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SAMPLE RESERVE STUDY REPORT

Kay Condominium



APRA



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SAMPLE REPORT

Note: This sample report is based on an actual Replacement Reserve Study conducted for a real facility. Please note, however, that the name, location, results, and other identifying features of this report have been intentionally altered to suit the purpose of a sample and protect the confidentiality of the Client.

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REPLACEMENT RESERVE REPORT

KAY CONDOMINIUM



Description. Kay Condominium is a mixed-use condominium community located in Washington, DC, which consists of a single high-rise building containing 134 multi-use units. The survey examined the common elements of the property, including:

- Concrete walkways, ramps, and other slabs.
- Building exteriors, including roofing, masonry, trim work, windows, and doors.
- Common lobby area and other common interior amenities.
- Under-building parking.

Level of Service. This study has been performed as a Level I, 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 component inventory was established based on information regarding commonly owned components provided by the community manager and upon quantities derived from field measurement and/or quantity takeoffs from to-scale engineering drawings. The condition of all commonly owned components was ascertained from a site visit and the visual inspection of each component by the Analyst. The life expectancy and the value of the components are provided based in part on these observations. The fund status and funding plan have been derived from analysis of this data.

Section A

Replacement Reserve Analysis

Executive Summary - A1
General Information - A2
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Section B

Replacement Reserve Inventory

Replacement Reserve Inventory
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Section C

Projected Annual Replacements

Projected Annual Replacements
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Section D

Condition Assessment

Appendix

Accounting Summary - CF1
Component Method - CM1

Overview, Standard Terms, and Definitions
Video Answers to Frequently Asked Questions

Sample

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 Kay Condominium Association (hereinafter called the Association) with an inventory of the common community facilities and infrastructure components that require periodic replacement. The Study includes a general view of the condition of these items and an effective financial plan to fund projected periodic replacements.

- **Inventory of Items Owned by the Association.** Section B Replacement Reserve Inventory 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 Replacement Reserve Inventory includes our estimates of the normal economic life and the remaining economic life for the projected replacements. Section C Calendar of Projected Annual Replacements provides a year-by-year listing of the projected replacements. Section D Condition Assessment provides additional detail for items that are unique or deserving of attention because of their condition or the manner in which they have been treated in this Study.
- **Financial Plan.** The Association has a fiduciary responsibility to protect the appearance, value, and safety of the property and it is therefore essential the Association have a financial plan that provides funding for the projected replacements. In conformance with American Institute of Certified Public Accountant guidelines, Section A, Replacement Reserve Analysis evaluates the current funding of Replacement Reserves as reported by the Association and recommends annual funding of Replacement Reserves by the Cash Flow Method. Section A, Replacement Reserve Analysis includes graphic and tabular presentations of the Association's current funding and the recommended funding based on the Cash Flow Method. An Executive Summary of these calculations is provided on Page A1. The alternative Component Method of funding is provided in the Appendix.

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

- The Request for Proposal submitted and executed by the Association.
- Our visual evaluations and measurements were performed on February 1, 2015. Miller-Dodson Associates visually inspected the common elements of the property in order to ascertain the remaining useful life and the replacement costs of these components.

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

Current Funding. This reserve study has been prepared for Fiscal Year 2016 covering the period from January 1, 2016 to December 31, 2016. The Replacement Reserves on deposit as of January 1, 2016 are anticipated to be \$250,000. The planned contribution to reserves for the Fiscal Year is \$100,000. The balance and contribution figures have been supplied by Community Management and confirmation or audit of these figures is beyond the scope of this 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 Management, who provided helpful insight into the current operations at the property.

Sample

Analyst's Credentials. Mr. James W. Dodson, Jr. holds a Bachelors Degree in Architectural Engineering from the University of Texas and a Masters Degree in Civil Engineering from Stanford University. He has attended the Program for Management Development at Harvard Graduate School of Business. Mr. Dodson has been a Registered Professional Engineer in the State of Texas from 1972 to 1994, and has managed construction projects up to \$100,000,000 in scope for a variety of private sector clients and government employers. He has been certified as a both a Professional Reserve Analyst by APRA and a Reserve Specialist by the CAI. He is a Principal for Miller - Dodson Associates, Inc. In this capacity, he has performed and supervised over 5,000 Reserve Studies for clients of Miller - Dodson Associates.

Respectfully submitted,



James W. Dodson, Jr. PRA, RS
Principal

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EXECUTIVE SUMMARY

The Kay Condominium Replacement Reserve Analysis uses the Cash Flow Method (CFM) to calculate Replacement Reserve funding for the periodic replacement of the 71 Projected Replacements identified in the Replacement Reserve Inventory.

\$196,677

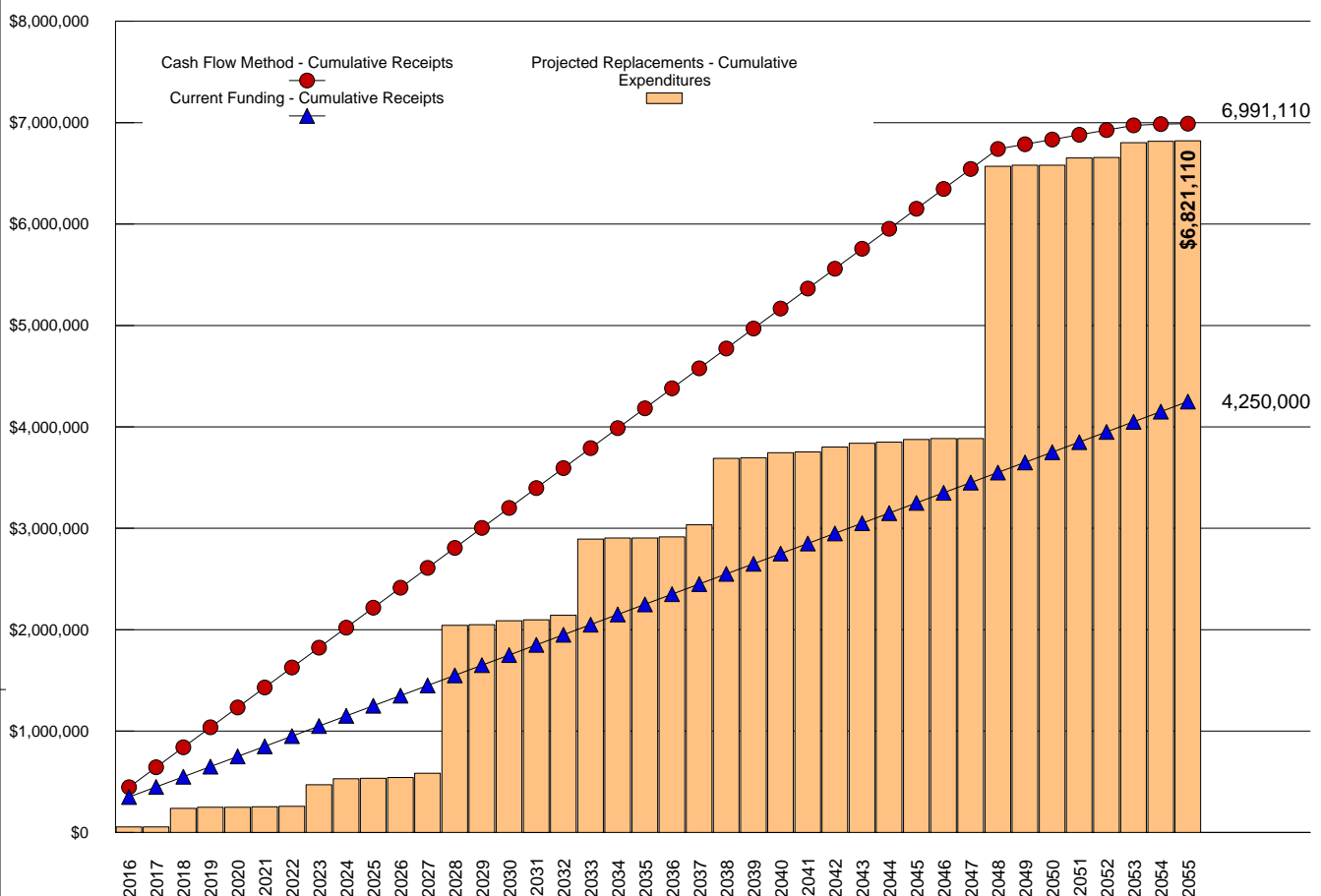
RECOMMENDED REPLACEMENT RESERVE FUNDING FOR THE STUDY YEAR, 2016

\$122.31 Per unit (average), minimum monthly funding of Replacement Reserves

We recommend the Association adopt a Replacement Reserve Funding Plan based on the annual funding recommendation above. Inflation adjusted funding for subsequent years is shown on Page A5.

