

REPLACEMENT RESERVE REPORT FY 2015

WESTHAVEN HOA

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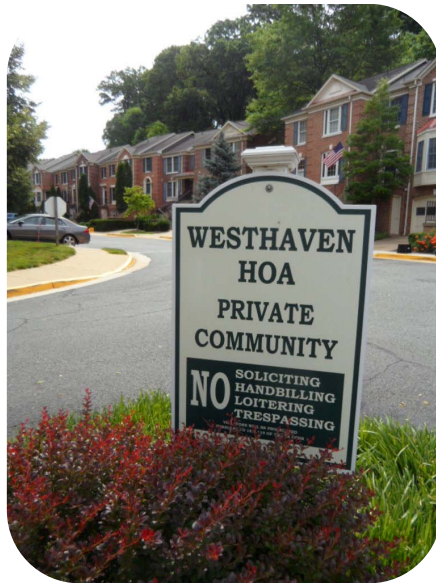
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REPLACEMENT RESERVE REPORT

WESTHAVEN HOA

SPRINGFIELD, VIRGINIA

Revised September 15, 2014



Description. Westhaven HOA is a townhome community located in Springfield, Virginia. Constructed from 1988 to 1991, the community consists of multiple townhome buildings containing 192 units. The survey examined the common elements of the property, including:

- Asphalt drive and parking.
- Concrete sidewalks, steps, curb, and gutter.
- Retaining walls, fencing, railings, trellises, and entrance features.
- Brick sidewalks and stamped concrete roadway insets.
- Tot lot, asphalt trail, and site lighting.

Level of Service. This study has been performed as a Level 1 Full Service Reserve Study as defined under the National Reserve Study Standards that have been adopted by the Community Associations Institute. As such, a complete inventory of components was established for the commonly owned elements of this facility based on information provided by the Community Manager or by quantities that were developed from field measurement or takeoffs from to-scale drawings as performed by the Analyst. The condition of each inventory component was established by the Analyst, based on a visual inspection or review of provided historical data with a major repair or replacement cost for each also set. The included fund status and funding plan have been derived from analysis of this 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 Westhaven HOA (hereinafter called the Association) with an inventory of the common community facilities and infrastructure components that require periodic replacement. The Study includes a general view of the condition of these items and an effective financial plan to fund projected periodic replacements.

- **Inventory of Items Owned by the Association.** Section B lists the Projected Replacements of the commonly owned items that require periodic replacement using funding from Replacement Reserves. The Replacement Reserve Inventory also provides information about excluded items, which are items whose replacements are not scheduled for funding from Replacement Reserves.
- **Condition of Items Owned by the Association.** Section B includes our estimates of the normal economic life and the remaining economic life for the projected replacements. Section C provides a year-by-year listing of the projected replacements. Section D provides additional detail for items that are unique or deserving of attention because of their condition or the manner in which they have been treated in this study.
- **Financial Plan.** The Association has a fiduciary responsibility to protect the appearance, value, and safety of the property and it is therefore essential the Association have a financial plan that provides funding for the projected replacements. In conformance with American Institute of Certified Public Accountant guidelines; Section A 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. Section A includes graphic and tabular presentations of these methods and current Association funding. An Executive Summary of these calculations is provided on Page A1.

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

- The Request for Proposal submitted and executed by the Association.
- Miller - Dodson performed a visual evaluation on June 19, 2014 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 A6 and A7 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 2015 covering the period from January 1, 2015 to December 31, 2015. The Replacement Reserves on deposit as of May 31, 2014 are reported to be \$235,411. The planned contribution for the fiscal year is \$48,000. This results in a Reserve Fund balance at the start of the fiscal year as follows:

May 31, 2014 balance	\$235,411
7 months contribution	\$28,000
Planned expenditures	\$0
FY 2015 opening balance	\$263,411

The balance and contribution figures have been supplied by the property management agent and confirmation or audit of these figures is beyond the scope of the study. For the purposes of this study, it is assumed that the annual contribution will be deposited at the end of each month.

Acknowledgement. Miller - Dodson Associates would like to acknowledge the assistance and input of the Community Manager, Mr. Sam Morrison and Board Member, Russ Carl who provided very helpful insight into the current operations of the property. Mr. Carl is an original unit owner and provided useful information about the history of maintenance and replacements of replacement reserve items.

Analyst's Credentials. Mrs. Heather N. Naples holds a Bachelors Degree in Civil Engineering and a Masters Degree in Engineering Administration from Virginia Tech. A registered Professional Engineer, Mrs. Naples has experience in all phases of project design, contract administration, and inspection of public and private facilities. As an Engineer, she has completed multiple facilities engineering studies, life cycle cost studies, and analysis for repair versus replacement of facilities and systems. She is currently an Engineer and Reserve Specialist for Miller - Dodson Associates.

Respectfully submitted,



Heather Naples, RS, PE
Reserve Specialist

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EXECUTIVE SUMMARY

The Westhaven HOA Replacement Reserve Inventory identifies 53 Projected Replacements for funding from Replacement Reserves, with an estimated one-time replacement cost of \$1,004,535.

The Replacement Reserve Analysis calculates recommended funding of Replacement Reserves by the two generally accepted methods, the Cash Flow Method and the Component Method. The Analysis also evaluates current funding of Replacement Reserves, as reported by the Association. The calculations and evaluation are summarized below:

\$73,014 CASH FLOW METHOD MINIMUM ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2015.

\$31.69 Per unit (average), minimum monthly funding of Replacement Reserves

The Cash Flow Method (CFM) calculates Minimum Annual Funding of Replacement Reserves that will fund Projected Replacements identified in the Replacement Reserve Inventory from a common pool of Replacement Reserves and prevent Replacement Reserves from dropping below a Minimum Recommended Balance.

CFM - Minimum Annual Funding remains the same between peaks in cumulative expenditures called Peak Years.

The first Peak Year occurs in 2017 and the CFM - Minimum Annual Funding of Replacement Reserves in 2018 declines to \$48,993 (\$21.26 per unit, per month), after the completion of \$432,225 of replacements in 2015 to 2017.

Subsequent Peak Years and declines in Minimum Annual Funding occur in: 2018, 2035.

\$190,201 COMPONENT METHOD RECOMMENDED ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2015.

\$82.55 Per unit (average), recommended monthly funding of Replacement Reserves

The Component Method is a very conservative funding model developed by HUD in the early 1980's.

The Component Method treats each projected replacement in the Replacement Reserve Inventory as a separate account. Deposits are made to each individual account, where funds are held for exclusive use by that item.

Based on this funding model, the Association has a Current Funding Objective of \$662,710.

The Association reports having \$263,411 on deposit, which is 39.7% funded.

\$48,000 CURRENT ANNUAL FUNDING OF REPLACEMENT RESERVES (as reported by the Association).

\$20.83 Per unit (average), reported current monthly funding of Replacement Reserves

The evaluation of Current Funding, as reported by the Association, has calculated that if the Association continues to fund Replacement Reserves at the current level, there will NOT be adequate funds for Projected Replacements in 2 years of the 30-year Study Period, and a maximum shortfall of \$-25,807 occurs in 2018.

Pages A2 and A3 explain the Study Year, Study Period, Adjustments (interest & inflation), Beginning Balance, and Projected Replacements. Pages A4 to A9 explain in more detail the calculations associated with the Cash Flow Method, Component Method, and Current Funding.

REPLACEMENT RESERVE STATUS AND FUNDING PLAN

Current funding of Replacement Reserves is inadequate to fund Projected Replacements.

We recommend the Association adopt a Replacement Reserve Funding Plan based on the Cash Flow Method or the Component Method, to ensure that adequate funding is available throughout the 30-Year Study Period for the \$1,280,089 of Projected Replacements listed in the Westhaven HOA Replacement Reserve Inventory.

The Funding Plan should be professionally updated every three to five years or after completion of each major replacement project. The Board of Directors has a fiduciary responsibility to review the Funding Plan annually and should consider annual increases in Replacement Reserve funding at least equal to the Producer Price Index.

REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION

The Westhaven HOA Replacement Reserve Analysis calculations of recommended funding of Replacement Reserves by the Cash Flow Method and the Component Method, and the evaluation of the Current Funding, are based upon the same General Information; including the Study Year, Study Period, Beginning Balance, and Projected Replacements.

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, 2015.

STUDY PERIOD

The Replacement Reserve Analysis evaluates the funding of Replacement Reserves over a 30-year Study Period that begins on January 1, 2015.

BEGINNING BALANCE

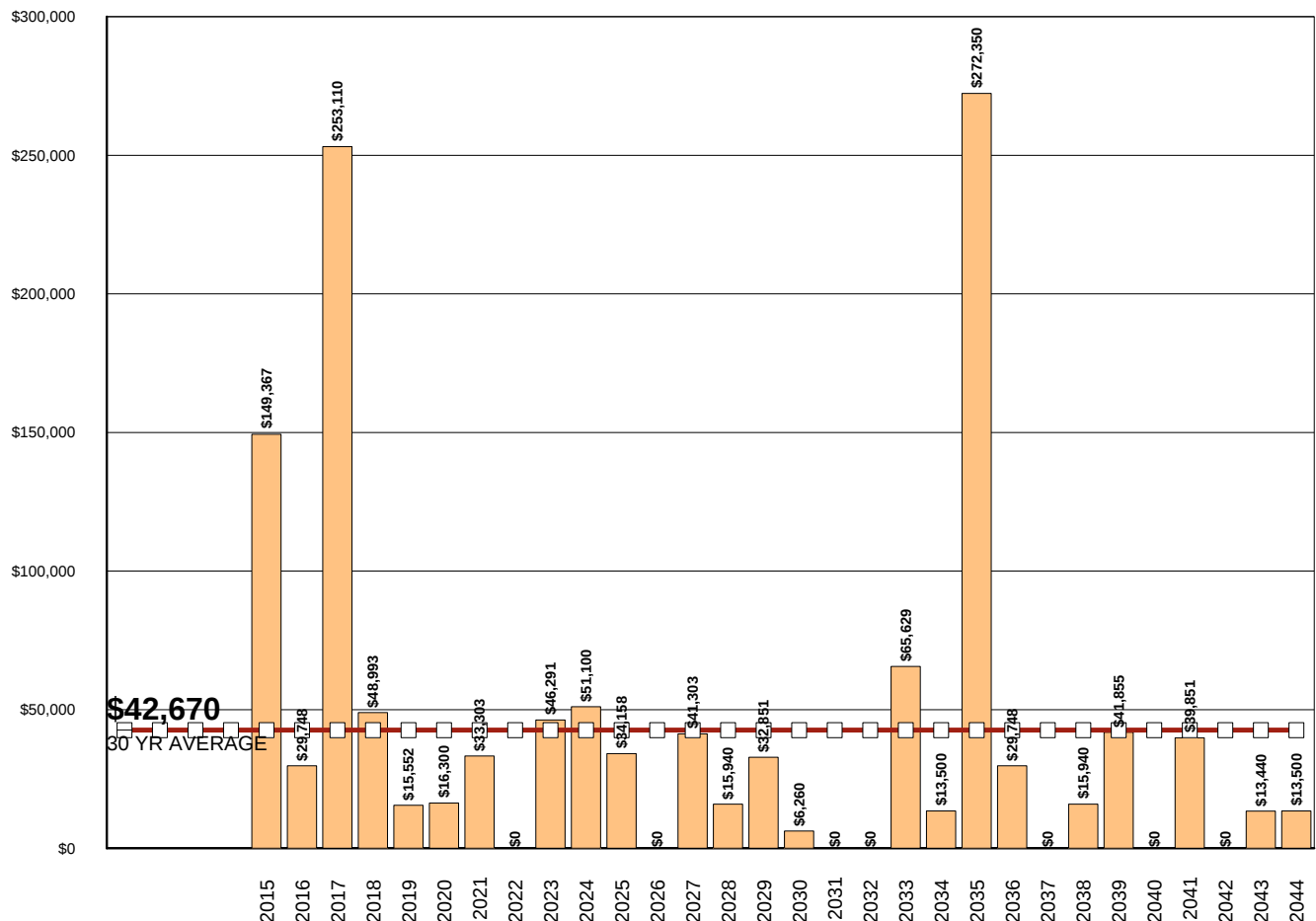
The Association reports Replacement Reserves on Deposit totaling \$263,411 at the start of the Study Year.

ADJUSTMENTS AND INFLATION

The short term consequences of 4.50% inflation and no constant annual increase in Reserve funding on the Cash Flow Method, as calculated by a proprietary model developed by Miller + Dodson Associates, are shown on Pages A6 and A7. Other calculations in this Analysis do not account for inflation or a constant annual increase. The calculations in this Analysis do not account for interest earned on Replacement Reserves.

Graph #1. Annual Expenditures for Projected Replacements

This bar graph summarizes annual expenditures for the \$1,280,089 of Projected Replacements identified in the Replacement Reserve Inventory over the 30-year Study Period. The red line shows the average annual expenditure of \$42,670.



