwater pond. The crushed stone was partially replenished since the last study. In addition, the stone was applied as a topcoat to the stairways leading from Coles Chance Road, that stone has been depleted, making for uneven step areas. The gravel should be monitored and replaced periodically.

Concrete Pavers. The Association maintains an inventory of approximately 575 square feet of open-cell concrete pavers. These provide vehicular access paths from Cole Chase Road leading to asphalt pathway, tot lot, and stormwater pond. The Association is extended the path since the 2015 study. An allowance for replacement and or repair of pavers has been programmed in the analysis.





Swale. There are swales on both sides of Coles Chance Road at the eastern perimeter of the pond/park area. These swale capture and channel stormwater to inlets. (Those inlets were partially covered with debris at the time of site inspection.) The swale area is eroding. It is important to minimize the velocity of stormwater to mitigate its erosive effect. A one-time allowance to install rip rap in the swale channels has been programmed in the analysis.



Corrugated Metal Drainpipe. The Association maintains a single 12" diameter drainpipe at Coles Chance Road. The pipe was replaced in 2011. This enables stormwater to flow to the in-swale stormwater inlet. The swale lacks vegetation and or stone rip-rap and silt is being carried into the drain.

Pressure Treated Wood Steps. The community has a set of open timber steps with railing at the entrance to the pond/park area at Coles Chance Road. These are 6" x 6" pressure treated lumber step, with timber border. There is pressure treated railing. The steps and railing are in good overall condition. The stone inside the step has been washed out and should be replenished to make the stairs safe for use.

The defects noted include the following:

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

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



Pathway Structures. The Association maintains two wood pedestrian bridges along the pond/park area pathways. The overall condition of these bridges is good, limited areas of damage. It was noted one of the bridges' rail caps was deteriorated and displaying rot. This rail cap should be replaced.

In addition to the bridges, there are limited pressure-treated lumber steps and trail borders found along the pond/park pathway. These components are in fair condition. Funding for future replacement of these components has been programmed in the analysis.





Retaining Wall. The Association maintains a single wood retaining wall adjacent to one of the pedestrian bridges along the pond/park pathway. The retaining wall is in good overall condition.

Retaining walls, in general, are designed to provide slope stabilization and soil retention by means of a structural system. Typically, walls that are three feet high or more require some level of design.

Movement and displacement of any retaining wall is a sign of general settlement or failure. This typically is in the form of leaning and bowing and can involve the entire wall or localized sections of the wall. Typically, these types of movements are gradual and may require the replacement of the wall. Movement of retaining walls located near other buildings or structures may negatively affect the stability of the adjacent structure. These conditions can become extremely costly if not properly identified, monitored, and addressed.

Wood retaining walls will experience rot and decay over time and partial replacement of defective wooden members is often possible in the early stages of decay. Eventually, however, these walls will require replacement. Wood retaining walls can have a useful life of 25 to 35 years.

When and if it becomes necessary to replace these walls, we recommend the Association considers one of the segmental block retaining wall systems. These systems are very low maintenance. If over time the wall experiences movement, sections of the walls can be re-stacked at a very small portion of the cost of a new wall. Segmental block retaining walls can have a service life of 80 years or more.

Retaining wall replacement can be costly, and early planning on the part of the Association can help to reduce the impact of this work on the community's budget in the future. We, therefore, recommend having a Professional Engineer inspect the walls and develop preliminary replacement alternatives and recommendations based on the site conditions, replacement costs, and recommended replacement wall types. This information can then be incorporated into future updates to the Reserve Study.

Stormwater Pond. The community is served by a single stormwater pond located west of Coles Chance Road. The pond has recently and periodically assessed by County and a private firm, according to the Association. It is assumed the pond is performing properly. The riser and outflow pipe have been inspected. A new 8" gate valve and stem extension road were recently replaced.

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

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

As a rule of thumb, dredging should be performed when approximately one-third of the volume of the pond has been filled with silt. In the absence of accurate information about the original depth of the pond and the local siltation rate, we have assumed that it will be necessary to remove one cubic yard of material over a third of the pond area periodically as noted in the inventory. We have assumed that the material being removed is free of heavy metals and hydrocarbons and that it will be accepted as fill at a local landfill. A more accurate prediction of cost and cycles will require a hydrologic analysis and testing, which is beyond the scope of our study.