Kay Condominium reports a Starting Balance of \$250,000 and Annual Funding totaling \$100,000. Current funding is inadequate to fund the \$6,821,110 of Projected Replacements scheduled in the Replacement Reserve Inventory over the 40-year Study Period. See Page A3 for a more detailed evaluation.

#1 - Cumulative Replacement Reserve Funding and Expenditures Graph



The Current Funding Objective as calculated by the Component Method (Fully Funded) is \$1,242,321 making the reserve account 20.1% funded. See the Appendix for more information on this method.

Sample

REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION

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

2016 STUDY YEAR

The Association reports that their accounting year begins on January 1, and the Study Year, the first year evaluated by the Replacement Reserve Analysis, begins on January 1, 2016.

40 Years STUDY PERIOD

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

\$250,000 STARTING BALANCE

The Association reports Replacement Reserves on Deposit totaling \$250,000 at the start of the Study Year.

Level One LEVEL OF SERVICE

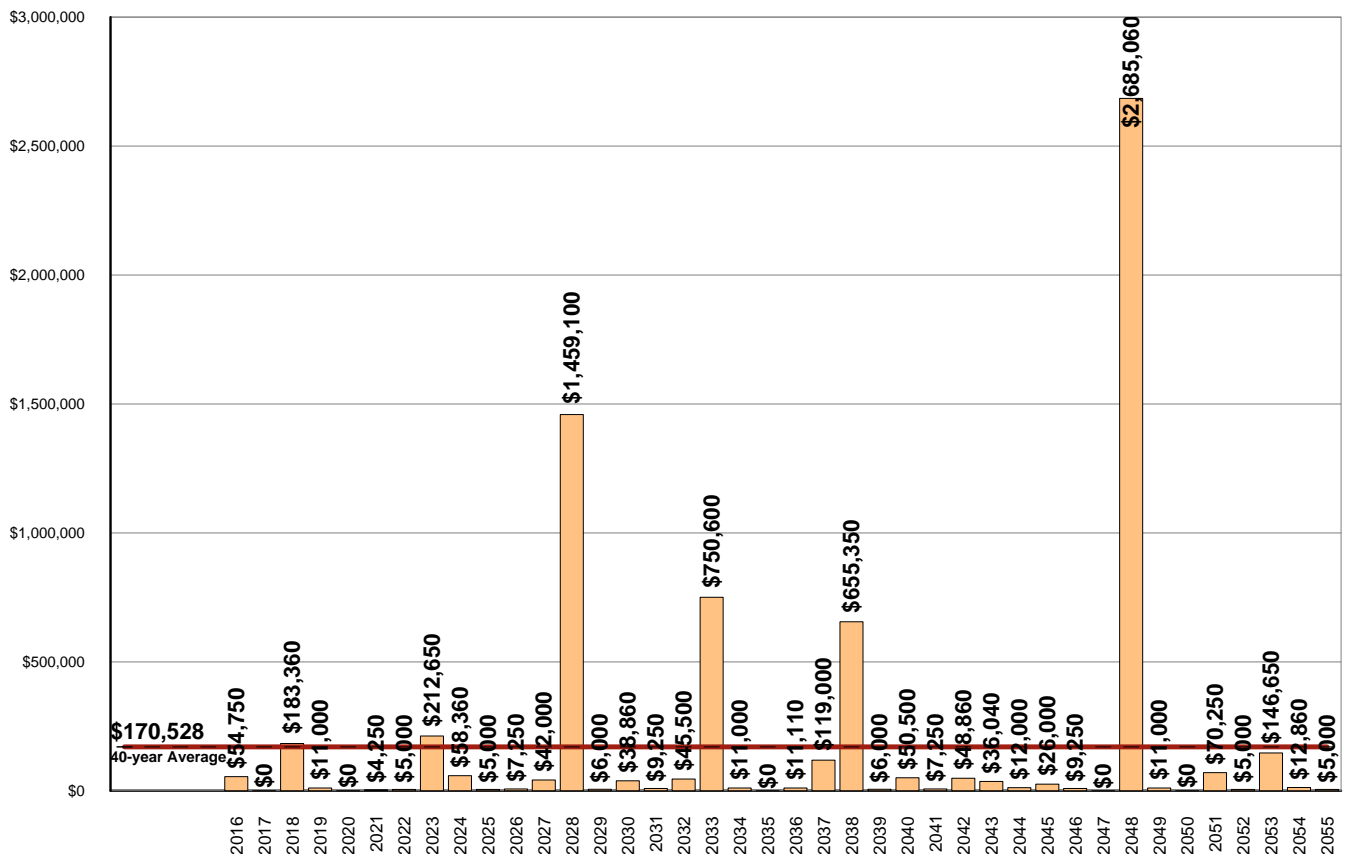
The Replacement Reserve Inventory has been developed in compliance with the National Reserve Study Standards for a Level One Study, as defined by the Community Associations Institute (CAI).

\$6,821,110 REPLACEMENT RESERVE INVENTORY - PROJECTED REPLACEMENTS

The Kay Condominium Replacement Reserve Inventory identifies 71 items that will require periodic replacement, that are to be funded from Replacement Reserves. We estimate the cost of these replacements will be \$6,821,110 over the 40-year Study Period. The Projected Replacements are divided into 14 major categories starting on Page B3. Pages B1-B2 provide detailed information on the Replacement Reserve Inventory.

#2 - Annual Expenditures for Projected Replacements Graph

This graph shows annual expenditures for Projected Replacements over the 40-year Study Period. The red line shows the average annual expenditure of \$170,528. Section C provides a year by year Calendar of these expenditures.



Sample

UPDATING

UPDATING OF THE FUNDING PLAN

The Association has a responsibility to review the Funding Plan annually. The review should include a comparison and evaluation of actual reserve funding with recommended levels shown on Page A4 and A5. The Projected Replacements listed on Page C2 should be compared with any replacements accomplished and funded from Replacement Reserves. Discrepancies should be evaluated and if necessary, the Reserve Study should be updated or a new study commissioned. We recommend annual increases in replacement reserve funding to account for the impact of inflation. Inflation Adjusted Funding is discussed on Page A5.

UPDATING OF THE REPLACEMENT RESERVE STUDY

At a minimum, the Replacement Reserve Study should be professionally updated every three to five years or after completion of a major replacement project. Updating should also be considered if during the annual review of the Funding Plan, discrepancies are noted between projected and actual reserve funding or replacement costs. Updating may also be necessary if there is a meaningful discrepancy between the actual inflation rate and the inflation rate used for the Inflation Adjusted Funding of Replacement Reserves on Page A5.

ANNUAL EXPENDITURES AND CURRENT FUNDING

The annual expenditures that comprise the \$6,821,110 of Projected Expenditures over the 40-year Study Period and the impact of the Association continuing to fund Replacement Reserves at the current level are detailed in Table 3.