PROJECTED REPLACEMENTS

The Westhaven HOA Replacement Reserve Inventory (Section B) identifies 53 Projected Replacements with a one-time Replacement Cost of \$1,004,535 and replacements totaling \$1,280,089 in the 30-year Study Period. Projected Replacements are the replacement of commonly-owned items that:

- require periodic replacement and
- whose replacement is to be funded from Replacement Reserves.

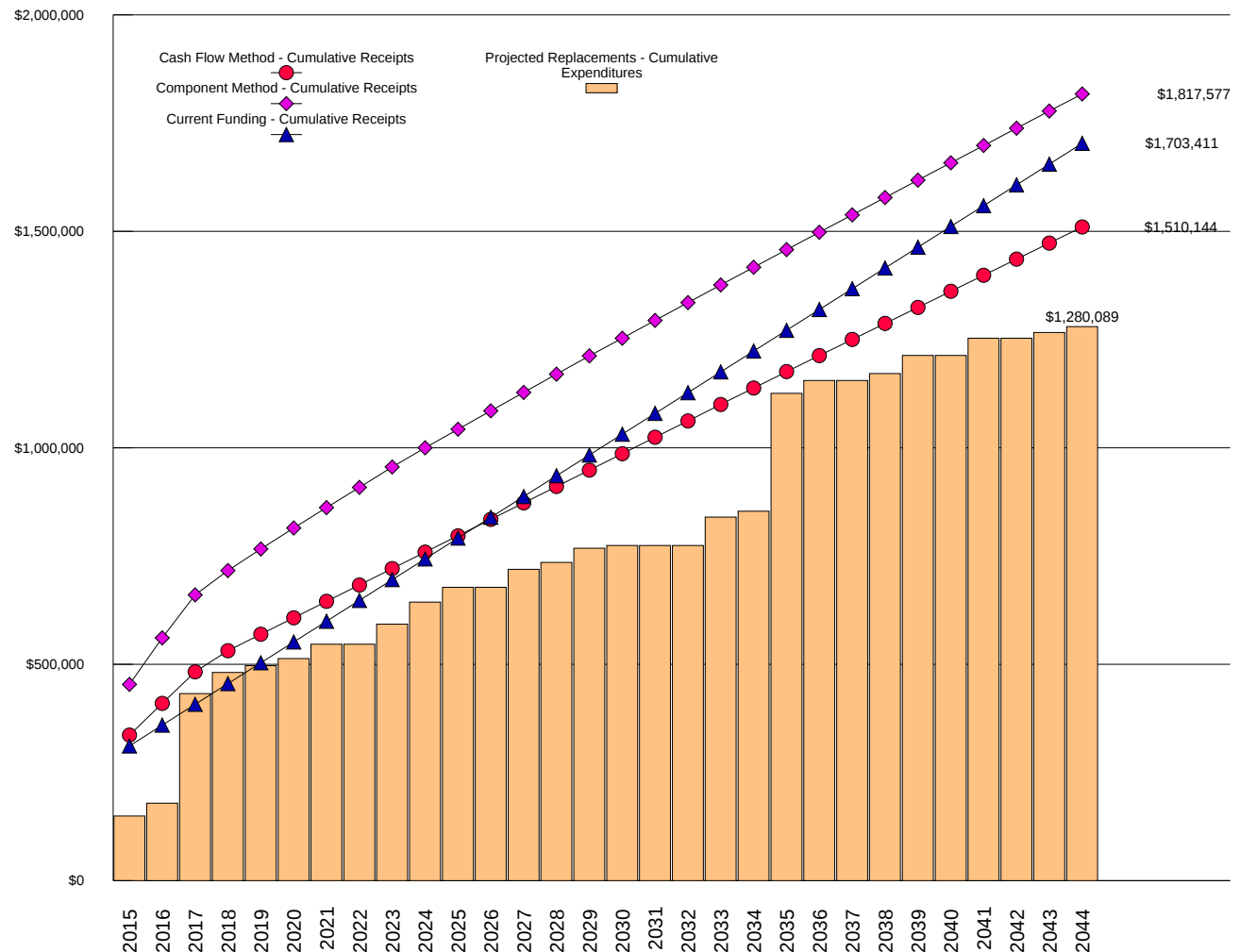
The accuracy of the Westhaven HOA Replacement Reserve Analysis is dependent upon expenditures from Replacement Reserves being made ONLY for the 53 Projected Replacements specifically listed in the Replacement Reserve Inventory.

To further assist in the identification of items not appropriately funded from Replacement Reserves, the Replacement Reserve Inventory identifies 43 Excluded Items. The rationale behind the exclusion of items from funding by Replacement Reserves is discussed in detail on Page B1.

The Section B - Replacement Reserve Inventory, contains Tables that list each Projected Replacement (and any Excluded Items) broken down into 11 major categories (Pages B3 to B12). Tables are also included that list each Projected Replacement by year for each of the 30 years of the Study Period beginning on Page C1.

Graph #2. Comparison of Cumulative Replacement Reserve Funding and Expenditures

The line graph shows Replacement Reserves - Cumulative Receipts over the 30-year Study Period by the Cash Flow Method (red circles), Component Method (purple diamonds), and the Current Funding Plan as reported by the Association (blue triangles). The bar graph shows the Cumulative Expenditures necessary to fund the Project Replacements listed in the Replacement Reserve Inventory (Section B) and summarized in Graph #1.



CASH FLOW METHOD

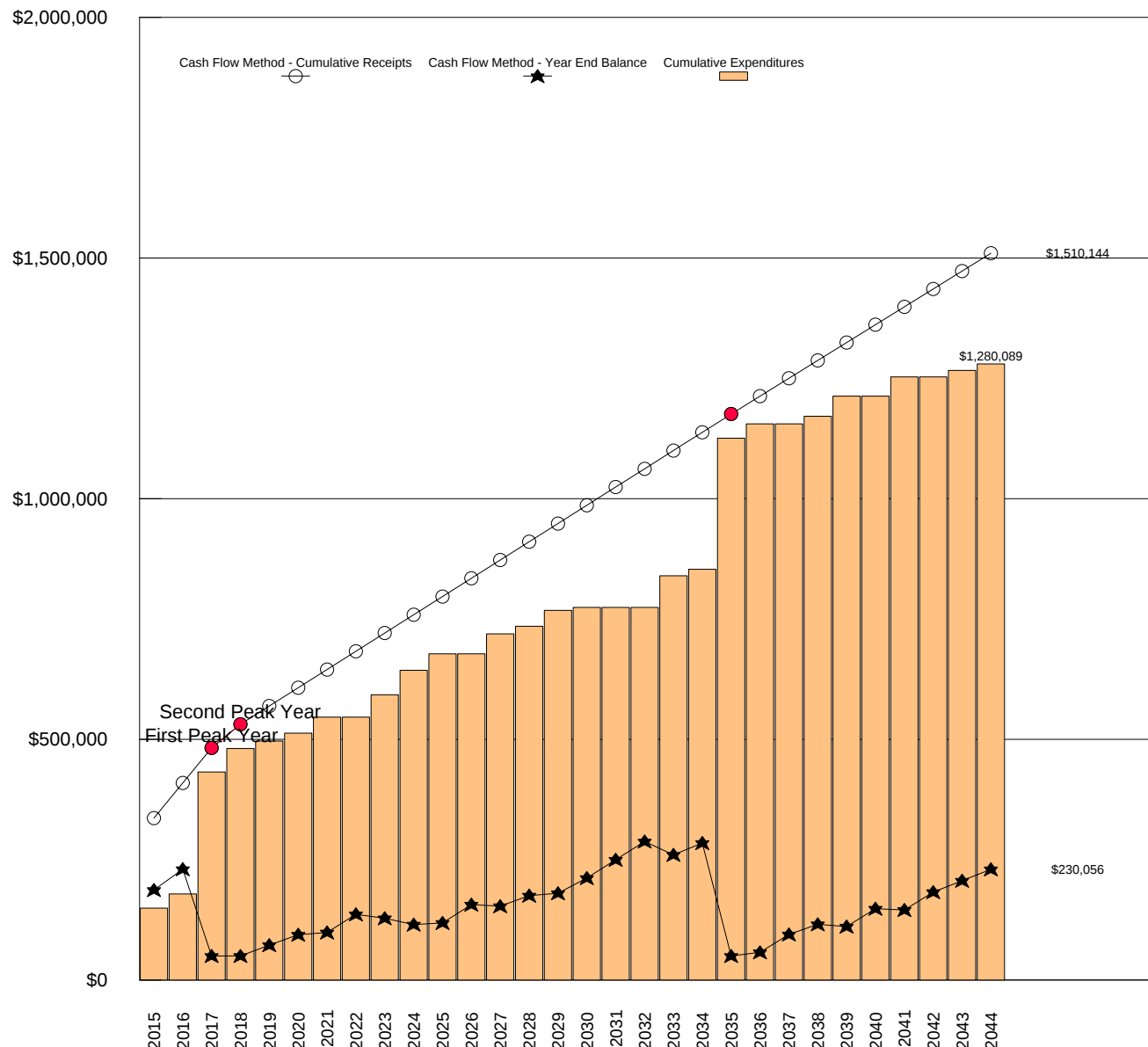
\$73,014 CASH FLOW METHOD MINIMUM ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2015.

\$31.69 Per unit (average), minimum monthly funding of Replacement Reserves

General. The Cash Flow Method (also referred to as the Straight Line Method) is founded on the concept that the Replacement Reserve Account is solvent if cumulative receipts always exceed cumulative expenditures. The Cash Flow Method calculates a MINIMUM annual deposit to Replacement Reserves that will:

- Fund all Projected Replacements listed in the Replacement Reserve Inventory (see Section B)
- Prevent Replacement Reserves from dropping below the Minimum Recommended Balance (see Page A-5)
- Allow a constant annual funding level between peaks in cumulative expenditures

Graph #3. Cash Flow Method - Cumulative Receipts and Expenditures Graph



CASH FLOW METHOD (cont'd)

- Replacement Reserves - Minimum Recommended Balance. The Minimum Recommended Balance is \$50,227, which is 5.0 percent of the one-time replacement cost of the Projected Replacements listed in the Replacement Reserve Inventory. Unless otherwise noted in the Comments on Page A-9, the Minimum Recommended Balance has been established by the Analyst based upon an evaluation of the types of items included in the Replacement Reserve Inventory.
- Peak Years. The Cash Flow Method calculates a constant annual funding of Replacement Reserves between peaks in cumulative expenditures called Peak Years. In Peak Years, Replacement Reserves on Deposit decline to the Replacement Reserves - Minimum Recommended Balance discussed in the paragraph above.

First Peak Year. The First Peak Year occurs in 2017, after the completion of \$432,225 of replacements in 2015 to 2017. The Cash Flow Method - Minimum Annual Funding of Replacement Reserves declines from \$73,014 in 2017 to \$48,993 in 2018.

Subsequent Peak Years. Subsequent Peak Years and declines in the Cash Flow Method - Minimum Annual Funding occur in the following years: 2018, 2035.

- Study Period. The Cash Flow Method calculates the recommended contributions to Replacement Reserves over the 30-year Study Period. These calculations are based upon a 40-year projection of expenditures for Projected Replacements to avoid the Replacement Reserve balance dropping to the Minimum Recommended Balance in the final year of the Study Period.
- Failure to Fund. The Cash Flow Method calculates a MINIMUM annual funding of Replacement Reserves. Failure to fund Replacement Reserves at the minimum level calculated by the Cash Flow Method will result in Replacement Reserves not being available for the Projected Replacements listed in the Replacement Reserve Inventory and/or Replacement Reserves dropping below the Minimum Recommended Balance.
- Adjustment to the Cash Flow Method for interest and inflation. The funding recommendations on Pages A4 and A5 do not account for interest earned on Replacement Reserves, the effects of inflation of the cost of Projected Replacements, or a constant annual increase in Annual Funding of Replacement Reserves.
- Comparison of Cash Flow Funding and Average Annual Expenditure. The Average Annual Expenditure for Projected Replacements listed in the Reserve Inventory over the 30-year Study Period is \$42,670 (see Graph #1). The Cash Flow Method - Minimum Annual Funding of Replacement Reserves in the Study Year is \$73,014. This is 171.1 percent of the Average Annual Expenditure, indicating that the Association is building Replacement Reserves in advance of the first Peak Year in 2017.