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

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

Based on our understanding, we recommend the following:

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

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

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

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

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

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

Minimum Inspection Checklist for Ponds:

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

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

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





Concrete Culverts. The Association maintains three concrete culverts that channel street and surface stormwater into the pond. The culverts should be periodically inspected and cleared of debris. The terminal point of the culverts should be stabilized with stone rip-rap to mitigate erosion of pond banks. An allowance for periodic repairs of culverts has been programmed in the analysis.





Entry Signage. The Association maintains two carved signs at Dufief Rd and Darnestown Road, and a painted wood sign at the pond/park area at Coles Chance Road. The latter has been replaced in the last five years. The signs are in good overall condition.



Stone Retaining Walls. The Association maintains a series of stacked stone retaining walls at the entrance of the community at Dufief Road and Darnestown Road. Minor repairs have been performed on the walls in the last five years. There were no significant issues observed at the time of site inspection. An allowance for periodic repairs has been programmed in the analysis.



RECREATION ITEMS

Tot Lots. The community maintains a tot lot located in the pond/park area of the community. The tot lot includes a play structure, wood borders, and a wood chip surface. The facilities were recently replaced and in good condition. The wood chip surface appears to be adequate.

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 play 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.mdareserves.com/resources/links/recreation.

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

Picnic Table & Benches. In addition to the playground, the parking area contains four picnic tables and several benches. Three of the tables and the benches are in poor condition.





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

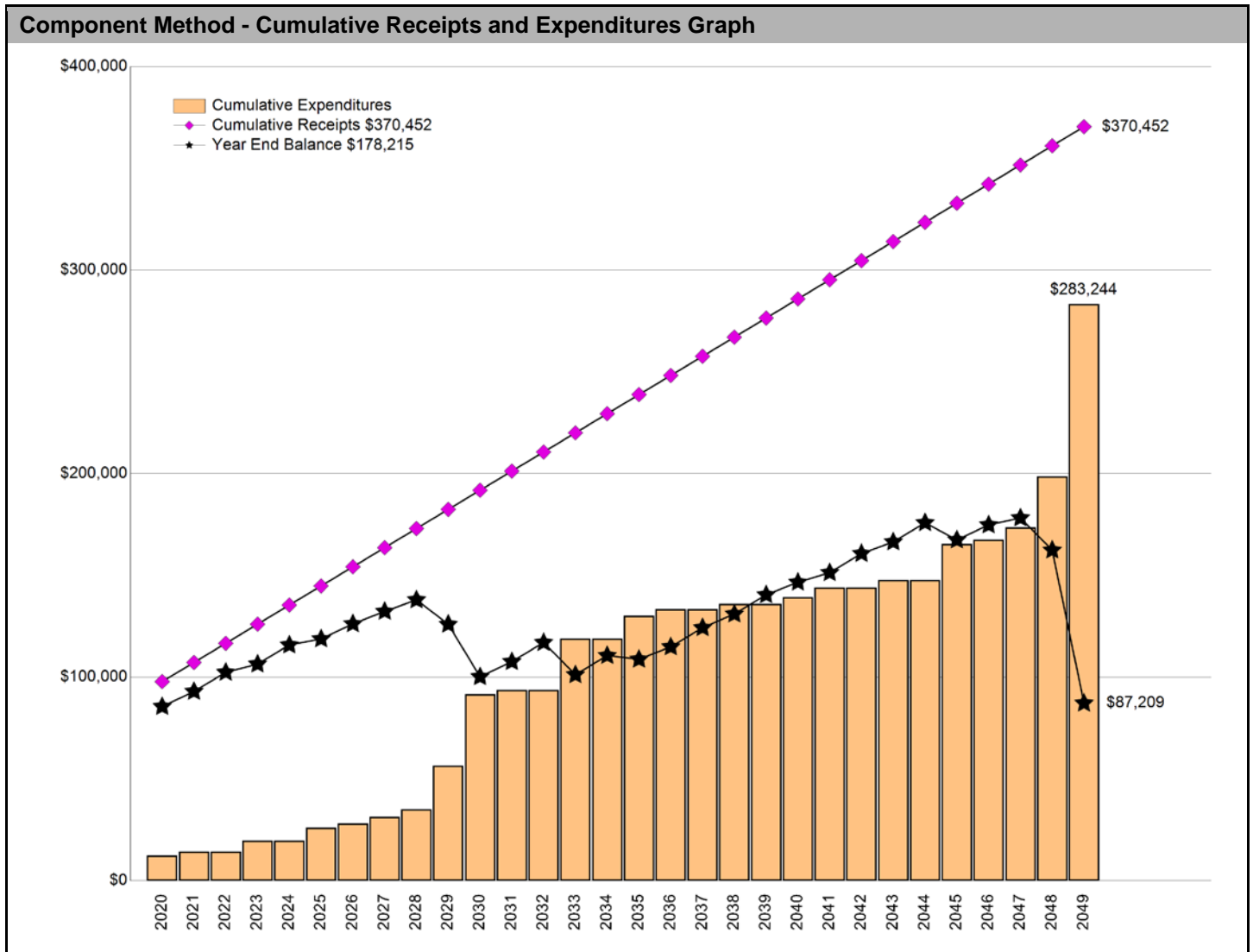
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COMPONENT METHOD