#3 - Table of Annual Expenditures and Current Funding Data - Years 1 through 40										
Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Starting Balance	\$250,000									
Projected Replacements	(\$54,750)		(\$183,360)	(\$11,000)		(\$4,250)	(\$5,000)	(\$212,650)	(\$58,360)	(\$5,000)
Annual Deposit	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
End of Year Balance	\$295,250	\$395,250	\$311,890	\$400,890	\$500,890	\$596,640	\$691,640	\$578,990	\$620,630	\$715,630
Cumulative Expenditures	(\$54,750)	(\$54,750)	(\$238,110)	(\$249,110)	(\$249,110)	(\$253,360)	(\$258,360)	(\$471,010)	(\$529,370)	(\$534,370)
Cumulative Receipts	\$350,000	\$450,000	\$550,000	\$650,000	\$750,000	\$850,000	\$950,000	\$1,050,000	\$1,150,000	\$1,250,000
Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Projected Replacements	(\$7,250)	(\$42,000)	(\$1,459,100)	(\$6,000)	(\$38,860)	(\$9,250)	(\$45,500)	(\$750,600)	(\$11,000)	
Annual Deposit	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
End of Year Balance	\$808,380	\$866,380	(\$492,720)	(\$398,720)	(\$337,580)	(\$246,830)	(\$192,330)	(\$842,930)	(\$753,930)	(\$653,930)
Cumulative Expenditures	(\$541,620)	(\$583,620)	(\$2,042,720)	(\$2,048,720)	(\$2,087,580)	(\$2,096,830)	(\$2,142,330)	(\$2,892,930)	(\$2,903,930)	(\$2,903,930)
Cumulative Receipts	\$1,350,000	\$1,450,000	\$1,550,000	\$1,650,000	\$1,750,000	\$1,850,000	\$1,950,000	\$2,050,000	\$2,150,000	\$2,250,000
Year	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Projected Replacements	(\$11,110)	(\$119,000)	(\$655,350)	(\$6,000)	(\$50,500)	(\$7,250)	(\$48,860)	(\$36,040)	(\$12,000)	(\$26,000)
Annual Deposit	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
End of Year Balance	(\$565,040)	(\$584,040)	(\$1,139,390)	(\$1,045,390)	(\$995,890)	(\$903,140)	(\$852,000)	(\$788,040)	(\$700,040)	(\$626,040)
Cumulative Expenditures	(\$2,915,040)	(\$3,034,040)	(\$3,689,390)	(\$3,695,390)	(\$3,745,890)	(\$3,753,140)	(\$3,802,000)	(\$3,838,040)	(\$3,850,040)	(\$3,876,040)
Cumulative Receipts	\$2,350,000	\$2,450,000	\$2,550,000	\$2,650,000	\$2,750,000	\$2,850,000	\$2,950,000	\$3,050,000	\$3,150,000	\$3,250,000
Year	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
Projected Replacements	(\$9,250)		(\$2,685,060)	(\$11,000)		(\$70,250)	(\$5,000)	(\$146,650)	(\$12,860)	(\$5,000)
Annual Deposit	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
End of Year Balance	(\$535,290)	(\$435,290)	(\$3,020,350)	(\$2,931,350)	(\$2,831,350)	(\$2,801,600)	(\$2,706,600)	(\$2,753,250)	(\$2,666,110)	(\$2,571,110)
Cumulative Expenditures	(\$3,885,290)	(\$3,885,290)	(\$6,570,350)	(\$6,581,350)	(\$6,581,350)	(\$6,651,600)	(\$6,656,600)	(\$6,803,250)	(\$6,816,110)	(\$6,821,110)
Cumulative Receipts	\$3,350,000	\$3,450,000	\$3,550,000	\$3,650,000	\$3,750,000	\$3,850,000	\$3,950,000	\$4,050,000	\$4,150,000	\$4,250,000

EVALUATION OF CURRENT FUNDING

The evaluation of Current Funding (Starting Balance of \$250,000 & annual funding of \$100,000), is done in today's dollars with no adjustments for inflation or interest earned on Replacement Reserves. The evaluation assumes Replacement Reserves will only be used for the 71 Projected Replacements identified in the Replacement Reserve Inventory and that the Association will continue Annual Funding of \$100,000 throughout the 40-year Study Period.

Annual Funding of \$100,000 is approximately 51 percent of the \$196,677 recommended Annual Funding calculated by the Cash Flow Method for 2016, the Study Year.

Evaluation of the 71 Projected Replacements calculates an average annual expenditure over the next 40 years of \$170,528. Annual funding of \$100,000 is 59 percent of the average annual expenditure.

Our calculations identify funding shortfalls in 28 years of the Study Period with the initial shortfall in 2028. The largest shortfall, \$-3,020,350, occurs in 2038. All shortfalls can be seen and evaluated in Table 3 above.

In summary, Current Funding as reported by the Association and shown above, does not provide adequate funding for the \$6,821,110 of Projected Replacements scheduled in the Replacement Reserve Inventory over the Study Period.

Sample

CASH FLOW METHOD FUNDING

\$196,677

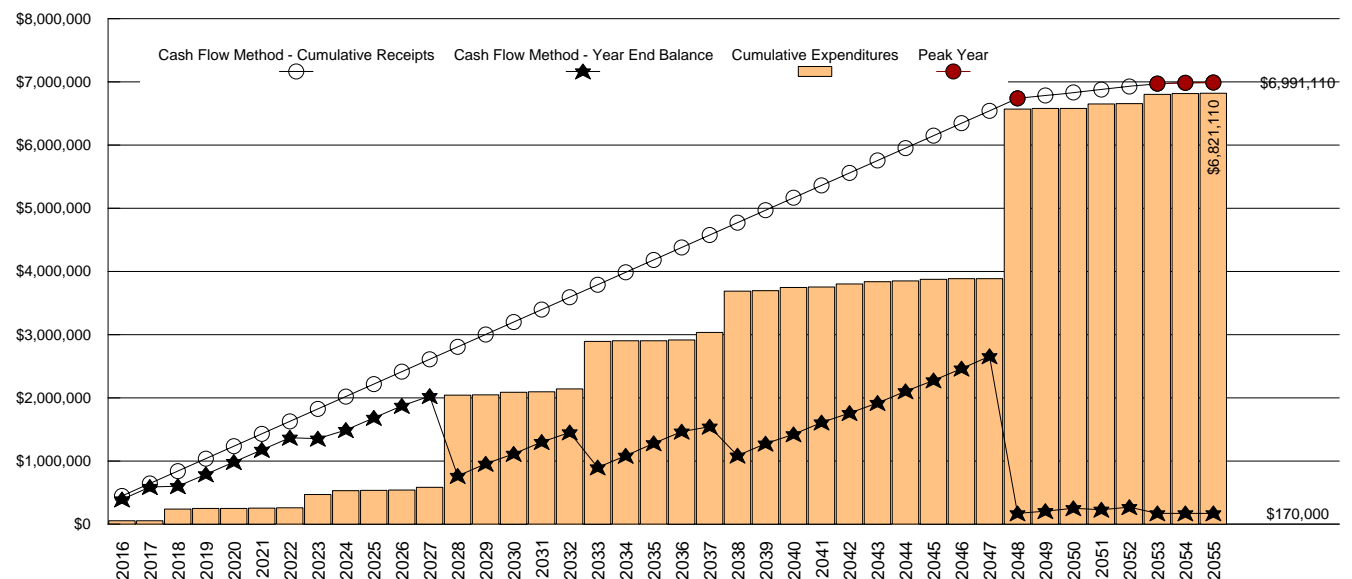
RECOMMENDED REPLACEMENT RESERVE FUNDING FOR 2016

\$122.31 Per unit (average), minimum monthly funding of Replacement Reserves

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

- **Peak Years.** The First Peak Year occurs in 2048 with Replacement Reserves on Deposit dropping to the Minimum Balance after the completion of \$6,570,350 of replacements from 2016 to 2048. Recommended funding declines from \$196,677 in 2048 to \$46,580 in 2049. Peak Years are identified in Chart 4 and Table 5.
- **Minimum Balance.** The calculations assume a Minimum Balance of \$170,000 in Replacement Reserves. This is approx. 12 months of average expenditures based on the \$170,528, 40-year average annual expenditure.
- **Cash Flow Method Study Period.** Cash Flow Method calculates funding for \$6,821,110 of expenditures over the 40-year Study Period. It does not include funding for any projects beyond 2055 and in 2055, the end of year balance will always be the Minimum Balance.