Table #1. Cash Flow Method Data - Years 1 through 30

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Beginning balance	\$263,411									
Minimum annual funding	\$73,014	\$73,014	\$73,014	\$48,993	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914
Expenditures	\$149,367	\$29,748	\$253,110	\$48,993	\$15,552	\$16,300	\$33,303		\$46,291	\$51,100
Year end balance	\$187,057	\$230,323	\$50,227	\$50,227	\$72,589	\$94,203	\$98,813	\$136,727	\$128,350	\$115,164
Minimum recommended balance	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227
Cumulative expenditures	\$149,367	\$179,115	\$432,225	\$481,218	\$496,770	\$513,070	\$546,373	\$546,373	\$592,664	\$643,764
Cumulative receipts	\$336,425	\$409,438	\$482,452	\$531,445	\$569,359	\$607,273	\$645,187	\$683,100	\$721,014	\$758,928
			First Peak Year	Second Peak Year						
Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Minimum annual funding	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914	\$37,914
Expenditures	\$34,158		\$41,303	\$15,940	\$32,851	\$6,260			\$65,629	\$13,500
Year end balance	\$118,920	\$156,834	\$153,445	\$175,419	\$180,482	\$212,136	\$250,049	\$287,963	\$260,249	\$284,663
Minimum recommended balance	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227
Cumulative expenditures	\$677,922	\$677,922	\$719,225	\$735,165	\$768,016	\$774,276	\$774,276	\$774,276	\$839,905	\$853,405
Cumulative receipts	\$796,842	\$834,756	\$872,670	\$910,584	\$948,498	\$986,412	\$1,024,326	\$1,062,240	\$1,100,153	\$1,138,067
Year	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Minimum annual funding	\$37,914	\$37,129	\$37,129	\$37,129	\$37,129	\$37,129	\$37,129	\$37,129	\$37,129	\$37,129
Expenditures	\$272,350	\$29,748		\$15,940	\$41,855		\$39,851		\$13,440	\$13,500
Year end balance	\$50,227	\$57,608	\$94,737	\$115,927	\$111,201	\$148,330	\$145,608	\$182,737	\$206,427	\$230,056
Minimum recommended balance	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227	\$50,227
Cumulative expenditures	\$1,125,755	\$1,155,503	\$1,155,503	\$1,171,443	\$1,213,298	\$1,213,298	\$1,253,149	\$1,253,149	\$1,266,589	\$1,280,089
Cumulative receipts	\$1,175,981	\$1,213,111	\$1,250,240	\$1,287,369	\$1,324,498	\$1,361,628	\$1,398,757	\$1,435,886	\$1,473,015	\$1,510,144

CASH FLOW METHOD - INFLATION ADJUSTED FUNDING**The Miller + Dodson Model**

General. The Cash Flow Method funding recommendations shown on pages A4 and A5 have been calculated in today's dollars with no adjustment for inflation. Recent swings in construction costs demonstrate the risk facing an Association that does not consider the effects of inflation when funding Replacement Reserves. Below is an outline of the proprietary model developed by Miller + Dodson to forecast short-term impact of inflation on reserve funding.

- Study Year. The Unit Replacement Costs in the Study Year (listed in Section B Inventory) reflect current construction costs.
- Year Two Inflation Adjusted Funding Calculation. The Year Two Starting Balance is calculated assuming Association compliance with the Study Year funding and replacement data listed on Page A7. Next, the Projected Replacement Costs are adjusted using the Construction Cost Inflation Rate (see detailed information below).
The adjusted data is then evaluated using the Cash Flow Method, calculating the Year Two Inflation Adjusted Minimum Annual Funding of Replacement Reserves.
- Year Three Inflation Adjusted Funding Calculation. The same methodology has been used to develop the Inflation Adjusted Cash Flow Method Minimum Annual Funding of Replacement Reserves in Year Three. Simple compounding has been used to calculate the Year Three Projected Replacement Costs.
- Year Four and Beyond. We have not calculated adjusted funding recommendations beyond the third year of the Study nor do we believe it is appropriate to do so. Inflation adjusted funding recommendations are not intended to be a substitute for the periodic evaluation of the common elements by an experienced Reserve Analyst. We recommend the common elements of the community be evaluated by a Reserve Analyst every 3 to 5 years and at the completion of major replacement projects, as recommended by the Community Associations Institute..

Base Construction Cost Inflation Rate. We have utilized a 4.50 percent base rate of inflation in our calculation of second and third year inflation adjusted funding. This rate of inflation is based upon our review of the Producer Price Indexes for Construction Materials, Structure Types & Subcontractors as published by the Bureau of Labor Statistics and our experience with recent pricing trends.

Assumptions. Cash Flow Method, Inflation Adjusted Funding in Year Two and Year Three is calculated based upon three assumptions discussed below and quantified on Page A7. Prior to approving a budget based upon the calculations, the Association should review the accuracy of the assumptions. If discrepancies are noted, contact Miller + Dodson Associates to arrange for a Replacement Reserve Study Update.

- Replacement Reserve Funding. We have assumed the Association will fund Replacement Reserves as recommended in the Study.
- Scheduled Replacements. We have assumed the Association will make Scheduled Replacements as discussed in the Study (beginning on Page C2) and that the cost of these replacements is in substantial compliance with the estimated replacement costs. We have further assumed that no Replacement Reserves will be used to fund replacements other than those specifically listed in the Replacement Reserve Inventory.
- Construction Cost Inflation Rate evaluation. Prior to approving a budget based upon the Year Two and Year Three Adjusted Replacement Reserve Funding calculations, the 4.50 percent base rate of inflation used in our should be compared to rates published by the Bureau of Labor Statistics. If a significant discrepancy (over 1 percent) is noted, contact Miller Dodson Associates prior to using the funding calculations.

Interest. The recommended funding calculations above do not account for interest earned on Replacement Reserves. In 2015, based on a 1.00 percent interest rate, we estimate the Association may earn \$2,250 on an average balance of \$225,234, \$2,116 on an average balance of \$211,768 in 2016, and \$1,455 on \$145,664 in 2017. The Association may elect to use these funds to reduce annual funding.

CASH FLOW METHOD THREE-YEAR FUNDING RECOMMENDATIONS WITH INFLATION ADJUSTMENT

2015 - STUDY YEAR

● \$73,014 MINIMUM ANNUAL FUNDING

\$31.69 Per unit (average), minimum monthly funding of Replacement Reserves

The \$73,014 funding of Replacement Reserves in the Study Year has been calculated using current construction costs (listed in Section B Inventory). The Analyst has adjusted the costs to account for any time lag between the preparation of the Study and the Study Year.

2016 - YEAR TWO

● \$80,508 INFLATION ADJUSTED MINIMUM ANNUAL FUNDING

\$34.94 Per unit (average), minimum monthly funding of Replacement Reserves

The \$80,508 inflation adjusted funding of Replacement Reserves in 2016 represents a 10.26 percent increase over the non-inflation adjusted funding recommendation of \$73,014 in the Study Year.

The specific assumptions used to calculate the Year Two Inflation Adjusted Funding are listed below. If the assumptions are inaccurate, do not use the data and contact Miller Dodson Associates to arrange for a Replacement Reserve Study Update. The assumptions are:

- Replacement Reserves on Deposit totaling \$187,057 on January 1, 2016.
- All 2015 Projected Replacements scheduled in the Replacement Reserve Inventory and listed on Page C2, having been accomplished in 2015 at a cost of \$149,367.
- An average annual Construction Cost Inflation Rate of 4.50 percent over the previous 12 month period.

2017 - YEAR THREE

● \$94,772 INFLATION ADJUSTED MINIMUM ANNUAL FUNDING

\$41.13 Per unit (average), minimum monthly funding of Replacement Reserves

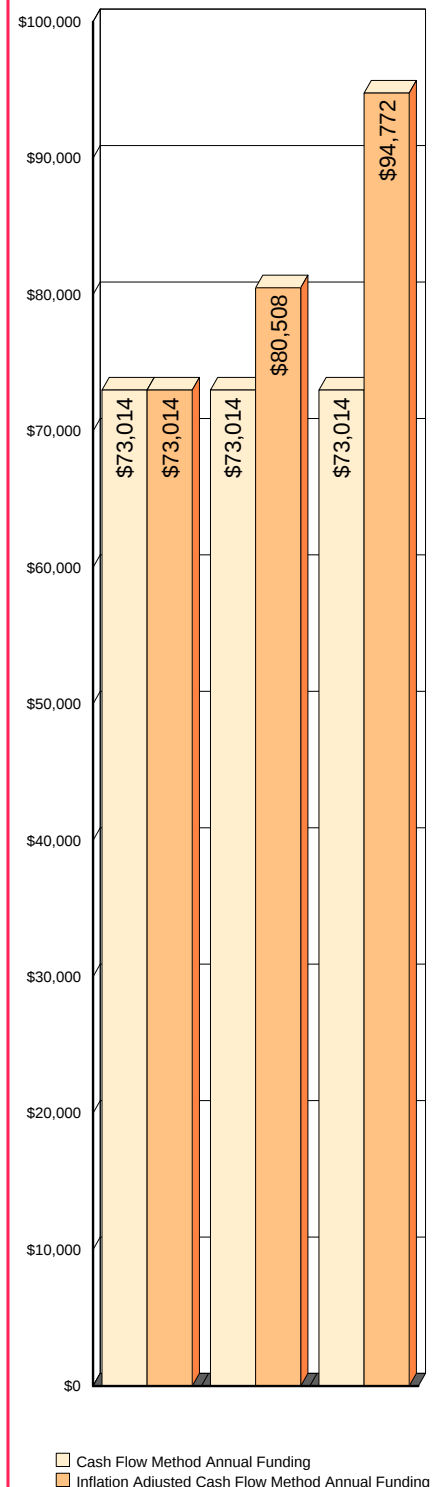
The \$94,772 inflation adjusted funding of Replacement Reserves in 2017 represents a 29.80 percent increase over the non-inflation adjusted funding recommendation of \$73,014 in the Study Year.

The specific assumptions used to calculate the Year Two Inflation Adjusted Funding are listed below. If the assumptions are inaccurate, do not use the data and contact Miller Dodson Associates to arrange for a Replacement Reserve Study Update. The assumptions are:

- Replacement Reserves on Deposit totaling \$230,323 on January 1, 2017.
- All 2016 Projected Replacements scheduled in the Replacement Reserve Inventory and listed on Page C2, having been accomplished in 2016 at a cost of \$31,087.
- An average annual Construction Cost Inflation Rate of 4.50 percent over the previous 24 month period.

ANNUAL FUNDING GRAPH

The bar graph below shows the Cash Flow Method Annual Funding calculated in today's dollars (lighter bars) and the Inflation Adjusted Cash Flow Method Annual Funding (dark bars)



COMPONENT METHOD



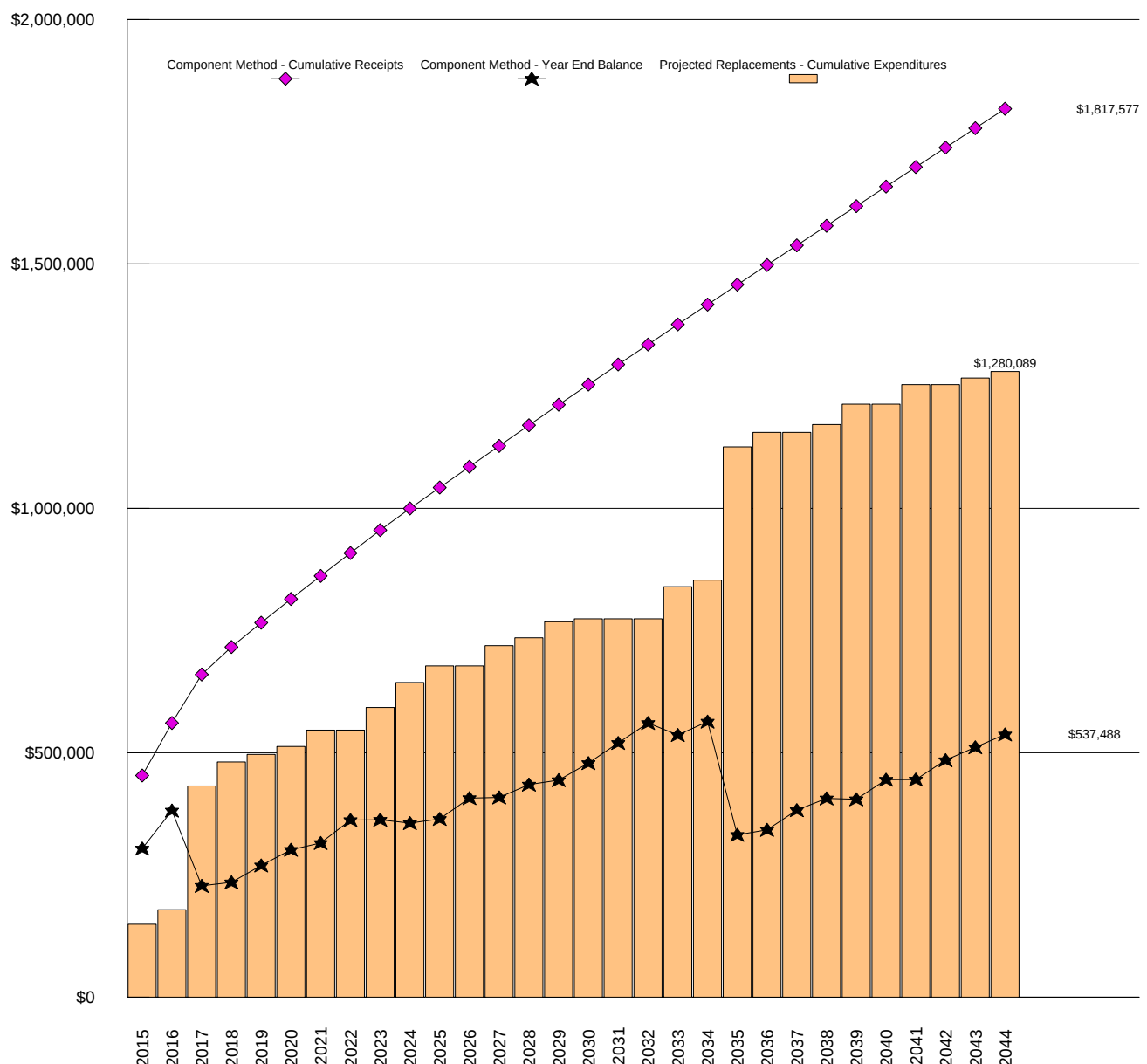
\$190,201

COMPONENT METHOD RECOMMENDED ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2015.