\$9,815 | **COMPONENT METHOD RECOMMENDED ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2020.**

\$2.67 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 31 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 CM.2.



COMPONENT METHOD (CONT.)

- **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 31 Projected Replacements. The total, \$68,998, is the Current Funding Objective.

For an example, consider a 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 ($\$1,000 \div 10$ 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 (\$87,982) by the Current Funding Objective (\$68,998). At Dufief Homes Association the Funding Percentage is 127.5%
- **Allocation of the Beginning Balance.** The Beginning Balance is divided among the 31 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 127.5 percent funded, there is \$1020 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 \$9,815, the Component Method Recommended Annual Funding of Replacement Reserves in the Study Year (2020).

In our fence example, the \$1020 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 \$-10. Next year, the deposit remains \$-10, 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	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
Beginning Balance	\$87,982									
Recommended Annual Funding	\$9,815	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402
Expenditures	\$12,240	\$1,998		\$5,357		\$6,440	\$1,998	\$3,300	\$3,697	\$21,450
Year End Balance	\$85,557	\$92,962	\$102,364	\$106,409	\$115,811	\$118,772	\$126,177	\$132,279	\$137,984	\$125,936
Cumulative Expenditures	\$12,240	\$14,238	\$14,238	\$19,594	\$19,594	\$26,034	\$28,032	\$31,332	\$35,029	\$56,479
Cumulative Receipts	\$97,797	\$107,199	\$116,601	\$126,003	\$135,405	\$144,807	\$154,209	\$163,611	\$173,012	\$182,414
Year	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
Recommended Annual Funding	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402
Expenditures	\$35,134	\$1,998		\$25,220		\$11,220	\$3,298		\$2,657	
Year End Balance	\$100,204	\$107,608	\$117,010	\$101,192	\$110,594	\$108,776	\$114,880	\$124,282	\$131,027	\$140,429
Cumulative Expenditures	\$91,613	\$93,610	\$93,610	\$118,830	\$118,830	\$130,050	\$133,348	\$133,348	\$136,004	\$136,004
Cumulative Receipts	\$191,816	\$201,218	\$210,620	\$220,022	\$229,424	\$238,826	\$248,228	\$257,630	\$267,031	\$276,433
Year	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049
Recommended Annual Funding	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402	\$9,402
Expenditures	\$3,200	\$4,698		\$3,697		\$17,838	\$1,998	\$6,000	\$25,220	\$84,590
Year End Balance	\$146,631	\$151,335	\$160,737	\$166,442	\$175,844	\$167,409	\$174,813	\$178,215	\$162,397	\$87,209
Cumulative Expenditures	\$139,204	\$143,902	\$143,902	\$147,599	\$147,599	\$165,436	\$167,434	\$173,434	\$198,654	\$283,244
Cumulative Receipts	\$285,835	\$295,237	\$304,639	\$314,041	\$323,443	\$332,845	\$342,247	\$351,648	\$361,050	\$370,452

2020 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 31 Projected Replacements included in the Dufief Homes Association Replacement Reserve Inventory has been assigned to one of the 2 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 \$87,982 as of the first day of the Study Year, January 1, 2020.
- Total reserve funding (including the Beginning Balance) of \$97,797 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 2020 being accomplished in 2020 at a cost of \$12,240.

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.