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



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

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Starting Balance	\$250,000									
Projected Replacements	(\$54,750)		(\$183,360)	(\$11,000)		(\$4,250)	(\$5,000)	(\$212,650)	(\$58,360)	(\$5,000)
Annual Deposit	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677
End of Year Balance	\$391,927	\$588,605	\$601,922	\$787,599	\$984,276	\$1,176,704	\$1,368,381	\$1,352,408	\$1,490,725	\$1,682,403
Cumulative Expenditures	\$54,750	\$54,750	\$238,110	\$249,110	\$249,110	\$253,360	\$258,360	\$471,010	\$529,370	\$534,370
Cumulative Receipts	\$446,677	\$643,355	\$840,032	\$1,036,709	\$1,233,386	\$1,430,064	\$1,626,741	\$1,823,418	\$2,020,095	\$2,216,773
Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Projected Replacements	(\$7,250)	(\$42,000)	(\$1,459,100)	(\$6,000)	(\$38,860)	(\$9,250)	(\$45,500)	(\$750,600)	(\$11,000)	
Annual Deposit	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677
End of Year Balance	\$1,871,830	\$2,026,507	\$764,085	\$954,762	\$1,112,579	\$1,300,006	\$1,451,184	\$897,261	\$1,082,938	\$1,279,615
Cumulative Expenditures	(\$541,620)	(\$583,620)	(\$2,042,720)	(\$2,048,720)	(\$2,087,580)	(\$2,096,830)	(\$2,142,330)	(\$2,892,930)	(\$2,903,930)	(\$2,903,930)
Cumulative Receipts	\$2,413,450	\$2,610,127	\$2,806,805	\$3,003,482	\$3,200,159	\$3,396,836	\$3,593,514	\$3,790,191	\$3,986,868	\$4,183,545
Year	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Projected Replacements	(\$11,110)	(\$119,000)	(\$655,350)	(\$6,000)	(\$50,500)	(\$7,250)	(\$48,860)	(\$36,040)	(\$12,000)	(\$26,000)
Annual Deposit	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677	\$196,677
End of Year Balance	\$1,465,183	\$1,542,860	\$1,084,187	\$1,274,865	\$1,421,042	\$1,610,469	\$1,758,286	\$1,918,924	\$2,103,601	\$2,274,278
Cumulative Expenditures	(\$2,915,040)	(\$3,034,040)	(\$3,689,390)	(\$3,695,390)	(\$3,745,890)	(\$3,753,140)	(\$3,802,000)	(\$3,838,040)	(\$3,850,040)	(\$3,876,040)
Cumulative Receipts	\$4,380,223	\$4,576,900	\$4,773,577	\$4,970,255	\$5,166,932	\$5,363,609	\$5,560,286	\$5,756,964	\$5,953,641	\$6,150,318
Year	2046	2047	1st Peak - 2048	2049	2050	2051	2052	2nd Peak - 2053	3rd Peak - 2054	4th Peak - 2055
Projected Replacements	(\$9,250)		(\$2,685,060)	(\$11,000)		(\$70,250)	(\$5,000)	(\$146,650)	(\$12,860)	(\$5,000)
Annual Deposit	\$196,677	\$196,677	\$196,677	\$46,580	\$46,580	\$46,580	\$46,580	\$46,580	\$12,860	\$5,000
End of Year Balance	\$2,461,705	\$2,658,383	\$170,000	\$205,580	\$252,160	\$228,490	\$270,070	\$170,000	\$170,000	\$170,000
Cumulative Expenditures	(\$3,885,290)	(\$3,885,290)	(\$6,570,350)	(\$6,581,350)	(\$6,581,350)	(\$6,651,600)	(\$6,656,600)	(\$6,803,250)	(\$6,816,110)	(\$6,821,110)
Cumulative Receipts	\$6,346,995	\$6,543,673	\$6,740,350	\$6,786,930	\$6,833,510	\$6,880,090	\$6,926,670	\$6,973,250	\$6,986,110	\$6,991,110

Sample

INFLATION ADJUSTED FUNDING

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

\$196,677 2016 - CASH FLOW METHOD RECOMMENDED FUNDING

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

\$206,152 2017 - INFLATION ADJUSTED FUNDING

A new analysis calculates 2017 funding based on three assumptions;

- Replacement Reserves on Deposit totaling \$391,927 on January 1, 2017.
- All 2016 Projected Replacements listed on Page C2 accomplished at a cost to Replacement Reserves less than \$54,750.
- Construction Cost Inflation of 4.50 percent in 2016.

The \$206,152 inflation adjusted funding in 2017 is a 4.82 percent increase over the non-inflation adjusted 2017 funding of \$196,677.

\$216,359 2018 - INFLATION ADJUSTED FUNDING

A new analysis calculates 2018 funding based on three assumptions;

- Replacement Reserves on Deposit totaling \$598,080 on January 1, 2018.
- No Expenditures from Replacement Reserves in 2017.

- Construction Cost Inflation of 4.50 percent in 2017.

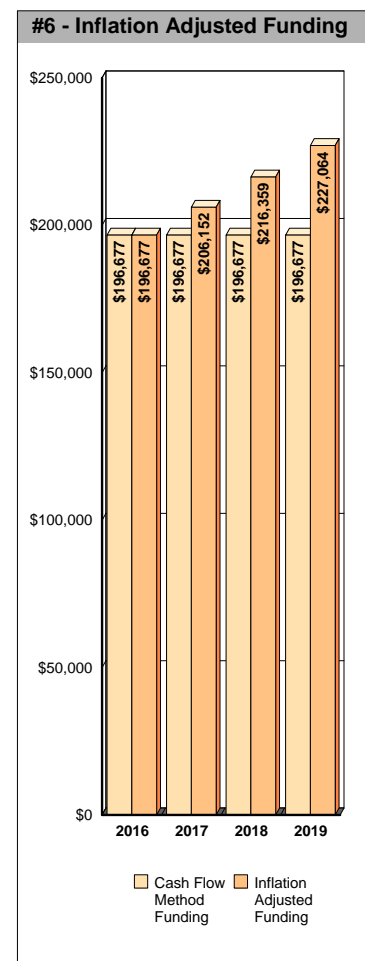
The \$216,359 inflation adjusted funding in 2018 is a 10.01 percent increase over the non-inflation adjusted 2018 funding of \$196,677.

\$227,064 2019 - INFLATION ADJUSTED FUNDING

A new analysis calculates 2019 funding based on three assumptions;

- Replacement Reserves on Deposit totaling \$614,205 on January 1, 2019.
- All 2018 Projected Replacements listed on Page C2 accomplished at a cost to Replacement Reserves less than \$200,234.
- Construction Cost Inflation of 4.50 percent in 2018.

The \$227,064 inflation adjusted funding in 2019 is a 15.45 percent increase over the non-inflation adjusted funding of \$196,677.



YEAR FIVE & BEYOND

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

INFLATION ADJUSTMENT

Prior to approving a budget based upon the 2017, 2018 and 2019 inflation adjusted funding calculations above, the 4.50 percent base rate of inflation used in our calculations should be compared to rates published by the Bureau of Labor Statistics. If there is a significant discrepancy (over 1 percent), contact Miller Dodson + Associates prior to using the Inflation Adjusted Funding.

INTEREST ON RESERVES

The recommended funding calculations do not account for interest earned on Replacement Reserves.

In 2016, based on a 1.00 percent interest rate, we estimate the Association may earn \$3,210 on an average balance of \$320,964, \$4,950 on an average balance of \$495,003 in 2017, and \$6,061 on \$606,142 in 2018. The Association may elect to attribute 100 percent of the earned interest to Reserves, resulting in a reduction in the 2016 funding from \$196,677 to \$193,468 (a 1.63 percent reduction), \$206,152 to \$201,202 in 2017 (a 2.40 percent reduction), and \$216,359 to \$210,297 in 2018 (a 2.80 percent reduction).

Sample

REPLACEMENT RESERVE STUDY - SUPPLEMENTAL COMMENTS

- Kay Condominium has 134 units. The type of property is a mixed use condominium.
- The Cash Flow Method calculates the minimum annual funding necessary to prevent Replacement Reserves from dropping below the Minimum Balance. Failure to fund at least the recommended levels may result in funding not being available for the Projected Replacements listed in the Replacement Reserve Inventory.
- The accuracy of the Replacement Reserve Analysis is dependent upon expenditures from Replacement Reserves being made ONLY for the 71 Projected Replacements specifically listed in the Replacement Reserve Inventory. The inclusion/exclusion of items from the Replacement Reserve Inventory is discussed on Page B1.

Sample

REPLACEMENT RESERVE INVENTORY GENERAL INFORMATION

Kay Condominium - Replacement Reserve Inventory identifies 106 items. Two types of items are identified, Projected Replacements and Excluded Items:

- **PROJECTED REPLACEMENTS.** 71 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 \$4,144,540. Replacements totaling \$3,876,040 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.** 35 of the items are Excluded Items, and expenditures for these items are NOT scheduled for funding from Replacement Reserves. The accuracy of the calculations made in the Replacement Reserve Analysis is dependent on expenditures NOT being made for Excluded Items. The Excluded Items are listed in the Replacement Reserve Inventory to identify specific items and categories of items that are not to be funded from Replacement Reserves. There are multiple categories of items that are typically excluded from funding by Replacement Reserves, including but not limited to:

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

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

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

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

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

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

- **CATEGORIES.** The 106 items included in the Kay Condominium Replacement Reserve Inventory are divided into 14 major categories. Each category is printed on a separate page, Pages B3 to B15.
- **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.

Sample

REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (cont'd)

- **INVENTORY DATA.** Each of the 71 Projected Replacements listed in the Replacement Reserve Inventory includes the following data:

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

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

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

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

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

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

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

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

Each of the 35 Excluded Items includes the Item Description, Units, and Number of Units. Many of the Excluded Items are listed as a 'Lump Sum' with a quantity of 1. For the Excluded Items, this indicates that all of the items identified by the 'Item Description' are excluded from funding by Replacement Reserves.