\$82.55 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 53 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 A9.

Graph #4. Component Method - Cumulative Receipts and Expenditures Graph



COMPONENT METHOD (cont'd)

- **Current Funding Objective.** A Current Funding Objective is calculated for each of the Projected Replacements listed in the Replacement Reserve Inventory. Replacement Cost is divided by the Normal Economic Life to determine the nominal annual contribution. The Remaining Economic Life is then subtracted from the Normal Economic Life to calculate the number of years that the nominal annual contribution should have been made. The two values are then multiplied to determine the Current Funding Objective. This is repeated for each of the 53 Projected Replacements. The total, \$662,710, is the Current Funding Objective.

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

- **Funding Percentage.** The Funding Percentage is calculated by dividing the Beginning Balance (\$263,411) by the Current Funding Objective (\$662,710). At Westhaven HOA the Funding Percentage is 39.7%
- **Allocation of the Beginning Balance.** The Beginning Balance is divided among the 53 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 39.7 percent funded, there is \$318 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 \$190,201, the Component Method Recommended Annual Funding of Replacement Reserves in the Study Year (2015).

In our fence example, the \$318 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 \$341. Next year, the deposit remains \$341, 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.

Table #2. Component Method Data - Years 1 through 30

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Beginning balance	\$263,411									
Recommended annual funding	\$190,201	\$107,332	\$99,266	\$56,134	\$49,914	\$48,508	\$47,199	\$46,816	\$46,816	\$44,371
Expenditures	\$149,367	\$29,748	\$253,110	\$48,993	\$15,552	\$16,300	\$33,303		\$46,291	\$51,100
Year end balance	\$304,245	\$381,829	\$227,985	\$235,126	\$269,488	\$301,696	\$315,591	\$362,407	\$362,932	\$356,203
Cumulative Expenditures	\$149,367	\$179,115	\$432,225	\$481,218	\$496,770	\$513,070	\$546,373	\$546,373	\$592,664	\$643,764
Cumulative Receipts	\$453,612	\$560,944	\$660,210	\$716,344	\$766,258	\$814,766	\$861,964	\$908,780	\$955,597	\$999,967
Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Recommended annual funding	\$42,753	\$42,560	\$42,560	\$42,317	\$42,062	\$41,072	\$41,039	\$41,039	\$41,039	\$40,725
Expenditures	\$34,158		\$41,303	\$15,940	\$32,851	\$6,260			\$65,629	\$13,500
Year end balance	\$364,798	\$407,358	\$408,615	\$434,991	\$444,202	\$479,015	\$520,054	\$561,092	\$536,502	\$563,727
Cumulative Expenditures	\$677,922	\$677,922	\$719,225	\$735,165	\$768,016	\$774,276	\$774,276	\$774,276	\$839,905	\$853,405
Cumulative Receipts	\$1,042,720	\$1,085,280	\$1,127,840	\$1,170,157	\$1,212,219	\$1,253,291	\$1,294,330	\$1,335,368	\$1,376,407	\$1,417,132
Year	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Recommended annual funding	\$40,725	\$40,112	\$40,112	\$40,112	\$40,099	\$40,099	\$40,099	\$39,696	\$39,696	\$39,696
Expenditures	\$272,350	\$29,748		\$15,940	\$41,855		\$39,851		\$13,440	\$13,500
Year end balance	\$332,102	\$342,467	\$382,579	\$406,751	\$404,995	\$445,094	\$445,342	\$485,037	\$511,293	\$537,488
Cumulative Expenditures	\$1,125,755	\$1,155,503	\$1,155,503	\$1,171,443	\$1,213,298	\$1,213,298	\$1,253,149	\$1,253,149	\$1,266,589	\$1,280,089
Cumulative Receipts	\$1,457,857	\$1,497,969	\$1,538,081	\$1,578,194	\$1,618,293	\$1,658,391	\$1,698,490	\$1,738,186	\$1,777,881	\$1,817,577

CURRENT FUNDING

\$48,000

CURRENT ANNUAL FUNDING OF REPLACEMENT RESERVES (as reported by the Association).

\$20.83 Per unit (average), reported current monthly funding of Replacement Reserves

General. Our evaluation of the Current Association Funding assumes that the Association will continue to fund Replacement Reserves at the current level of \$48,000 per year in each of the 30 years of the Study Period.

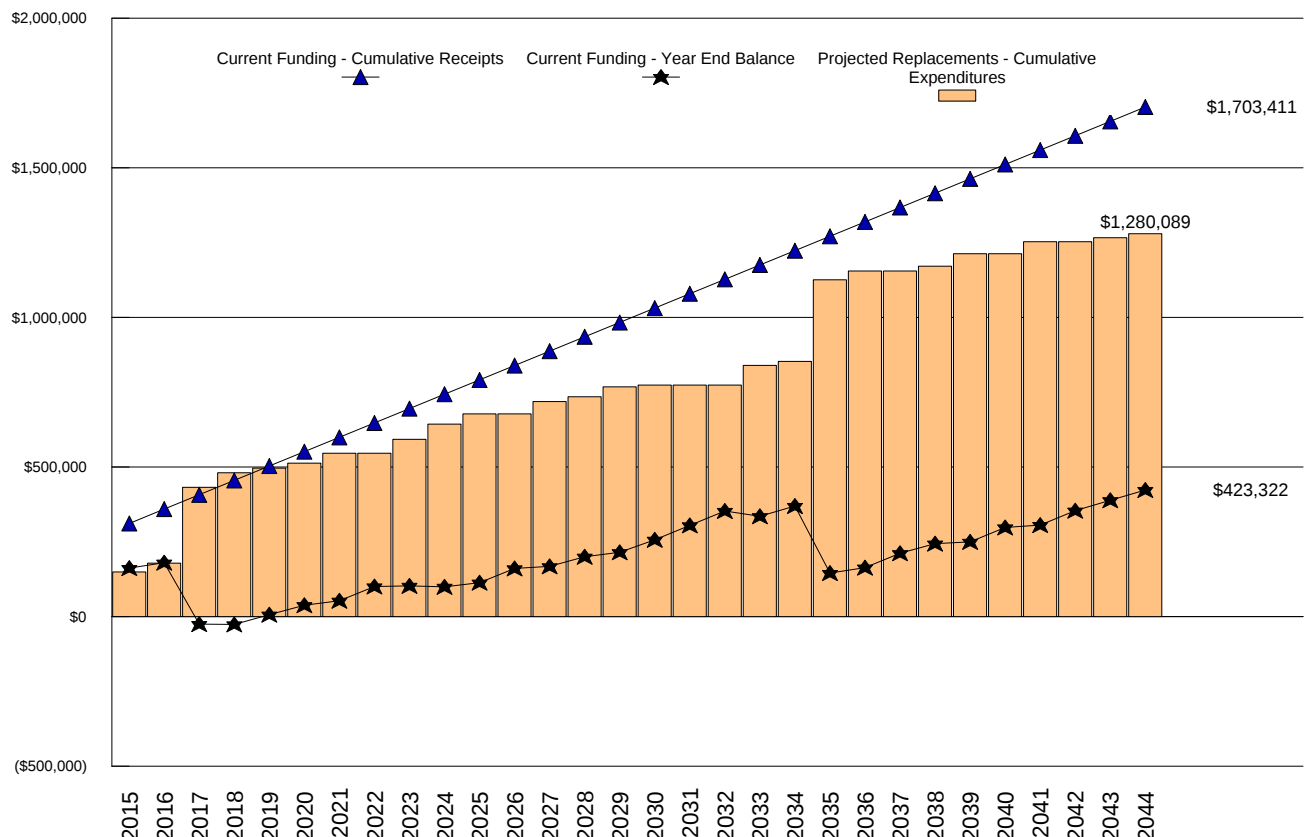
Our evaluation is based upon this Replacement Reserve Funding Level, a \$263,411 Beginning Balance, the Projected Annual Replacement Expenditures shown in Graph #1 and listed in the Replacement Reserve Inventory, and any interest, inflation rate, or constant annual increase in annual contribution adjustments discussed below.

- Evaluation. Our calculations have determined that Current Annual Funding of Replacement Reserves, as reported by the Association, is inadequate to fund Projected Replacement beginning in 2017.

The Current Annual Funding of Replacement Reserves results in insufficient funds to make Projected Replacements in 2 years of the 30-year Study Period, and a maximum shortfall of \$-25,807 occurs in 2018.

- Adjustment to the Current Association Funding for interest and inflation. The Calculations in the Replacement Reserve Analysis do not account for interest earned on Replacement Reserves, the effects of inflation of the cost of Projected Replacements, or a constant annual increase in Annual Funding of Replacement Reserves.
- Comparison of Current Association Funding and Average Annual Expenditure. The average annual expenditure for Projected Replacements listed in the Reserve Inventory over the 30-year Study Period is \$42,670 (see Graph #1). Current Association annual funding of Replacement Reserves is \$48,000, or approximately 112 percent of the Average Annual Expenditure.

Graph #5. Current Association Funding - Cumulative Receipts and Expenditures Graph



CURRENT FUNDING (cont'd)

Table #3. Current Funding Data - Years 1 through 30

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Beginning balance	\$263,411									
Annual deposit	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
Expenditures	\$149,367	\$29,748	\$253,110	\$48,993	\$15,552	\$16,300	\$33,303		\$46,291	\$51,100
Year end balance	\$162,044	\$180,296	(\$24,814)	(\$25,807)	\$6,641	\$38,341	\$53,038	\$101,038	\$102,747	\$99,647
Cumulative Expenditures	\$149,367	\$179,115	\$432,225	\$481,218	\$496,770	\$513,070	\$546,373	\$546,373	\$592,664	\$643,764
Cumulative Receipts	\$311,411	\$359,411	\$407,411	\$455,411	\$503,411	\$551,411	\$599,411	\$647,411	\$695,411	\$743,411
Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Annual deposit	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
Expenditures	\$34,158		\$41,303	\$15,940	\$32,851	\$6,260			\$65,629	\$13,500
Year end balance	\$113,489	\$161,489	\$168,186	\$200,246	\$215,395	\$257,135	\$305,135	\$353,135	\$335,506	\$370,006
Cumulative expenditures	\$677,922	\$677,922	\$719,225	\$735,165	\$768,016	\$774,276	\$774,276	\$774,276	\$839,905	\$853,405
Cumulative receipts	\$791,411	\$839,411	\$887,411	\$935,411	\$983,411	\$1,031,411	\$1,079,411	\$1,127,411	\$1,175,411	\$1,223,411
Year	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044
Annual deposit	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
Expenditures	\$272,350	\$29,748		\$15,940	\$41,855		\$39,851		\$13,440	\$13,500
Year end balance	\$145,656	\$163,908	\$211,908	\$243,968	\$250,113	\$298,113	\$306,262	\$354,262	\$388,822	\$423,322
Cumulative Expenditures	\$1,125,755	\$1,155,503	\$1,155,503	\$1,171,443	\$1,213,298	\$1,213,298	\$1,253,149	\$1,253,149	\$1,266,589	\$1,280,089
Cumulative Receipts	\$1,271,411	\$1,319,411	\$1,367,411	\$1,415,411	\$1,463,411	\$1,511,411	\$1,559,411	\$1,607,411	\$1,655,411	\$1,703,411

COMMENTS ON THE REPLACEMENT RESERVE ANALYSIS

- This Replacement Reserve Study has been developed in compliance with the Community Associations Institute, National Reserve Study Standards, for a Level One Study - Full Service.
- Westhaven HOA has 192 units. The type of property is a home owner association.
- Our calculations assume that Replacement Reserves are not subject to tax.
- 09/15/14. Changed current contribution and starting balance.

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REPLACEMENT RESERVE INVENTORY GENERAL INFORMATION

Westhaven HOA - Replacement Reserve Inventory identifies 96 items. Two types of items are identified, Projected Replacements and Excluded Items:

- **PROJECTED REPLACEMENTS.** 53 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 \$1,004,535. Replacements totaling \$1,280,089 are scheduled in the Replacement Reserve Inventory over the 30-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.** 43 of the items are Excluded Items, and expenditures for these items are NOT scheduled for funding from Replacement Reserves. The accuracy of the calculations made in the Replacement Reserve Analysis is dependent on expenditures NOT being made for Excluded Items. The Excluded Items are listed in the Replacement Reserve Inventory to identify specific items and categories of items that are not to be funded from Replacement Reserves. There are multiple categories of items that are typically excluded from funding by Replacement Reserves, including but not limited to:

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

Value. Items with a replacement cost of less than \$1,000 and/or a normal economic life of less than 3 years are typically excluded from funding from Replacement Reserves. This exclusion is made to accurately reflect how Replacement Reserves are administered. If the Association has selected an alternative level, it will be noted in the Replacement Reserve Inventory - General Comments on Page B2.