2020 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM1							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2020 BEGINNING BALANCE	2020 RESERVE FUNDING	2020 PROJECTED REPLACEMENTS	2020 END OF YEAR BALANCE
SITE ITEMS - Page 1	5 to 100 years	0 to 39 years	\$167,061	\$68,542	\$6,753	\$10,000	\$65,295
RECREATION ITEMS - Page 1	5 to 20 years	0 to 13 years	\$32,940	\$8,246	\$3,062	\$2,240	\$9,068

2021 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 31 Projected Replacements included in the Dufief Homes Association Replacement Reserve Inventory has been assigned to one of the 2 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 \$85,557 on January 1, 2021.
- Total reserve funding (including the Beginning Balance) of \$107,199 from 2020 to 2021.
- 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 2021 being accomplished in 2021 at a cost of \$1,998.

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.

2021 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM2							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2021 BEGINNING BALANCE	2021 RESERVE FUNDING	2021 PROJECTED REPLACEMENTS	2021 END OF YEAR BALANCE
SITE ITEMS - Page 1	5 to 100 years	0 to 99 years	\$167,061	\$65,295	\$6,724	\$1,998	\$70,021
RECREATION ITEMS - Page 1	5 to 20 years	2 to 19 years	\$32,940	\$9,068	\$2,678		\$11,747

2022 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 31 Projected Replacements included in the Dufief Homes Association Replacement Reserve Inventory has been assigned to one of the 2 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 \$92,962 on January 1, 2022.
- Total reserve funding (including the Beginning Balance) of \$116,601 from 2021 to 2022.
- 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 2022 being accomplished in 2022 at a cost of \$0.

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.

2022 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM3							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2022 BEGINNING BALANCE	2022 RESERVE FUNDING	2022 PROJECTED REPLACEMENTS	2022 END OF YEAR BALANCE
SITE ITEMS - Page 1	5 to 100 years	1 to 98 years	\$167,061	\$70,021	\$6,724		\$76,745
RECREATION ITEMS - Page 1	5 to 20 years	1 to 18 years	\$32,940	\$11,747	\$2,678		\$14,425

TABLE CM4 below details the allocation of the \$87,982 Beginning Balance, as reported by the Association and the \$28,619 of Replacement Reserve Funding calculated by the Component Method from 2020 to 2022, to the 31 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 CF.1. The accuracy of the allocations is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$87,982 on January 1, 2020.
- Replacement Reserves on Deposit totaling \$85,557 on January 1, 2021.
- Replacement Reserves on Deposit totaling \$92,962 on January 1, 2022.
- Total Replacement Reserve funding (including the Beginning Balance) of \$116,601 from 2020 to 2022.
- 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 2020 to 2022 being accomplished as scheduled in the Replacement Reserve Inventory at a cost of \$.

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	2020 Reserve Funding	2020 Projected Replacements	2020 End of Year Balance	2021 Reserve Funding	2021 Projected Replacements	2021 End of Year Balance	2022 Reserve Funding	2022 Projected Replacements	2022 End of Year Balance
SITE ITEMS -												
1	Asphalt path, overlay	11,398	3,875	760		4,635	760		5,395	760		6,155
2	Asphalt path, seal coat	1,998	1,528	400		1,928	400	(1,998)	330	400		729
3	Pathway crushed stone	2,700	1,148	450		1,598	450		2,048	450		2,498
4	Paver, open cell, reset/replace	2,588	1,485	129		1,614	129		1,743	129		1,873
5	Swales, rip rap installation, Coles	10,000	12,750	129	(10,000)	2,879	100		2,979	100		3,079
6	Corrugated metal swale pipe Coles	1,300	530	52		582	52		634	52		686
7	Wood steps, PTL 6" x 6", Coles	4,680	2,685	234		2,919	234		3,153	234		3,387
8	Step railing, wood (2-rails & post)	2,717	1,559	136		1,695	136		1,831	136		1,966
9	Wood pedestrian bridge, PTL	1,915	1,099	96		1,195	96		1,290	96		1,386
10	Wood bridge decking, PTL	708	406	35		442	35		477	35		513
11	Wood bridge railing, wood (2-rails & post)	334	192	17		209	17		225	17		242
12	Wood pedestrian bridge, PTL	3,078	1,766	154		1,920	154		2,074	154		2,228
13	Wood bridge decking, PTL	1,139	653	57		710	57		767	57		824
14	Wood bridge railing, wood (2-rails & post)	752	432	38		469	38		507	38		545
15	Wood steps, PTL timber 6" x 6",	1,296	744	65		808	65		873	65		938
16	Retaining wall, PTL	795	456	40		496	40		536	40		575
17	PTL 6' x 6" path border timber	1,734	995	87		1,082	87		1,168	87		1,255
18	Storm water pond dredging, (33%)	18,750	11,953	938		12,891	938		13,828	938		14,766
19	Pond riser & slip line pipe,	65,840	20,987	1,646		22,633	1,646		24,279	1,646		25,925
20	Storm water pond gate valve &	27,000		675		675	675		1,350	675		2,025
21	Concrete culvert repair, allowance	1,000	255	200		455	200		655	200		855
22	Stone wall, (repoint/repair	1,000	255	200		455	200		655	200		855
23	Entrance monument, carved wood	3,300	2,525	165		2,690	165		2,855	165		3,020
24	Entrance monument, painted wood	1,040	265	52		317	52		369	52		421
RECREATION ITEMS -												
25	Tot lot, ADA MP structure, 2	17,000	1,445	1,133		2,578	1,133		3,712	1,133		4,845
26	Tot lot, border PLT	5,563	473	371		844	371		1,215	371		1,586
27	Tot lot surfacing, engineered wood	2,657	677	531		1,209	531		1,740	531		2,272
28	Picnic table (PTL wood table &	1,040	530	69		600	69		669	69		738
29	Picnic table (PTL wood table &	1,040	1,326	69	(1,040)	355	69		425	69		494
30	Trash can & receptacle (32 gal.	4,440	2,264	444		2,708	444		3,152	444		3,596
31	Bench along pathways	1,200	1,530	444	(1,200)	774	60		834	60		894