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

Sample

**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	Concrete flatwork (20%)	sf	700	\$9.80	30	2	\$6,860
2	Concrete flatwork (20%)	sf	700	\$9.80	30	8	\$6,860
3	Concrete flatwork (20%)	sf	700	\$9.80	30	14	\$6,860
4	Concrete flatwork (20%)	sf	700	\$9.80	30	20	\$6,860
5	Concrete flatwork (20%)	sf	700	\$9.80	30	26	\$6,860
6	UG building piping (allowance)	ls	1	\$25,000.00	25	17	\$25,000
7	Storm water mgmt (allowance)	ls	1	\$3,500.00	10	12	\$3,500

SITE COMPONENT - Replacement Costs - Subtotal \$62,800

**SITE COMPONENT
COMMENTS**

- Comprehensive drawings detailing the components of the underground systems listed above were not available for our review. We have included the estimated cost allowance based upon our experience with other similar facilities. In the future, this assumption and the estimated costs should be adjusted based upon actual experience.

Sample

**BUILDING EXTERIOR
 PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
8	Flat membrane roof	sf	11,100	\$17.00	20	12	\$188,700
9	Roof pavers	sf	6,700	\$5.00	20	12	\$33,500
10	Roof railing	ft	430	\$90.00	40	32	\$38,700
11	Terrace waterproofing membrane	sf	700	\$14.00	30	22	\$9,800
12	Terrace pavers	sf	700	\$5.00	30	22	\$3,500
13	Terrace privacy railing	ft	90	\$50.00	30	22	\$4,500
14	Terrace railing	ft	100	\$45.00	40	32	\$4,500
15	Repointing (10% allowance)	sf	7,800	\$18.50	20	12	\$144,300
16	Building caulking	ft	10,000	\$2.25	20	12	\$22,500
17	Unit windows	sf	17,800	\$50.00	40	32	\$890,000
18	Unit patio doors	ea	9	\$2,300.00	20	12	\$20,700
19	Store front	sf	2,500	\$45.00	30	22	\$112,500
20	Canopy, refurbish	sf	250	\$150.00	20	12	\$37,500
21	Solid exterior door (allowance)	ea	2	\$750.00	20	12	\$1,500
22	Exterior sconce lighting	ea	6	\$400.00	15	7	\$2,400
23	Misc exterior building light (allowance)	ea	12	\$250.00	5	2	\$3,000
24	Roof top furnishing (50% allowance)	ls	1	\$6,000.00	5	3	\$6,000
BUILDING EXTERIOR - Replacement Costs - Subtotal							\$1,523,600

**BUILDING EXTERIOR
 COMMENTS**

Sample

BUILDING EXTERIOR (cont.)
PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
25	Roll-up doors	sf	500	\$30.00	15	7	\$15,000
26	Garage door openers	ea	2	\$2,100.00	15	7	\$4,200
27	Garage seal coating (allowance)	sf	13,000	\$3.50	8	none	\$45,500
28	Garage lighting	sf	26,000	\$1.00	15	14	\$26,000
29	Garage ventilation (allowance)	sf	26,000	\$2.00	30	22	\$52,000
30	Garage Co2 system	sf	26,000	\$0.10	15	7	\$2,600

BUILDING EXTERIOR (cont.) - Replacement Costs - Subtotal \$145,300

BUILDING EXTERIOR (cont.)
COMMENTS

Sample

**BUILDING INTERIOR
 PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
31	Lobby, refurnish	sf	1,200	\$5.00	7	7	\$6,000
32	Lobby, refurbish/lighting//front desk	sf	1,200	\$50.00	14	7	\$60,000
33	Lobby, flooring (allowance)	sf	1,200	\$40.00	28	21	\$48,000
34	Mailbox	unit	134	\$160.00	35	27	\$21,440
35	Hallway carpet	sf	9,100	\$8.50	10	2	\$77,350
36	Hallway, refurbish & lighting	sf	9,100	\$10.00	20	12	\$91,000
37	Interior door lock (allowance)	ea	150	\$325.00	15	7	\$48,750
38	Club room carpet	sf	500	\$5.50	10	2	\$2,750
39	Club room, redecorate	sf	500	\$20.00	20	12	\$10,000
40	Powder room	ea	3	\$3,200.00	20	12	\$9,600
41	Multipurpose room (allowance)	sf	200	\$20.00	10	2	\$4,000
42	Fitness room, carpet	sf	1,000	\$4.25	5	none	\$4,250
43	Fitness room, refurbish	sf	1,000	\$3.00	15	10	\$3,000
44	Treadmill	ea	3	\$5,200.00	10	2	\$15,600
45	Elliptical	ea	2	\$4,800.00	10	2	\$9,600
46	Recumbent bike	ea	1	\$3,600.00	10	2	\$3,600
47	Isolation mussel group	ea	4	\$2,700.00	20	12	\$10,800
48	Fitness equip (10% refurb, allowance)	ls	1	\$4,000.00	5	2	\$4,000
BUILDING INTERIOR - Replacement Costs - Subtotal							\$429,740

**BUILDING INTERIOR
 COMMENTS**

Sample

BUILDING INTERIOR (cont.)
PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
49	Office (allowance)	sf	600	\$10.00	10	12	\$6,000
50	Office computer	ea	2	\$1,300.00	5	2	\$2,600

BUILDING INTERIOR (cont.) - Replacement Costs - Subtotal \$8,600

BUILDING INTERIOR (cont.)
COMMENTS

Sample

BUILDING SYSTEM
PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
51	Elevator cab & door, passenger	ea	2	\$80,100.00	20	12	\$160,200
52	Elevator, traction psngr, controls	ea	2	\$170,400.00	20	12	\$340,800
53	Elevator, traction psngr, mechanical	ea	2	\$85,200.00	40	32	\$170,400
54	Boiler system	ea	5	\$18,000.00	30	22	\$90,000
55	Cooling tower, replace	ea	1	\$180,000.00	25	17	\$180,000
56	Cooling tower, 10% refurbish	ea	1	\$18,000.00	10	2	\$18,000
57	Heat exchanger, refurbish	ea	1	\$75,000.00	40	32	\$75,000
58	Energy mgmt system	ea	1	\$42,000.00	15	11	\$42,000
59	Water conditioning system	ea	1	\$6,000.00	20	12	\$6,000
60	Large pump, rebuild (allowance)	ea	5	\$7,000.00	20	12	\$35,000
61	Water booster pump system (allow)	ea	1	\$22,000.00	20	12	\$22,000
62	Sump pump	ea	2	\$18,000.00	20	12	\$36,000
63	Package unit, roof top	ea	2	\$40,000.00	20	12	\$80,000
64	Common HVAC & air handler (allow)	ton	15	\$2,400.00	10	2	\$36,000

BUILDING SYSTEM - Replacement Costs - Subtotal \$1,291,400

BUILDING SYSTEM
COMMENTS

Sample

BUILDING SYSTEM (cont.)
PROJECTED REPLACEMENTS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
65	Miscl fan/pump/motor (allowance)	ls	1	\$5,000.00	3	none	\$5,000
66	Generator & switch gear, 150 Kw	ea	1	\$60,000.00	30	22	\$60,000
67	Trash compactor	ea	1	\$18,000.00	20	12	\$18,000
68	Security sys, 8 cameras & a recorder	ea	1	\$6,000.00	15	7	\$6,000
69	Entry system	ea	1	\$4,500.00	15	7	\$4,500
70	Building piping (allowance)	unit	134	\$4,000.00	25	17	\$536,000
71	Fire alarm/suppression (allowance)	unit	134	\$400.00	15	7	\$53,600

BUILDING SYSTEM (cont.) - Replacement Costs - Subtotal \$683,100

BUILDING SYSTEM (cont.)
COMMENTS

Sample

VALUATION EXCLUSIONS

EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Miscellaneous signage	ls	1				EXCLUDED
	Bollard/access control devices	ls	1				EXCLUDED
	Sprinkler head	ls	1				EXCLUDED
	Interior doors	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.

Sample

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 (\$)
	Masonry features	ls	1				EXCLUDED
	Building foundation(s)	ls	1				EXCLUDED
	Concrete floor slabs (interior)	ls	1				EXCLUDED
	Wall, floor, & roof structure	ls	1				EXCLUDED
	Electrical wiring	ls	1				EXCLUDED
	Trash chute	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.

Sample

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
	Unit interior	ls	1				EXCLUDED
	Unit HVAC system	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.

Sample

UTILITY EXCLUSIONS
EXCLUDED ITEMS

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

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.

Sample

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 (\$)
	Crack sealing of pavements	ls	1				EXCLUDED
	Painting of curbs	ls	1				EXCLUDED
	Striping of parking spaces	ls	1				EXCLUDED
	Numbering 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.