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

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

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

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

- **CATEGORIES.** The 96 items included in the Westhaven HOA Replacement Reserve Inventory are divided into 11 major categories. Each category is printed on a separate page, Pages B3 to B12.
- **LEVEL OF SERVICE.** This Replacement Reserve Inventory has been developed in compliance with the standards established for a Level One Study - Full Service, as defined by the National Reserve Study Standards, established in 1998 by Community Associations Institute, which states:

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

REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (cont'd)

- **INVENTORY DATA.** Each of the 53 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 named each item included in the Inventory. Where the name of the item and the category are not sufficient to specifically identify the item, we have included additional information in the Comments section at the bottom of the page.

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

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

Unit Replacement Cost. We use three sources to develop the unit cost data shown in the Inventory; actual replacement cost data provided by the client, industry standard estimating manuals, and a cost database that we have developed based upon our detailed interviews with contractors and service providers who are specialists in their respective lines of work. In addition, trends in the Producers Price Index (PPI), labor rates, and transportation costs are monitored and considered. This cost database is reviewed and updated regularly by Miller Dodson and biannually by an independent professional cost estimating firm.

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

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

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

Each of the 43 Excluded Items includes the Item Description, Units, and Number of Units. Many of the Excluded Items are listed as a 'Lump Sum' with a quantity of 1. For the Excluded Items, this indicates that all of the items identified by the 'Item Description' are excluded from funding by Replacement Reserves.

- **REVIEW OF EXPENDITURES.** This Replacement Reserve Study should be reviewed by an accounting professional representing the Association prior to implementation.
- **PARTIAL FUNDING.** Items may have been included in the Replacement Reserve Inventory at less than 100 percent of their full quantity and/or replacement cost. This is done on items that will never be replaced in their entirety, but which may require periodic replacements over an extended period of time. The assumptions that provide the basis for any partial funding are noted on in the Comments section.
- **REMAINING ECONOMIC LIFE GREATER THAN 40 YEARS.** The calculations do not include funding for initial replacements beyond 40 years. These replacements are included in this Study for tracking and evaluation. They should be included for funding in future Studies, when they enter the 40-year window.

**SITE COMPONENT
PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
1	Asphalt pavement, seal coat	sf	129,564	\$0.20	6	none	\$25,913
2	Asphalt pavement, mill & overlay	sf	129,564	\$1.70	18	2	\$220,259
3	Asphalt path, seal coat	sf	1,626	\$0.24	6	6	\$390
4	Asphalt path, overlay	sf	1,626	\$3.25	18	none	\$5,285
5	Stamped concrete roadway	sf	1,230	\$12.00	30	none	\$14,760
6	Repoint brick, grouted	sf	1,086	\$5.00	18	none	\$5,430
7	Brick grouted, replace	sf	1,086	\$13.00	36	18	\$14,118
8	Entrance sign, refurbish	ls	1	\$2,500.00	30	5	\$2,500
9	Entrance features, refurbish	ls	2	\$6,900.00	30	5	\$13,800
10	Small trellis	ea	2	\$2,100.00	20	10	\$4,200
11	Large trellis	ea	1	\$5,150.00	20	10	\$5,150
12	Site lighting	ea	16	\$2,350.00	35	9	\$37,600
13	Irrigation system controllers	ea	2	\$1,250.00	10	3	\$2,500
14	Irrigation system piping - 8 zone	zone	8	\$4,000.00	30	3	\$32,000
15	Storm water system	ls	1	\$13,500.00	10	9	\$13,500
SITE COMPONENT - Replacement Costs - Subtotal							\$397,404

**SITE COMPONENT
COMMENTS**

- We have assumed that the Association will replace the asphalt pavement by the installation of a 2.5 inch thick overlay compacted to 2 inches. The pavement will need to be milled prior to the installation of the overlay. Milling and the cost of minor repairs (5 to 10 percent of the total area) to the base materials and bearing soils beneath the pavement are included in the cost shown above.
- 09/15/14. Added storm water system to include catch basins. Added irrigation system components.

SITE COMPONENT (cont.)

PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
16	Wood retaining wall (PTL) (20%)	sf	420	\$32.00	25	3	\$13,440
17	Wood retaining wall (PTL) (20%)	sf	420	\$32.00	25	8	\$13,440
18	Wood retaining wall (PTL) (20%)	sf	420	\$32.00	25	13	\$13,440
19	Wood retaining wall (PTL) (20%)	sf	420	\$32.00	25	18	\$13,440
20	Wood retaining wall (PTL) (20%)	sf	420	\$32.00	25	23	\$13,440
21	Concrete block retaining wall	sf	395	\$40.00	40	30	\$15,800
22	Brick privacy wall, repoint (10%)	sf	2,960	\$6.50	10	10	\$19,240
23	Brick privacy wall, restore	sf	14,800	\$6.50	60	none	\$96,200
24	2-Rail wood fence, storm water pond	ft	178	\$10.00	15	none	\$1,780
25	Wood fence, Westmore Ct	ft	486	\$32.00	20	4	\$15,552
26	Wood fence, square, Old Keene Mill	ft	301	\$32.00	20	1	\$9,632
27	Wood fence, arched, Old Keene Mill	ft	597	\$32.00	20	1	\$19,104
28	Wood fence, painted	ft	174	\$32.00	20	10	\$5,568
29	Wood fence, by single family homes	ft	140	\$32.00	20	15	\$4,480

SITE COMPONENT (cont.) - Replacement Costs - Subtotal \$254,556

SITE COMPONENT (cont.)

COMMENTS

- Restoration of the brick privacy wall includes pressure washing both sides of the wall, removing all ivy and other vegetation, replacing cracked and missing bricks, and re-pointing all deficient mortar.

SITE COMPONENT (cont.)

PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
30	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	2	\$15,708
31	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	8	\$15,708
32	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	14	\$15,708
33	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	20	\$15,708
34	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	26	\$15,708
35	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	32	\$15,708
36	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	38	\$15,708
37	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	44	\$15,708
38	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	50	\$15,708
39	Concrete sidewalk (6%)	sf	1,848	\$8.50	60	56	\$15,708
40	Concrete curb & gutter (6%)	ft	553	\$31.00	60	2	\$17,143
41	Concrete curb & gutter (6%)	ft	553	\$31.00	60	8	\$17,143
42	Concrete curb & gutter (6%)	ft	553	\$31.00	60	14	\$17,143
43	Concrete curb & gutter (6%)	ft	553	\$31.00	60	20	\$17,143
44	Concrete curb & gutter (6%)	ft	553	\$31.00	60	26	\$17,143
45	Concrete curb & gutter (6%)	ft	553	\$31.00	60	32	\$17,143
46	Concrete curb & gutter (6%)	ft	553	\$31.00	60	38	\$17,143
47	Concrete curb & gutter (6%)	ft	553	\$31.00	60	44	\$17,143
48	Concrete curb & gutter (6%)	ft	553	\$31.00	60	50	\$17,143
49	Concrete curb & gutter (6%)	ft	553	\$31.00	60	56	\$17,143

SITE COMPONENT (cont.) - Replacement Costs - Subtotal \$328,510

SITE COMPONENT (cont.)

COMMENTS

**TOT LOT and MP COURT
PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
50	Tot lot - Play structure	ea	1	\$15,000.00	20	12	\$15,000
51	Tot lot - wood border	ft	117	\$9.00	15	3	\$1,053
52	Tot lot - wood railing	ft	44	\$23.00	20	1	\$1,012
53	MP court - base asphalt	sf	2,000	\$3.50	20	6	\$7,000

TOT LOT and MP COURT - Replacement Costs - Subtotal \$24,065

**TOT LOT and MP COURT
COMMENTS**

- Tot lots and tot lot equipment should be evaluated annually by a playground safety specialist for compliance with the Consumer Product Safety Commission, Handbook for Public Playground Safety. Defects should be corrected immediately to protect the users of the facilities from potential injury and the Association from potential liability for those injuries.
- The retaining wall at the tot lot is included with the retaining wall line item under "Site Improvements."

VALUATION EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Handrails at steps	ls	1				EXCLUDED
	Property identification signage	ls	1				EXCLUDED
	Miscellaneous signage	ls	1				EXCLUDED
	Flagstones set in grass	ls	1				EXCLUDED
	Pet run stations	ls	1				EXCLUDED
	Bench	ls	1				EXCLUDED
	Trash receptacle	ls	1				EXCLUDED

VALUATION EXCLUSIONS

COMMENTS

- Valuation Exclusions. For ease of administration of the Replacement Reserves and to reflect accurately how Replacement Reserves are administered, items with a dollar value less than \$1,000.00 have not been scheduled for funding from Replacement Reserves. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

LONG-LIFE EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Brick privacy walls	ls	1				EXCLUDED
	Miscellaneous culverts	ls	1				EXCLUDED
	Entrance structures	ls	1				EXCLUDED

LONG-LIFE EXCLUSIONS

COMMENTS

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

UNIT IMPROVEMENTS EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Domestic water pipes serving one unit	ls	1				EXCLUDED
	Sanitary sewers serving one unit	ls	1				EXCLUDED
	Electrical wiring serving one unit	ls	1				EXCLUDED
	Cable TV service serving one unit	ls	1				EXCLUDED
	Telephone service serving one unit	ls	1				EXCLUDED
	Driveway on an individual lot	ls	1				EXCLUDED
	Sidewalk/lead walk on an individual lot	ls	1				EXCLUDED
	Stairs on an individual lot	ls	1				EXCLUDED
	Retaining wall on an individual lot	ls	1				EXCLUDED
	Fence on an individual lot	ls	1				EXCLUDED
	Unit exterior	ls	1				EXCLUDED
	Unit interior	ls	1				EXCLUDED

UNIT IMPROVEMENTS EXCLUSIONS

COMMENTS

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

UTILITY EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Primary electric feeds	ls	1				EXCLUDED
	Electric transformers	ls	1				EXCLUDED
	Cable TV systems and structures	ls	1				EXCLUDED
	Telephone cables and structures	ls	1				EXCLUDED
	Water mains and meters	ls	1				EXCLUDED
	Sanitary sewers	ls	1				EXCLUDED
	Stormwater management system	ls	1				EXCLUDED

UTILITY EXCLUSIONS

COMMENTS

- Utility Exclusions. Many improvements owned by utility companies are on property owned by the Association. We have assumed that repair, maintenance, and replacements of these components will be done at the expense of the appropriate utility company. Examples of items excluded from funding Replacement Reserves by this standard are listed above.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

MAINTENANCE AND REPAIR EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Cleaning of asphalt pavement	ls	1				EXCLUDED
	Crack sealing of asphalt pavement	ls	1				EXCLUDED
	Painting of curbs	ls	1				EXCLUDED
	Striping of parking spaces	ls	1				EXCLUDED
	Landscaping and site grading	ls	1				EXCLUDED
	Exterior painting	ls	1				EXCLUDED
	Interior painting	ls	1				EXCLUDED
	Janitorial service	ls	1				EXCLUDED
	Repair services	ls	1				EXCLUDED
	Partial replacements	ls	1				EXCLUDED
	Capital improvements	ls	1				EXCLUDED

MAINTENANCE AND REPAIR EXCLUSIONS

COMMENTS

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

GOVERNMENT EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Government, stormwater mgmt.	ls	1				EXCLUDED
	Government, ponds	ls	1				EXCLUDED
	Government, mailboxes	ls	1				EXCLUDED

GOVERNMENT EXCLUSIONS

COMMENTS

- Government Exclusions. We have assumed that some of the improvements installed on property owned by the Association will be maintained by the state, county, or local government, or other association or other responsible entity. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- The County dredged the wet pond recently, but ownership is unknown.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

PROJECTED ANNUAL REPLACEMENTS GENERAL INFORMATION

CALENDAR OF ANNUAL REPLACEMENTS. The 53 Projected Replacements in the Westhaven HOA Replacement Reserve Inventory whose replacement is scheduled to be funded from Replacement Reserves are broken down on a year-by-year basis, beginning on Page C2.

REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

- **REVISIONS.** Revisions will be made to the Replacement Reserve Analysis and Replacement Reserve Inventory in accordance with the written instructions of the Board of Directors. No additional charge is incurred for the first revision, if requested in writing within three months of the date of the Replacement Reserve Study. It is our policy to provide revisions in electronic (Adobe PDF) format only.
- **TAX CODE.** The United States Tax Code grants favorable tax status to a common interest development (CID) meeting certain guidelines for their Replacement Reserve. If a CID files their taxes as a 'Corporation' on Form 1120 (IRC Section 277), these guidelines typically require maintenance activities, partial replacements, minor replacements, capital improvements, and one-time only replacements to be excluded from Reserves. A CID cannot commingle 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.
- **UPDATING.** In the first two or possibly three years after the completion of a Level One Replacement Reserve Study, we recommend the Association review and revise the Replacement Reserve Analysis and Inventory annually to take into account replacements which have occurred and known changes in replacement costs. This can frequently be handled as a Level Two or Level Three Study (as defined by the Community Associations Institute), unless the Association has completed major replacement projects. A full analysis (Level One) based on a comprehensive visual evaluation of the site should be accomplished every three to five years or after each major replacement project.
- **EXPERIENCE WITH FUTURE REPLACEMENTS.** The Calendar of Annual Projected Replacements, lists replacements we have projected to occur over the next thirty years, begins on Page C2. Actual experience in replacing the items may differ significantly from the cost estimates and time frames shown because of conditions beyond our control. These differences may be caused by maintenance practices, inflation, variations in pricing and market conditions, future technological developments, regulatory actions, acts of God, and luck. Some items may function normally during our visual evaluation and then fail without notice.
- **REVIEW OF THE REPLACEMENT RESERVE STUDY.** For this study to be effective, it should be reviewed by the Westhaven HOA 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 ONE TO FIFTEEN

Item	2015	\$
1	Asphalt pavement, seal coat	\$25,913
4	Asphalt path, overlay	\$5,285
5	Stamped concrete roadway	\$14,760
6	Repoint brick, grouted	\$5,430
23	Brick privacy wall, restore	\$96,200
24	2-Rail wood fence, storm wa	\$1,780
Total Scheduled Replacements		\$149,367

Item	2016	\$
26	Wood fence, square, Old Ke	\$9,632
27	Wood fence, arched, Old Ke	\$19,104
52	Tot lot - wood railing	\$1,012
Total Scheduled Replacements		\$29,748

Item	2017	\$
2	Asphalt pavement, mill & ov	\$220,259
30	Concrete sidewalk (6%)	\$15,708
40	Concrete curb & gutter (6%)	\$17,143
Total Scheduled Replacements		\$253,110

Item	2018	\$
13	Irrigation system controllers	\$2,500
14	Irrigation system piping - 8 z	\$32,000
16	Wood retaining wall (PTL) (z	\$13,440
51	Tot lot - wood border	\$1,053
Total Scheduled Replacements		\$48,993

Item	2019	\$
25	Wood fence, Westmore Ct	\$15,552
Total Scheduled Replacements		\$15,552

Item	2020	\$
8	Entrance sign, refurbish	\$2,500
9	Entrance features, refurbish	\$13,800
Total Scheduled Replacements		\$16,300

Item	2021	\$
1	Asphalt pavement, seal coat	\$25,913
3	Asphalt path, seal coat	\$390
53	MP court - base asphalt	\$7,000
Total Scheduled Replacements		\$33,303

Item	2022	\$
No Scheduled Replacements		

Item	2023	\$
17	Wood retaining wall (PTL) (z	\$13,440
31	Concrete sidewalk (6%)	\$15,708
41	Concrete curb & gutter (6%)	\$17,143
Total Scheduled Replacements		\$46,291

Item	2024	\$
12	Site lighting	\$37,600
15	Storm water system	\$13,500
Total Scheduled Replacements		\$51,100

Item	2025	\$
10	Small trellis	\$4,200
11	Large trellis	\$5,150
22	Brick privacy wall, repoint (1	\$19,240
28	Wood fence, painted	\$5,568
Total Scheduled Replacements		\$34,158

Item	2026	\$
No Scheduled Replacements		

Item	2027	\$
1	Asphalt pavement, seal coat	\$25,913
3	Asphalt path, seal coat	\$390
50	Tot lot - Play structure	\$15,000
Total Scheduled Replacements		\$41,303

Item	2028	\$
13	Irrigation system controllers	\$2,500
18	Wood retaining wall (PTL) (z	\$13,440
Total Scheduled Replacements		\$15,940

Item	2029	\$
32	Concrete sidewalk (6%)	\$15,708
42	Concrete curb & gutter (6%)	\$17,143
Total Scheduled Replacements		\$32,851

PROJECTED REPLACEMENTS - YEARS SIXTEEN TO THIRTY

Item	2030	\$
24	2-Rail wood fence, storm wa	\$1,780
29	Wood fence, by single family	\$4,480
Total Scheduled Replacements		\$6,260

Item	2031	\$
No Scheduled Replacements		

Item	2032	\$
No Scheduled Replacements		

Item	2033	\$
1	Asphalt pavement, seal coat	\$25,913
3	Asphalt path, seal coat	\$390
4	Asphalt path, overlay	\$5,285
6	Repoint brick, grouted	\$5,430
7	Brick grouted, replace	\$14,118
19	Wood retaining wall (PTL) (2	\$13,440
51	Tot lot - wood border	\$1,053
Total Scheduled Replacements		\$65,629

Item	2034	\$
15	Storm water system	\$13,500
Total Scheduled Replacements		\$13,500

Item	2035	\$
2	Asphalt pavement, mill & ov	\$220,259
22	Brick privacy wall, repoint (1	\$19,240
33	Concrete sidewalk (6%)	\$15,708
43	Concrete curb & gutter (6%)	\$17,143
Total Scheduled Replacements		\$272,350

Item	2036	\$
26	Wood fence, square, Old Ke	\$9,632
27	Wood fence, arched, Old Ke	\$19,104
52	Tot lot - wood railing	\$1,012
Total Scheduled Replacements		\$29,748

Item	2037	\$
No Scheduled Replacements		

Item	2038	\$
13	Irrigation system controllers	\$2,500
20	Wood retaining wall (PTL) (2	\$13,440
Total Scheduled Replacements		\$15,940

Item	2039	\$
1	Asphalt pavement, seal coat	\$25,913
3	Asphalt path, seal coat	\$390
25	Wood fence, Westmore Ct	\$15,552
Total Scheduled Replacements		\$41,855

Item	2040	\$
No Scheduled Replacements		

Item	2041	\$
34	Concrete sidewalk (6%)	\$15,708
44	Concrete curb & gutter (6%)	\$17,143
53	MP court - base asphalt	\$7,000
Total Scheduled Replacements		\$39,851

Item	2042	\$
No Scheduled Replacements		

Item	2043	\$
16	Wood retaining wall (PTL) (2	\$13,440
Total Scheduled Replacements		\$13,440

Item	2044	\$
15	Storm water system	\$13,500
Total Scheduled Replacements		\$13,500

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CONDITION ASSESSMENT

General Comments. Miller - Dodson Associates conducted a Reserve Study at Westhaven HOA in June 2014. Westhaven HOA is in generally fair condition for a community constructed in the late 1980's/early 1990's. A review of the Replacement Reserve Inventory will show that we are anticipating most of the components achieving their normal economic lives. However, deferred maintenance of several items and the very harsh 2013/2014 winter has caused premature deterioration of select components.

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

General Condition Statements.

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

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

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

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

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

SITE COMPONENTS

Entry Monument and Signage. The Association maintains an entry monument with signage and two entrance structures. The signage monument is made of brick with a concrete inset carded with the community's name. The concrete is in fair to good condition, with some staining noted. The brick wall contains some open masonry joints and loose and broken masonry units that should be addressed when the masonry privacy wall is restored in 2015.



The two structures at one of the entrances are constructed of brick columns, standing seam metal roof and downlights in a drywall ceiling. The brick columns are long life items, but occasionally repointing will be required. We have included funds to replace the standing seam metal roof and ceiling/lighting system after 30 years of use. The metal roof may last longer with proper maintenance.



We recommend repointing and replacement of defective areas of the masonry as needed. The Association may want to consider applying a coat of Siloxane or other appropriate breathable sealant to mitigate water penetration and further degradation of the masonry work. For additional information, please see the appropriate links on our web site at <http://mdareserves.com/resources/links/building-exterior>.

In addition to the monuments, the Association is responsible for the community's signage including stop, street, parking, and entrance signs. These miscellaneous signs are not considered in this study and should be replaced using other funds.

Asphalt Pavement. The Association is responsible for the roadways, parking areas, and paths within the community. The condition of the pavement varies. Some of the areas are in very good condition, and others have full-depth pavement failure. Many of the roads and parking areas are cracked and have significant distress. One of the photos shows an area of Milva Way with an underground spring beneath according to Mr. Carl. This pavement should be expected to fail prematurely in future years due to the location of the spring.

The asphalt pavement was milled and resurfaced in 2005, but has deteriorated to the point that it may need to be replaced in the next several years. Immediate repairs will be needed to extend the life of the asphalt two to three years.





The Association maintains an inventory of asphalt pavement along the following streets and areas:

• Entrance	3,960	sf
• Westmore Drive	59,600	sf
• Westmore Court	11,940	sf
• Westhaven Lane	4,432	sf
• Serenade Place	4,136	sf
• Milva Lane	27,804	sf
• Castine Lane	11,038	sf
• Hubbardton Way	6,654	sf

The defects noted include the following:

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

Alligatoring. There are multiple locations where the asphalt has developed a pattern of cracking known as alligatoring. Alligatoring is the result of an unstable base under the asphalt. Shifting in the base causes the asphalt to crack and shift, forming the cracks that resemble the skin of an alligator. Once these cracks extend through the asphalt, they will allow water to penetrate to the base, accelerating the rate of deterioration. The only solution is to remove the defective asphalt and compact the base before new asphalt is installed.

Depressions. There are areas where the asphalt surface is depressed due to deformation in the surface or underlying layers. These depressions may continue to grow with exposure to traffic. Water ponding was noted in several of these areas. Repair will require removal of the asphalt and base material, installation and compaction of new base material, and resurfacing with asphalt.

The Association maintains a 1,626 sf path along the storm water management pond near Old Keene Mill Road. The path is in poor condition, with wide cracking in many locations.

Asphalt paths are typically constructed on native soil. As a result, defects can begin to develop in a few years, leading to costly repairs or early replacement. 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 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. The normal service life of asphalt pavement is typically 18 to 20 years.

In order to maintain the condition of the pavement throughout the community and to ensure the longest life of the asphalt, we recommend a systematic and comprehensive maintenance program that includes:

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

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

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

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

Concrete Work. The concrete work includes the community curbs, sidewalks, stairs, and other flatwork. The total quantity of sidewalk is 30,790 sf and the quantity of curb and gutter assemblies is 9,220 ft. We have modeled for curb replacement when the asphalt pavement is overlaid. The overall condition of the concrete work is good. We noted only one trip hazard. The Board walks the site at least annually to inspect for deficient concrete, and deficiencies are corrected in a timely manner. The most recent replacement occurred in May 2013. We noted many replaced sections of sidewalk and commend the Association on this proactive approach to concrete replacements.



The standards we use for recommending replacement are as follows:

- Trip hazard, ½ inch height difference.
- Severe cracking.
- Severe spalling and scale.
- Uneven riser heights on steps.
- Steps with risers in excess of 8¼ inches.

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

The relevant links on our web site may provide useful information related to concrete terminology, maintenance, and repair. Please see <http://mdareserves.com/resources/links/site-components>.

Stamped Concrete. There is a section of stamped concrete near the entrance monuments. The concrete is in poor condition, with a number of cracks that extend through the depth of the concrete. The concrete has reached the end of its life and should be replaced in full.

Mortar Grouted Brick Pavers. Brick pavers provide a solid, decorative, and renewable surface that is part of the community's sidewalk system. The overall condition of the unit pavers is fair with areas of defects consistent with the age of the installation.





The defects noted include the following:

- Cracking. There are multiple cracked pavers, some of which are creating trip hazards.
- Settlement. We identified areas where pavers have settled due to a failure of the base under the pavers. This settlement has resulted in an uneven surface that can pose a trip hazard.
- Delamination. The surface on a number of the pavers is separating from the body of the brick resulting in rough surfaces that form a trip hazard.
- Failed Grout. The grout installed between the bricks is failing. Failed grout will allow water to penetrate below the surface washing away the base materials.

To correct defects and provide the longest service life of the mortar grouted brick paver system periodic re-setting is required. Re-setting provides an opportunity to replace broken unit pavers, fill in voids in the foundation material, level the surface, and replace the grout. We have included an allowance for periodic re-set and re-grout of portions of the system.

Brick pavers have a long service life of 30 years or more, provided they are periodically maintained. Eventually pavers will require large-scale replacement, particularly when identical bricks are no longer available.

Trellises. The community contains two smaller trellises and one larger trellis. The trellises were originally wood, but the columns were replaced in 2005 with a Permacast® product made of fiberglass. The components that are still wood will need to be sanded, primed, and painted periodically to prevent the wood from rotting.



Site Lighting. The Association is responsible for the operation of the facility's streetlights, which consists of 16 poled streetlights. The lighting system was not on at the time of our site visit. We understand that the lighting system is in operating condition. The condition of the light poles was good with no significant noted defects.

This study assumes replacement of the light fixtures with poles every 35 years. When the light poles are replaced, we assume that the underground wiring will also be replaced.

When a whole-scale lighting replacement project is called for, we recommend consulting with a lighting design expert. Many municipalities have design codes, guidelines, and restrictions when it comes to exterior illumination.

In addition, new technology such LED and LIFI among others should be evaluated when considering replacement.



Retaining Walls. The Association maintains multiple wood and decorative concrete block retaining walls. The retaining walls are in mixed condition with light leaning, deterioration, and rot. Many of the walls are original, but some have recently been installed to address drainage and erosion issues.