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. The Community Associations Institute (CAI), a national trade association, estimates in 2018 that there were more than 347,000 communities with over 73.5 million residents.

The shift of responsibility for billions of dollars of community facilities and infrastructure from the local government and private sector to Community Associations has generated new and unanticipated 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, homeowners 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 Normal Economic Life (NEL). Used in the Normal Replacement Schedules. This represents the industry average number of years that a new item should be expected to last until it has to be replaced. This figure is sometimes modified by climate, region, or original construction conditions.

Estimated Remaining Economic Life (REL). Used in the Normal Replacement Schedules. Number of years until the item is expected to need replacement. Normally, this number would be considered to be the difference between the Estimated Economic Life and the age of the item. However, this number must be modified to reflect maintenance practice, climate, original construction and quality, or other conditions. For the purpose of this report, this number is determined by the Reserve Analyst based on the present condition of the item relative to the actual age.

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 Balance. Shown on the Summary Sheet A4, this amount is used in the Cash Flow Method only. Normally derived using the average annual expenditure over the study period, this is the minimum amount held in reserves for every year in the study period.

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

What is a Reserve Study?
Who are we?



<https://youtu.be/m4BcOE6q3Aw>

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



<https://youtu.be/40SodajTW1g>

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



<https://youtu.be/pYSMZ013VjQ>

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



<https://youtu.be/Qx8WHB9Cgnc>

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



<https://youtu.be/ZfBoAEhtf3E>

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



<https://youtu.be/1J2h7FIU3qw>

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



<https://youtu.be/aARD1B1Oa3o>

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



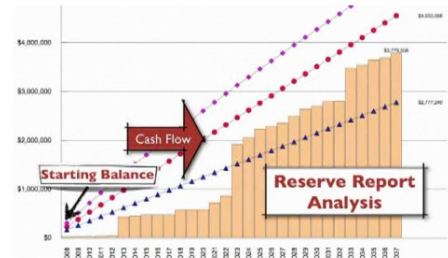
<https://youtu.be/diZfM1lyJYU>

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



<https://youtu.be/qCeVJhFf9ag>

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



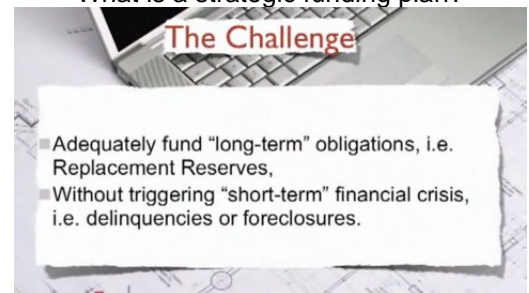
<https://youtu.be/SePdwVDvHWI>

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



<https://youtu.be/W8CDLwRlv68>

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



<https://youtu.be/hIxV9X1tlcA>