Sample

GOVERNMENT EXCLUSIONS
EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Government, roadways & parking	ls	1				EXCLUDED
	Government, sidewalks & curbs	ls	1				EXCLUDED
	Government, lighting	ls	1				EXCLUDED
	Government, stormwater mgmt.	ls	1				EXCLUDED

GOVERNMENT EXCLUSIONS
COMMENTS

- Government Exclusions. We have assumed that some of the improvements installed on property owned by the Association will be maintained by the state, county, or local government, or other association or other responsible entity. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- Excluded right-of-ways, including K Street, NW, 12th Street NW, and adjacent properties.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

Sample

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Sample

PROJECTED ANNUAL REPLACEMENTS GENERAL INFORMATION

CALENDAR OF ANNUAL REPLACEMENTS. The 71 Projected Replacements in the Kay Condominium Replacement Reserve Inventory whose replacement is scheduled to be funded from Replacement Reserves are broken down on a year-by-year basis, beginning on Page C2.

REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

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

Sample

PROJECTED REPLACEMENTS - YEARS 1 TO 3

Item	2016 - STUDY YEAR	\$	Item	2017 - YEAR 2	\$	Item	2018 - YEAR 3	\$
27	Garage seal coating (allowa	\$45,500				1	Concrete flatwork (20%)	\$6,860
42	Fitness room, carpet	\$4,250				23	Misc exterior building light (e	\$3,000
65	Miscl fan/pump/motor (allow	\$5,000				35	Hallway carpet	\$77,350
						38	Club room carpet	\$2,750
						41	Multipurpose room (allowan	\$4,000
						44	Treadmill	\$15,600
						45	Elliptical	\$9,600
						46	Recumbent bike	\$3,600
						48	Fitness equip (10% refurb, a	\$4,000
						50	Office computer	\$2,600
						56	Cooling tower, 10% refurbisl	\$18,000
						64	Common HVAC & air handl	\$36,000
Total Scheduled Replacements		\$54,750	No Scheduled Replacements			Total Scheduled Replacements		\$183,360

Sample

PROJECTED REPLACEMENTS - YEARS 4 TO 6

Item	2019 - YEAR 4	\$	Item	2020 - YEAR 5	\$	Item	2021 - YEAR 6	\$
24	Roof top furnishing (50% all	\$6,000				42	Fitness room, carpet	\$4,250
65	Miscl fan/pump/motor (allow	\$5,000						
Total Scheduled Replacements		\$11,000	No Scheduled Replacements			Total Scheduled Replacements		\$4,250

Sample

PROJECTED REPLACEMENTS - YEARS 10 TO 12

2025 - YEAR 10			2026 - YEAR 11			2027 - YEAR 12		
Item		\$	Item		\$	Item		\$
65	Misc fan/pump/motor (allow	\$5,000	42	Fitness room, carpet	\$4,250	58	Energy mgmt system	\$42,000
			43	Fitness room, refurbish	\$3,000			

Sample

PROJECTED REPLACEMENTS - YEARS 13 TO 15

Item	2028 - YEAR 13	\$	Item	2029 - YEAR 14	\$	Item	2030 - YEAR 15	\$
7	Storm water mgmt (allowanc	\$3,500	24	Roof top furnishing (50% all	\$6,000	3	Concrete flatwork (20%)	\$6,860
8	Flat membrane roof	\$188,700				28	Garage lighting	\$26,000
9	Roof pavers	\$33,500				31	Lobby, refurbish	\$6,000
15	Repointing (10% allowance)	\$144,300						
16	Building caulking	\$22,500						
18	Unit patio doors	\$20,700						
20	Canopy, refurbish	\$37,500						
21	Solid exterior door (allowanc	\$1,500						
23	Misc exterior building light (e	\$3,000						
35	Hallway carpet	\$77,350						
36	Hallway, refurbish & lighting	\$91,000						
38	Club room carpet	\$2,750						
39	Club room, redecorate	\$10,000						
40	Powder room	\$9,600						
41	Multipurpose room (allowanc	\$4,000						
44	Treadmill	\$15,600						
45	Elliptical	\$9,600						
46	Recumbent bike	\$3,600						
47	Isolation mussel group	\$10,800						
48	Fitness equip (10% refurb, a	\$4,000						
49	Office (allowance)	\$6,000						
50	Office computer	\$2,600						
51	Elevator cab & door, passen	\$160,200						
52	Elevator, traction psngr, con	\$340,800						
56	Cooling tower, 10% refurbish	\$18,000						
59	Water conditioning system	\$6,000						
60	Large pump, rebuild (allowa	\$35,000						
61	Water booster pump system	\$22,000						
62	Sump pump	\$36,000						
63	Package unit, roof top	\$80,000						
64	Common HVAC & air handle	\$36,000						
65	Miscl fan/pump/motor (allow	\$5,000						
67	Trash compactor	\$18,000						

Sample

PROJECTED REPLACEMENTS - YEARS 16 TO 18

[illegible]

Sample

PROJECTED REPLACEMENTS - YEARS 22 TO 24

Item	2037 - YEAR 22	\$	Item	2038 - YEAR 23	\$	Item	2039 - YEAR 24	\$			
31	Lobby, refurbish	\$6,000	7	Storm water mgmt (allowanc	\$3,500	24	Roof top furnishing (50% all	\$6,000			
32	Lobby, refurbish/lighting//fro	\$60,000	11	Terrace waterproofing meml	\$9,800						
33	Lobby, flooring (allowance)	\$48,000	12	Terrace pavers	\$3,500						
65	Misc fan/pump/motor (allow	\$5,000	13	Terrace privacy railing	\$4,500						
			19	Store front	\$112,500						
			22	Exterior sconce lighting	\$2,400						
			23	Misc exterior building light (ε	\$3,000						
			25	Roll-up doors	\$15,000						
			26	Garage door openers	\$4,200						
			29	Garage ventilation (allowanc	\$52,000						
			30	Garage Co2 system	\$2,600						
			35	Hallway carpet	\$77,350						
			37	Interior door lock (allowance	\$48,750						
			38	Club room carpet	\$2,750						
			41	Multipurpose room (allowanc	\$4,000						
			44	Treadmill	\$15,600						
			45	Elliptical	\$9,600						
			46	Recumbent bike	\$3,600						
			48	Fitness equip (10% refurb, a	\$4,000						
			49	Office (allowance)	\$6,000						
			50	Office computer	\$2,600						
			54	Boiler system	\$90,000						
			56	Cooling tower, 10% refurbisl	\$18,000						
			64	Common HVAC & air handl	\$36,000						
			66	Generator & switch gear, 15	\$60,000						
			68	Security sys, 8 cameras & a	\$6,000						
			69	Entry system	\$4,500						
			71	Fire alarm/suppression (allo'	\$53,600						
Total Scheduled Replacements			\$119,000	Total Scheduled Replacements			\$655,350	Total Scheduled Replacements			\$6,000

Sample

PROJECTED REPLACEMENTS - YEARS 25 TO 27

Item	2040 - YEAR 25	\$	Item	2041 - YEAR 26	\$	Item	2042 - YEAR 27	\$
27	Garage seal coating (allowa	\$45,500	42	Fitness room, carpet	\$4,250	5	Concrete flatwork (20%)	\$6,860
65	Miscl fan/pump/motor (allow	\$5,000	43	Fitness room, refurbish	\$3,000	58	Energy mgmt system	\$42,000
Total Scheduled Replacements		\$50,500	Total Scheduled Replacements		\$7,250	Total Scheduled Replacements		\$48,860

Sample

PROJECTED REPLACEMENTS - YEARS 31 TO 33

Item	2046 - YEAR 31	\$	Item	2047 - YEAR 32	\$	Item	2048 - YEAR 33	\$
42	Fitness room, carpet	\$4,250				1	Concrete flatwork (20%)	\$6,860
65	Miscl fan/pump/motor (allow	\$5,000				7	Storm water mgmt (allowanc	\$3,500
						8	Flat membrane roof	\$188,700
						9	Roof pavers	\$33,500
						10	Roof railing	\$38,700
						14	Terrace railing	\$4,500
						15	Repointing (10% allowance)	\$144,300
						16	Building caulking	\$22,500
						17	Unit windows	\$890,000
						18	Unit patio doors	\$20,700
						20	Canopy, refurbish	\$37,500
						21	Solid exterior door (allowanc	\$1,500
						23	Misc exterior building light (e	\$3,000
						27	Garage seal coating (allowa	\$45,500
						35	Hallway carpet	\$77,350
						36	Hallway, refurbish & lighting	\$91,000
						38	Club room carpet	\$2,750
						39	Club room, redecorate	\$10,000
						40	Powder room	\$9,600
						41	Multipurpose room (allowanc	\$4,000
						44	Treadmill	\$15,600
						45	Elliptical	\$9,600
						46	Recumbent bike	\$3,600
						47	Isolation mussel group	\$10,800
						48	Fitness equip (10% refurb, a	\$4,000
						49	Office (allowance)	\$6,000
						50	Office computer	\$2,600
						51	Elevator cab & door, passen	\$160,200
						52	Elevator, traction psngr, con	\$340,800
						53	Elevator, traction psngr, mex	\$170,400
						56	Cooling tower, 10% refurbisl	\$18,000
						57	Heat exchanger, refurbish	\$75,000
						59	Water conditioning system	\$6,000
						60	Large pump, rebuild (allowa	\$35,000
						61	Water booster pump system	\$22,000
						62	Sump pump	\$36,000
						63	Package unit, roof top	\$80,000
						64	Common HVAC & air handl	\$36,000
						67	Trash compactor	\$18,000
Total Scheduled Replacements		\$9,250	No Scheduled Replacements			Total Scheduled Replacements		\$2,685,060