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. We have programmed funds to replace 20% of these walls every 5 years to reflect the varying condition of the walls and the incremental nature of this work.



Concrete block masonry walls can have an extended useful life of 40 years or more, and if stable, may only require periodic restacking and localized repair. This study assumes that maintenance will be performed incrementally as needed.



When and if it becomes necessary to replace the wood retaining walls, we recommend the Association consider 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. As a general source of information about retaining walls, we offer several links from our website at <http://mdareserves.com/resources/links/site-components>.

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.

Brick Privacy Walls. The Association maintains 2,100 lineal feet of brick privacy wall that varies in height from 3' to 10'. The Association is expecting to undertake a significant restoration project in 2015 to include repairing the wall. The scope of the project will be to remove all vegetation (including ivy), pressure wash the bricks, replace all damaged and missing bricks, and re-point failed mortar on both sides of the walls. The Association obtained price quotes in 2012 to restore the wall. The bids ranged from \$54,000 to \$82,000 plus an additional \$10,000 for pressure washing. Once this restoration is complete, the wall will need to be repointed and repaired as needed approximately every 10 years.





Fencing. The Association maintains wood fencing that is in mixed condition. Some of the fencing that backs up to neighboring communities appears to be newer and has many years of remaining life. The fencing along Old Keene Mill Road is aging and should be budgeted for replacement in the next several years. The two-rail fencing near the storm water management pond has reached the end of its life. Fencing systems have a large number of configurations and finishes that can usually be repaired as a maintenance activity by replacing individual components as they become damaged or weathered. Replacement of sections damaged by vandalism may be required before the fence is replaced in full, such as the broken section shown below.





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

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

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

Storm Water Pond. The community is served by a single storm water pond at one of the community entrances. Ownership of this pond is in question. The County recently dredged the pond, and the Association maintains the spillway.

Ponds will accumulate silt and over time and lose the ability to store storm water 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 every 20 years. 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.

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 short lists 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. We have also excluded the cost of dredging, since this activity has historically been performed by the County.

RECREATIONAL FACILITIES

Tot Lot. There is a single tot lot on the property with children's play equipment. The area has a wood mulch play surface enclosed by a wood border. The play equipment was replaced in 2007 or 2008 according to Mr. Carr. Individual components are in need of repair, but the overall condition of the play structure is good. The wood border is aging except for one of the sides with a newer piece of lumber. The retaining wall is in good condition, but the railing is aging and may need to be replaced sooner. Annual inspections should be performed to ensure an adequate level of mulch and to identify necessary repairs. The Association's contract with the landscape company includes mulch for the tot lot.





Multipurpose Court. There is a 40' x 50' asphalt area that was initially envisioned as a basketball court but is now used as a multipurpose court. The asphalt is in fair condition, with some cracks that should be filled when the asphalt pavement is crack filled and seal coated in 2015. The court contains a single powder coated metal bench that is considered a minor item. The small retaining walls are included in the "wood retaining wall" item.



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

End of Condition Assessment

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CASH FLOW METHOD ACCOUNTING SUMMARY

This Westhaven HOA - Cash Flow Method Accounting Summary is an attachment to the Westhaven HOA - Replacement Reserve Study dated Revised September 15, 2014 and is for use by accounting and reserve professionals experienced in Association funding and accounting principles. This Summary consists of four reports, the 2015, 2016, and 2017 Cash Flow Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- CASH FLOW METHOD CATEGORY FUNDING REPORT, 2015, 2016, and 2017. Each of the 53 Projected Replacements listed in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of 4 categories. The following information is summarized by category in each report:
 - Normal Economic Life and Remaining Economic Life of the Projected Replacements.
 - Cost of all Scheduled Replacements in each category.
 - Replacement Reserves on Deposit allocated to the category at the beginning and end of the report period.
 - Cost of Projected Replacements in the report period.
 - Recommended Replacement Reserve Funding allocated to the category during the report period as calculated by the Cash Flow Method.
- THREE-YEAR REPLACEMENT FUNDING REPORT. This report details the allocation of the \$263,411 Beginning Balance (at the start of the Study Year) and the \$219,041 of additional Replacement Reserve Funding in 2015 through 2017 (as calculated in the Replacement Reserve Analysis) to each of the 53 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and discussed below. The calculated data includes:
 - Identification and estimated cost of each Projected Replacement schedule in years 2015 through 2017.
 - Allocation of the \$263,411 Beginning Balance to the Projected Replacements by Chronological Allocation.
 - Allocation of the \$219,041 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2015 through 2017, by Chronological Allocation.
- CHRONOLOGICAL ALLOCATION. Chronological Allocation assigns Replacement Reserves to Projected Replacements on a "first come, first serve" basis in keeping with the basic philosophy of the Cash Flow Method. The Chronological Allocation methodology is outlined below.
 - The first step is the allocation of the \$263,411 Beginning Balance to the Projected Replacements in the Study Year. Remaining unallocated funds are next allocated to the Projected Replacements in subsequent years in chronological order until the total of Projected Replacements in the next year is greater than the unallocated funds. Projected Replacements in this year are partially funded with each replacement receiving percentage funding. The percentage of funding is calculated by dividing the unallocated funds by the total of Projected Replacements in the partially funded year.

At Westhaven HOA the Beginning Balance funds all Scheduled Replacements in the Study Year through 2016 and provides partial funding (33%) of replacements scheduled in 2017.
 - The next step is the allocation of the \$73,014 of 2015 Cash Flow Method Reserve Funding calculated in the Replacement Reserve Analysis. These funds are first allocated to fund the partially funded Projected Replacements and then to subsequent years in chronological order as outlined above.

At Westhaven HOA the Beginning Balance and the 2015 Replacement Reserve Funding, funds replacements through 2016 and partial funds (62.2%) replacements in 2017.
 - Allocations of the 2016 and 2017 Reserve Funding are done using the same methodology.
 - The Three-Year Replacement Funding Report details component by component allocations made by Chronological Allocation.

2015 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 53 Projected Replacements included in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of the 4 categories listed in TABLE CF-1 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 \$263,411 as of the first day of the Study Year, January 1, 2015.
- Total reserve funding (including the Beginning Balance) of \$336,425 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 2015 being accomplished in 2015 at a cost of \$149,367.

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.

2015 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF-1

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2015 BEGINNING BALANCE	2015 RESERVE FUNDING	2015 PROJECTED REPLACEMENTS	2015 END OF YEAR BALANCE
SITE COMPONENT	6 to 36 years	0 to 18 years	\$397,404	\$124,742	\$63,537	(\$51,387)	\$136,892
SITE COMPONENT (cont.)	10 to 60 years	0 to 30 years	\$254,556	\$126,716		(\$97,980)	\$28,736
SITE COMPONENT (cont.)	60 years	2 to 56 years	\$328,510	\$10,941	\$9,476		\$20,417
TOT LOT and MP COURT	15 to 20 years	1 to 12 years	\$24,065	\$1,012			\$1,012

2016 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 53 Projected Replacements included in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of the 4 categories listed in TABLE CF-2 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 \$187,057 on January 1, 2016.
- Total reserve funding (including the Beginning Balance) of \$409,438 in 2015 through 2016.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2016 being accomplished in 2016 at a cost of \$29,748.

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

2016 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF-2

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2016 BEGINNING BALANCE	2016 RESERVE FUNDING	2016 PROJECTED REPLACEMENTS	2016 END OF YEAR BALANCE
SITE COMPONENT	6 to 36 years	1 to 29 years	\$397,404	\$136,892	\$63,537		\$200,429
SITE COMPONENT (cont.)	10 to 60 years	0 to 59 years	\$254,556	\$28,736		(\$28,736)	
SITE COMPONENT (cont.)	60 years	1 to 55 years	\$328,510	\$20,417	\$9,476		\$29,894
TOT LOT and MP COURT	15 to 20 years	0 to 11 years	\$24,065	\$1,012		(\$1,012)	

2017 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 53 Projected Replacements included in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of the 4 categories listed in TABLE CF-3 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 \$230,323 on January 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$482,452 in 2015 to 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2017 being accomplished in 2017 at a cost of \$253,110.

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

2017 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF-3

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2017 BEGINNING BALANCE	2017 RESERVE FUNDING	2017 PROJECTED REPLACEMENTS	2017 END OF YEAR BALANCE
SITE COMPONENT	6 to 36 years	0 to 28 years	\$397,404	\$200,429	\$54,329	(\$220,259)	\$34,500
SITE COMPONENT (cont.)	10 to 60 years	1 to 58 years	\$254,556		\$14,674		\$14,674
SITE COMPONENT (cont.)	60 years	0 to 54 years	\$328,510	\$29,894	\$2,957	(\$32,851)	
TOT LOT and MP COURT	15 to 20 years	1 to 19 years	\$24,065		\$1,053		\$1,053

CASH FLOW METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT

TABLE CF-4 below details the allocation of the \$263,411 Beginning Balance, as reported by the Association and the \$219,041 of Replacement Reserve Funding calculated by the Cash Flow Method in 2015 to 2017, to the 53 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 \$263,411 on January 1, 2015.
- Replacement Reserves on Deposit totaling \$187,057 on January 1, 2016.
- Replacement Reserves on Deposit totaling \$230,323 on January 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$482,452 in 2015 to 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2015 to 2017 being accomplished as scheduled in the Replacement Reserve Inventory at a cost of \$432,225.

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.

[illegible]

[illegible]

COMPONENT METHOD ACCOUNTING SUMMARY

This Westhaven HOA - Component Method Accounting Summary is an attachment to the Westhaven HOA - Replacement Reserve Study dated Revised September 15, 2014 and is for use by accounting and reserve professionals experienced in Association funding and accounting principals. This Summary consists of four reports, the 2015, 2016, and 2017 Component Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- COMPONENT METHOD CATEGORY FUNDING REPORT, 2015, 2016, and 2017. Each of the 53 Projected Replacements listed in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of 4 categories. The following information is summarized by category in each report:
 - Normal Economic Life and Remaining Economic Life of the Projected Replacements.
 - Cost of all Scheduled Replacements in each category.
 - Replacement Reserves on Deposit allocated to the category at the beginning and end of the report period.
 - Cost of Projected Replacements in the report period.
 - Recommended Replacement Reserve Funding allocated to the category during the report period as calculated by the Component Method.
- THREE-YEAR REPLACEMENT FUNDING REPORT. This report details the allocation of the \$263,411 Beginning Balance (at the start of the Study Year) and the \$396,799 of additional Replacement Reserve funding in 2015 through 2017 (as calculated in the Replacement Reserve Analysis) to each of the 53 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using the Component Method as outlined in the Replacement Reserve Analysis. The calculated data includes:
 - Identification and estimated cost of each Projected Replacement schedule in years 2015 through 2017.
 - Allocation of the \$263,411 Beginning Balance to the Projected Replacements by the Component Method.
 - Allocation of the \$396,799 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2015 through 2017, by the Component Method.

2015 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 53 Projected Replacements included in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of the 4 categories listed in TABLE CM-1 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 \$263,411 as of the first day of the Study Year, January 1, 2015.
- Total reserve funding (including the Beginning Balance) of \$453,612 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 2015 being accomplished in 2015 at a cost of \$149,367.

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.

2015 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM-1							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2015 BEGINNING BALANCE	2015 RESERVE FUNDING	2015 PROJECTED REPLACEMENTS	2015 END OF YEAR BALANCE
SITE COMPONENT	6 to 36 years	0 to 18 years	\$397,404	\$125,181	\$93,036	\$51,387	\$166,830
SITE COMPONENT (cont.)	10 to 60 years	0 to 30 years	\$254,556	\$68,378	\$78,668	\$97,980	\$49,066
SITE COMPONENT (cont.)	60 years	2 to 56 years	\$328,510	\$65,287	\$16,251		\$81,538
TOT LOT and MP COURT	15 to 20 years	1 to 12 years	\$24,065	\$4,564	\$2,246		\$6,811

2016 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 53 Projected Replacements included in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of the 4 categories listed in TABLE CM-2 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 \$304,245 on January 1, 2016.
- Total reserve funding (including the Beginning Balance) of \$560,944 in 2015 through 2016.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2016 being accomplished in 2016 at a cost of \$29,748.

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

2016 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM-2

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2016 BEGINNING BALANCE	2016 RESERVE FUNDING	2016 PROJECTED REPLACEMENTS	2016 END OF YEAR BALANCE
SITE COMPONENT	6 to 36 years	1 to 29 years	\$397,404	\$166,830	\$67,480		\$234,309
SITE COMPONENT (cont.)	10 to 60 years	0 to 59 years	\$254,556	\$49,066	\$21,355	\$28,736	\$41,685
SITE COMPONENT (cont.)	60 years	1 to 55 years	\$328,510	\$81,538	\$16,251		\$97,790
TOT LOT and MP COURT	15 to 20 years	0 to 11 years	\$24,065	\$6,811	\$2,246	\$1,012	\$8,045

2017 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 53 Projected Replacements included in the Westhaven HOA Replacement Reserve Inventory has been assigned to one of the 4 categories listed in TABLE CM-3 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 \$381,829 on January 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$660,210 in 2015 to 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2017 being accomplished in 2017 at a cost of \$253,110.

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

2017 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM-3

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2017 BEGINNING BALANCE	2017 RESERVE FUNDING	2017 PROJECTED REPLACEMENTS	2017 END OF YEAR BALANCE
SITE COMPONENT	6 to 36 years	0 to 28 years	\$397,404	\$234,309	\$67,480	\$220,259	\$81,530
SITE COMPONENT (cont.)	10 to 60 years	1 to 58 years	\$254,556	\$41,685	\$13,563		\$55,248
SITE COMPONENT (cont.)	60 years	0 to 54 years	\$328,510	\$97,790	\$16,251	\$32,851	\$81,190
TOT LOT and MP COURT	15 to 20 years	1 to 19 years	\$24,065	\$8,045	\$1,972		\$10,017

COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT

TABLE CM-4 below details the allocation of the \$263,411 Beginning Balance, as reported by the Association and the \$396,799 of Replacement Reserve Funding calculated by the Cash Flow Method in 2015 to 2017, to the 53 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 \$263,411 on January 1, 2015.
- Replacement Reserves on Deposit totaling \$304,245 on January 1, 2016.
- Replacement Reserves on Deposit totaling \$381,829 on January 1, 2017.
- Total Replacement Reserve funding (including the Beginning Balance) of \$660,210 in 2015 to 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2015 to 2017 being accomplished as scheduled in the Replacement Reserve Inventory at a cost of \$432,225.

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 CM-4

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2015 Reserve Funding	2015 Projected Replacements	2015 End of Year Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance
SITE COMPONENT												
1	Asphalt pavement, seal coat	25,913	10,300	15,613	(25,913)		4,319		4,319	4,319		8,638
2	Asphalt pavement, mill & overlay	220,259	72,956	49,101		122,057	49,101		171,158	49,101	(220,259)	
3	Asphalt path, seal coat	390		56		56	56		111	56		167
4	Asphalt path, overlay	5,285	2,100	3,184	(5,285)		294		294	294		587
5	Stamped concrete roadway	14,760	5,867	8,893	(14,760)		492		492	492		984
6	Repoint brick, grouted	5,430	2,158	3,272	(5,430)		302		302	302		603
7	Brick grouted, replace	14,118	2,650	604		3,253	604		3,857	604		4,461
8	Entrance sign, refurbish	2,500	795	284		1,079	284		1,363	284		1,647
9	Entrance features, refurbish	13,800	4,388	1,569		5,957	1,569		7,525	1,569		9,094
10	Small trellis	4,200	751	314		1,065	314		1,378	314		1,692
11	Large trellis	5,150	921	384		1,306	384		1,690	384		2,074
12	Site lighting	37,600	10,675	2,692		13,368	2,692		16,060	2,692		18,753
13	Irrigation system controllers	2,500	596	476		1,072	476		1,548	476		2,024
14	Irrigation system piping - 8 zone	32,000	11,023	5,244		16,267	5,244		21,512	5,244		26,756
15	Storm water system	13,500		1,350		1,350	1,350		2,700	1,350		4,050
SITE COMPONENT (cont.)												
16	Wood retaining wall (PTL) (20%)	13,440	4,487	2,238		6,726	2,238		8,964	2,238		11,202
17	Wood retaining wall (PTL) (20%)	13,440	3,419	1,113		4,532	1,113		5,646	1,113		6,759
18	Wood retaining wall (PTL) (20%)	13,440	2,351	792		3,143	792		3,935	792		4,727
19	Wood retaining wall (PTL) (20%)	13,440	1,282	640		1,922	640		2,562	640		3,202
20	Wood retaining wall (PTL) (20%)	13,440	214	551		765	551		1,316	551		1,867
21	Concrete block retaining wall	15,800	1,413	464		1,877	464		2,341	464		2,805
22	Brick privacy wall, repoint (10%)	19,240		1,749		1,749	1,749		3,498	1,749		5,247
23	Brick privacy wall, restore	96,200	38,237	57,963	(96,200)		1,603		1,603	1,603		3,207
24	2-Rail wood fence, storm water pond	1,780	708	1,072	(1,780)		119		119	119		237
25	Wood fence, Westmore Ct	15,552	4,636	2,183		6,819	2,183		9,002	2,183		11,186
26	Wood fence, square, Old Keene Mill	9,632	3,446	3,093		6,539	3,093	(9,632)		482		482
27	Wood fence, arched, Old Keene Mill	19,104	6,834	6,135		12,969	6,135	(19,104)		955		955
28	Wood fence, painted	5,568	996	416		1,412	416		1,827	416		2,243
29	Wood fence, by single family homes	4,480	356	258		614	258		872	258		1,129
SITE COMPONENT (cont.)												
30	Concrete sidewalk (6%)	15,708	5,931	3,259		9,190	3,259		12,449	3,259	(15,708)	
31	Concrete sidewalk (6%)	15,708	5,307	1,156		6,463	1,156		7,618	1,156		8,774
32	Concrete sidewalk (6%)	15,708	4,683	735		5,418	735		6,153	735		6,888
33	Concrete sidewalk (6%)	15,708	4,058	555		4,613	555		5,168	555		5,723
34	Concrete sidewalk (6%)	15,708	3,434	455		3,889	455		4,343	455		4,798
35	Concrete sidewalk (6%)	15,708	2,810	391		3,200	391		3,591	391		3,982
36	Concrete sidewalk (6%)	15,708	2,185	347		2,532	347		2,879	347		3,225
37	Concrete sidewalk (6%)	15,708	1,561	314		1,875	314		2,190	314		2,504
38	Concrete sidewalk (6%)	15,708	937	290		1,226	290		1,516	290		1,805
39	Concrete sidewalk (6%)	15,708	312	270		582	270		852	270		1,122

COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CM-4 cont'd

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2015 Reserve Funding	2015 Projected Replacements	2015 End of Year Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance
40	Concrete curb & gutter (6%)	17,143	6,473	3,557		10,030	3,557		13,586	3,557	(17,143)	
41	Concrete curb & gutter (6%)	17,143	5,792	1,261		7,053	1,261		8,314	1,261		9,576
42	Concrete curb & gutter (6%)	17,143	5,110	802		5,913	802		6,715	802		7,517
43	Concrete curb & gutter (6%)	17,143	4,429	605		5,034	605		5,640	605		6,245
44	Concrete curb & gutter (6%)	17,143	3,748	496		4,244	496		4,740	496		5,236
45	Concrete curb & gutter (6%)	17,143	3,066	427		3,493	427		3,919	427		4,346
46	Concrete curb & gutter (6%)	17,143	2,385	378		2,763	378		3,142	378		3,520
47	Concrete curb & gutter (6%)	17,143	1,703	343		2,047	343		2,390	343		2,733
48	Concrete curb & gutter (6%)	17,143	1,022	316		1,338	316		1,654	316		1,970
49	Concrete curb & gutter (6%)	17,143	341	295		635	295		930	295		1,225
TOT LOT and MP COURT												
50	Tot lot - Play structure	15,000	2,087	993		3,080	993		4,073	993		5,067
51	Tot lot - wood border	1,053	307	187		493	187		680	187		866
52	Tot lot - wood railing	1,012	362	325		687	325	(1,012)		51		51
53	MP court - base asphalt	7,000	1,809	742		2,550	742		3,292	742		4,033

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 U.S. Census, there were 130,000 Community Associations in 1990. Community Associations Institute (CAI), a national trade association, estimates there were more than 200,000 Community Associations in the year 2000, and that the number of Community Associations will continue to multiply.

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

2. REPLACEMENT RESERVE STUDY

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

- **Replacement Reserve Study Introduction.** The introduction provides a description of the property, reviews the intent of the Replacement Reserve Study, and lists documents and site evaluations upon which the Replacement Reserve Study is based.
- **Section A Replacement Reserve Analysis.** Many components owned by the Association have a limited life and require periodic replacement. Therefore, it is essential the Association have a financial plan that provides funding for the timely replacement of these components in order to protect the safety, appearance, and value of the community. In conformance with American Institute of Certified Public Accountant guidelines; 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 two generally accepted accounting methods; the Cash Flow Method and the Component Method. Section A Replacement Reserve Analysis includes graphic and tabular presentations of these methods and current Association funding.
- **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.
- **Section E Attachments.** The Appendix is provided as an attachment to the Replacement Reserve Study. Additional attachments may include supplemental photographs to document conditions at the property and additional information specific to the property cited in the Conditions Assessment (i.e. Consumer Product Safety Commission, Handbook for Public Playground Safety, information on segmental retaining walls, manufacturer recommendations for asphalt shingles or siding, etc).

3. METHODS OF ANALYSIS

The Replacement Reserve industry generally recognizes two different methods of accounting for Replacement Reserve Analysis. 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:

- **Component Method.** This method is a time tested mathematical model developed by HUD in the early 1980s. It 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.

- **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. This method usually results in a calculated requirement for annual contribution somewhat less than that arrived at by the Component Method of analysis.

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, which is less than that, arrived at by the Component Method.

- **Adjusted Cash Flow Analysis.** This program has the ability to modify the Cash Flow Method to take into account forecasted inflation and interest rates, thereby producing an Adjusted Cash Flow Analysis. Attempting to forecast future inflation and interest rates and the impact of changing technology is highly tenuous. Therefore, in most cases it is preferable to make a new schedule periodically rather than attempt to project far into the future. We will provide more information on this type of analysis upon request.

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.

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

Estimated Remaining Economic Life. Used in the Normal Replacement Schedules, this term is the number of years until the current item is expected to need replacement. Normally, this number would be considered 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.

Incremental Replacement Item. Incremental replacement refers to an inventory component that will be replaced in portions over the life of the study rather than in its entirety, as distinguished below, see Normal Replacement Item.

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

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

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

Normal Replacement Item. A component of the property that is replaced in its entirety. (As distinguished from an Incremental Replacement Item, see above.)

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

Number of Years of the Study. The numbers of years into the future for which expenditures are projected and reserve levels calculated. This number should be large enough to include the projected replacement of every item on the schedule, at least once. This study covers a 40-year period.

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

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

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

Replacement Reserve Study. An analysis of all of the components of the common property of the Association for which a need for replacement should be anticipated within the economic life of the property as a whole. The analysis involves estimation for each component of its estimated Replacement Cost, Estimated Economic Life, and Estimated Life Left. The objective of the study is to calculate a recommended annual contribution to the Association's Replacement Reserve Fund.

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

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

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

EA: each FT: feet LS: lump sum PR: pair SF: square feet SY: square yard

What is a Reserve Study?
Who are we?



<http://bcove.me/nc0o69t7>

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



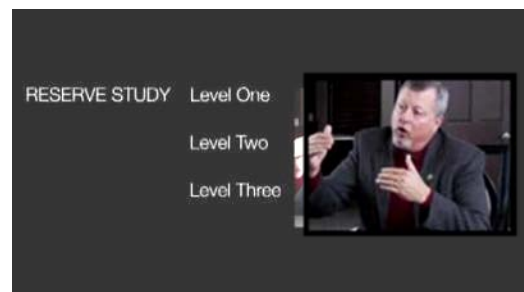
<http://bcove.me/stt373hj>

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



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

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



<http://bcove.me/ixis1yxm>

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



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

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



<http://bcove.me/fazwdk3h>

clients?

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



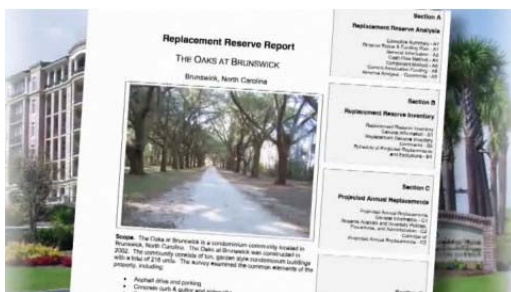
<http://bcove.me/n6nwnktv>

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



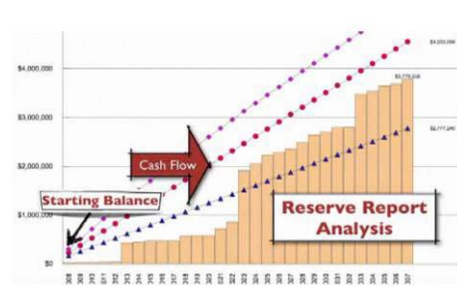
<http://bcove.me/2vfh1tz>

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



<http://bcove.me/wb2fugb1>

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



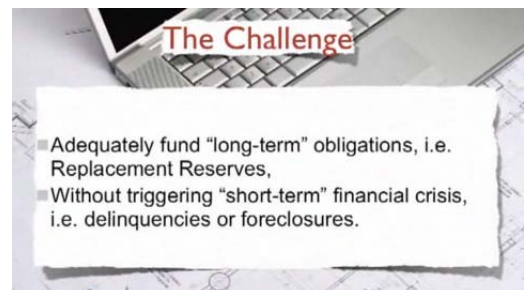
<http://bcove.me/7buer3n8>

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



<http://bcove.me/s2tmtj9b>

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



<http://bcove.me/iqul31vq>