Sample

PROJECTED REPLACEMENTS - YEARS 34 TO 36

Item	2049 - YEAR 34	\$	Item	2050 - YEAR 35	\$	Item	2051 - YEAR 36	\$
24	Roof top furnishing (50% all	\$6,000				31	Lobby, refurnish	\$6,000
65	Miscl fan/pump/motor (allow	\$5,000				32	Lobby, refurbish/lighting//fro	\$60,000
						42	Fitness room, carpet	\$4,250
Total Scheduled Replacements		\$11,000	No Scheduled Replacements			Total Scheduled Replacements		\$70,250

Sample

PROJECTED REPLACEMENTS - YEARS 37 TO 39

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PROJECTED REPLACEMENTS - YEARS 40 TO 42

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CONDITION ASSESSMENT

General Comments. Miller-Dodson Associates conducted a Reserve Study at the Kay Condominium in February 2015. Kay Condominium is in good condition for a building of its age. A review of the Replacement Reserve Inventory will show that we are anticipating most of the components achieving their normal economic lives.

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

Concrete Work. The concrete work includes a limited amount of concrete work along K Street and the ramps and slabs providing access to the parking garage and loading dock. We have also accounted for limited repair of the garage slabs. The Association maintains an inventory of approximately 3,500 square feet (sf) of concrete flatwork. The overall condition of the concrete work is good with a few areas of general deterioration and minor settlement.

The standards we used for recommending replacement are as follows:

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



Because it is highly unlikely that all of the community's 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

Sample

funds over an extended timeframe to reflect the incremental nature of this work. This approach assumes an average failure rate of ½% to 1% per year.

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>.

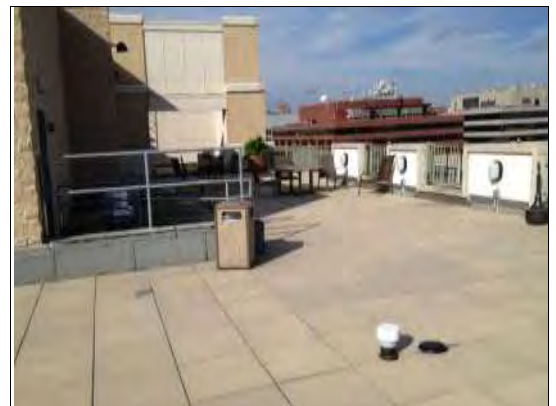
Garage Slabs. The Association maintains the under building parking. It is our understanding that the Declarant sealed the concrete parking level slabs as part of the initial construction.



Given the expense to repair defective concrete in place, we recommend the application of coating sealants for the structural slabs of the garage. Several reputable companies such as Sika Corporation provide sealant systems for garages of this type, and we recommend contacting the representatives of these companies to aid in the development of an appropriate sealant system for the Association's garage.

Underground Utilities. The Association is responsible for the maintenance of the underground utility lines, including the storm water management pipes, water lines, and sanitary lines. Engineering drawings were not used in the determination of these underground components. Instead, we have provided an estimate of the approximate replacement costs based on our experience with other communities of similar size and configuration. The inspection and evaluation of underground lines and structures is beyond the scope of work for this study.

Building Roofing. The facility is roofed in a flat roofing system that is in generally good, but has had leakage issues in the past. Flat roofing systems can have a variety of configurations that will greatly affect the cost of replacement including insulation, ballast, the height of the building, and the density of installed mechanical equipment. Flat roofing systems typically have a useful life of 15 to 20 years and this study assumes a useful life of 20 years for all flat roofing systems.



Sample

As roofing systems age, periodic inspections are recommended and repair work may be required. In order to obtain the maximum useful life possible, we recommend performing routine inspections and cleanings at a decreasing interval as the roof ages. Access, inspection, and repair work should be performed by contractors and personnel who are experienced in the types of roofing used for the facility.

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

In addition to the roofing there are several balconies with water proofing membranes at the rear of the building.



Masonry. The main exterior cladding of the building is brick masonry that is in generally good condition, but with areas of efflorescence indicating that water is getting behind the wall system. In several areas there did not appear to be proper drainage with weep-holes behind the brickwork. We recommend having a thorough inspection of the building's cladding, flashing, and caulking systems. This work should be performed by a registered Architect or Engineer who specializes in building exterior systems.

As masonry weathers, the mortar joints will become damaged by water penetration. As additional water gains access to the joints, repeated freeze-thaw cycles gradually increase the damage to the mortar joints. If allowed to progress, even the masonry units such as brick, block, and stone can have their surfaces affected and masonry units can become loose.



Sample



In general, masonry is considered to be a long life item and is therefore excluded from reserve funding. However, because weather and other conditions result in the slow deterioration of the mortar in masonry joints, we have included funding in this study for repointing. Repointing is the process of raking and cutting out damaged sections of mortar and replacing them with new mortar.

Periodic repointing and local replacement of damaged masonry units will limit the damage done by moisture penetration. For this study, we assume that 10% of the masonry will require repointing every 20 years. For additional information about masonry and repointing, please view the relevant links at <http://mdareserves.com/resources/links/building-exterior>.

Caulking. The caulking on the facility's exteriors is in fair condition, with reported repair work require after completion of the building. Caulking and sealants play a primary role in the protection of the facility's exterior components and the overall weather tightness of the facility. Caulking also provides a seal between dissimilar materials and changes in construction where movement is expected. We therefore recommend recaulking every 20 years or when other exterior repairs and replacements are scheduled.

When recaulking, a simple overlay of the old caulk is improper. Rather, defective caulk joints should be completely cut out, cleaned, and prepped, with new backer materials installed as needed. New caulk can then be applied according to the manufacturer's guidelines and recommendations.

There are a significant number of sealants and caulks of varying quality and specialty. The proper specification, selection, preparation, and installation are critical to proper performance and longevity of the work. Environmental factors, including weather can play a significant role in the success of this work.

For additional information on caulking and sealants, please see the appropriate links on the Miller-Dodson web site at <http://mdareserves.com/resources/links/building-exterior>.

Windows and Doors. The Association is responsible for the windows and exterior doors of the building. Window and door units play an integral part in a facility's overall comfort, efficiency, and energy use. The quality of the installed units, and the care taken in their installation and maintenance are major factors in their effectiveness and useful life. These units can have a useful life of 20 to 35 years or more depending on their use and other factors mentioned above.

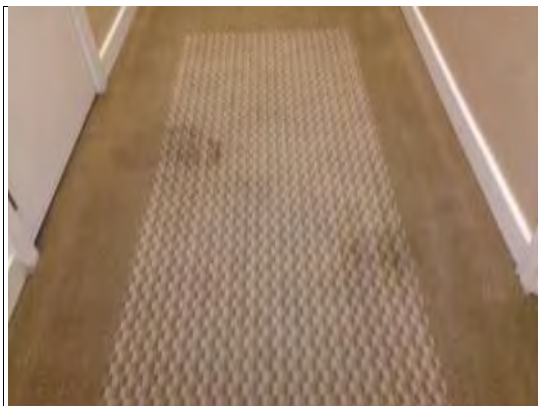
In general, we recommend coordinating the replacement of these units with other exterior work, such as siding and roof replacements. The weather tightness of the building envelope often requires transitional flashing and caulking that should be performed in coordination with each other. Warranties and advantages in 'economy of scale' can often result in lower overall replacement costs and a more reliable result. Lastly, coordinated replacements offer the opportunity to correct initial construction defects and improve the effectiveness of details with improved construction techniques and materials.

Sample



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

Common Interiors. The Association maintains the lobby, halls, meeting room and other common interior spaces that are in generally good condition, with exception of the fitness room carpeting and some areas along the hallways.



We have assumed that the Association will want to maintain these areas in a commercially acceptable condition. Typically, replacement cycles for common interior spaces vary between 5 and 10 years depending on the aesthetic tastes of the community, usage, and construction. Material selection and the community's preferences are the major factors in setting the reserve components for items such as refurbishing and interior refurbishment. The Association will need to establish these cycles as these facilities age. Maintaining historical records and incorporating these trends and preferences into a future Reserve Study update is the best way to adjust for these cycles.

Sample

Elevators. The Association maintains two traction passenger elevators that appear to be operating normally. There are no reported cases of entrapment or operational issues by the Association.

The estimated costs for the replacement the major components of the facility's elevators have been developed utilizing R.S. Means Construction Cost Data, and guidelines provided by reputable elevator manufacturers and service providers. These costs are included to reflect the obsolescence that occurs with elevator systems. Even though the systems may be functioning well, parts for most mechanical control systems will become increasingly hard to find as the components age, and the reliability of these components becomes problematic. As such, parts availability, down-time, and service costs become major considerations that may force a replacement decision. When these elevator systems are replaced, they will normally have to be brought into compliance with current code requirements. This work typically entails upgrading door operating mechanisms, replacing elevator call systems, and installation of emergency phones, but can involve enlargement of the cab and other very costly work.

Where prudent amounts have been included in this study in anticipation of these concerns, we recommend developing a replacement plan with estimated costs based on the specific equipment installed and current local code requirements. Many reputable elevator companies will provide this service free of charge or at minimal cost. At the time of a Reserve Study Update, this information can then be incorporated into the study.

Central Heating and Cooling System. This facility is fitted with a two-pipe water source heat-pump system, which the Association maintains. A two-pipe system of this type supplies heating and cooling to the facility throughout the year.



Central heating and cooling plants are engineered systems that are limited based on the technology available at the time of their installation and their design. As an overall assessment of building efficiency and in preparation for replacement of the building's heating and cooling system, we recommend performing an energy audit and building system evaluation that includes the replacement planning for the facility's

mechanical systems as well as the replacement and modification of the exterior envelope, including windows, doors, and insulation.

HVAC Control System. The heating and cooling plant of this facility is managed and controlled by a computerized HVAC control system. Systems of this type have a useful life of 10 to 15 years.

Heating Boiler. Heating is supplied to the facility by a hot water boiler system. The boiler system is reported to be in working condition. Boiler systems typically have a service life of 20 to 40 years.

When it becomes necessary to replace the central boiler system, we recommend that the community consider installing a bank of modular boilers. The use of multiple boilers will allow the operators to stage their use to match heating requirements in the building and increase the overall operating efficiency of the heating system. For additional information about modular boiler systems, please see the relevant link at <http://mdareserves.com/resources/links/building-system>.

Cooling Tower. The facility has a central cooling system that generates and distributes chilled water to the individual units and other interior areas. Heat from the system is rejected to the atmosphere through the cooling tower system. The cooling tower system is reported to be in good condition. Cooling towers have a typical service life of 20 to 25 years.

Cooling towers have a very large impact on the operating efficiency of a central air conditioning system. Therefore it is important to follow a comprehensive maintenance program to keep the tower operating at peak efficiency. It is also a good practice to replace the cooling tower and chiller systems at the same time.

Air Handlers. The Association maintains air handlers throughout the facility, and these components can have a useful life of 20 to 40 years. With fan, motor, and coil replacements performed as needed, the casings of these systems can last significantly longer.

Water Source Heat Pumps. The Association maintains water source heat pumps. We have assumed that these units will have a useful life of 15 to 20 years



Pumps, Fans and Motors. The Association maintains an assortment of fans, motors, pumps, and valves that are part of the central heating and cooling plant. Rather than inventorying and listing these separately, we have assumed an incremental approach to their replacement and provided a partial replacement allowance every five years.

Split and Package HVAC Systems. In addition to the central system, the Association maintains a number of heating ventilation and air conditioning (HVAC) systems that use the refrigerant known as R22. This refrigerant will be phased out of production by the year 2020 and generally phased out of use in new systems by the year 2010. See the EPA, HCFC Phaseout Schedule from our web site at <http://mdareserves.com/resources/links/building-system>. Since most of the community's AC systems rely on

the old R22 refrigerant, we assume that the HVAC replacement will include upgrading to the new refrigerant, which is likely to require the replacement of the entire system, including the compressor, coil, and line-set.



Even though manufacturers continue to predict 15 to 20-year life cycles for HVAC equipment that use these new refrigerants, this is not proven by historical data. We therefore recommend anticipating a normal economic life of 15 years for all HVAC equipment that uses pressurized refrigerants of these types.

As is the case with most equipment, to achieve a maximum useful economic life, proper maintenance is essential. In some cases, proper and proactive maintenance can greatly extend the useful life of a component.

Piping. It is assumed that copper water supply pipes have been used throughout the facility. As a result of changes in water chemistry, brought on by federal clean water legislation, piping has been developing pin-hole leaks, which can lead to higher maintenance costs and a shorter than normal service life. For further information about the problem and research that is being conducted, please see the WSSC link on our web site at <http://mdareserves.com/resources/links/building-system>. In addition, in some cases, the pipe and fitting materials are of poor quality, and pin-hole leaks have been reported in as little as three years.

Water quality, in particular the Ph of the water, is critical to the longevity of these systems, and typically, the pressurized water supply lines are the most problematic followed by the central heating and cooling lines.

As a result of these problems, the facility's piping will require replacement at some point in time. As a less expensive alternative to the extremely costly work of re-piping a building, systems have been developed to clean and epoxy-line the interior surfaces of these and other types of pipes. Also, new pipe materials are on the market.

Please note that the timeframe for repiping a facility can vary widely, and the estimation of the remaining economic life is highly speculative. Given the age of the facility, the Association should be aware of the various technologies available for pipe replacement and pipe lining, including traditional pipe replacement, replacement with CPVC and other synthetic pipes, and linings from companies such as Ace Duraflo and Curaflo. However, Miller-Dodson does not endorse any specific process or company.

For budgeting purposes, an allowance of \$4,000 per unit every 25 years is included in this study for repiping work. However, please note that this work has a high degree of variability depending on the layout of the facility and accessibility, and can vary from \$2,000 per unit to \$12,000 per unit.

To gain a better understanding of the condition of this facility's pipes and water supply lines, we recommend having an expert evaluation of the piping performed. This evaluation should provide an estimation of remaining useful life of the piping systems, the condition of the water supply, and provide recommendations for replacement and to maximize the remaining useful life of this facility's piping systems. To gain a better understanding of this issue, please see the Water Delivery Report on our web site at <http://mdareserves.com/resources/links/building-system>.

Sample

Building Electrical Service. Other than transformers and meters and if protected from water damage or overloading, interior electrical systems within a building, including feed lines and switch gear, are considered long-life components and are therefore excluded from this study.

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



Replacement of these smaller components, unless otherwise identified, is considered incidental to the refurbishment of a unit or is considered a Valuation Exclusion.

Fire Safety Systems. The building is fitted with a fire safety system that includes sprinklers and alarms. Wet and dry pipe sprinkler systems have a wide variety of configurations and requirements depending on their age, condition, and jurisdictional location. Specific county and municipal codes can make a significant difference on what your community's specific requirements may be.

Building fire alarm systems have a service life of 15 to 25 years. While the panels may continue to operate past this point, changes in fire safety technology and building fire safety codes tend to render them obsolete. In addition, manufacturers only support their systems for a limited period, typically about 15 years. After this time, it may be increasingly difficult to obtain replacement parts and service. When it becomes necessary to upgrade the fire alarm system, differences in the technologies and new code requirements are likely to require upgrades in lighting, sensors, alarms, and other system and sub components.



Sample

For wet and dry pipe systems, we have assumed that these are long life components and will not require whole scale replacement. It is imperative however for these pipes to be properly drained or for the water to be properly conditioned. Other components such as heads, gauges, and valves are assumed to be normal maintenance items and are therefore excluded from the study.

We recommend having your entire fire safety system inspected and evaluated, by a professional in this field who is familiar with your area of the country. In addition, a comprehensive preventative maintenance program will ensure the maximum possible useful life from these components, and a qualified professional will be able to help in setting up and implementing such a program.

Your local CAI chapter may have a service provider list on their web site that may refer you to a local fire and life safety consultant. As an alternative, please contact our office and we will provide recommendations.

As a preliminary estimate, we have provided a \$400 allowance per unit every 15 years for the major repair and upgrade of the fire safety systems. A detailed evaluation of the community's fire safety system should include an estimate of reserve funding for these components and this funding estimate should be incorporated in the next reserve study update. Inspections and annual maintenance work are not accounted for or included in this study.

Carbon Monoxide Monitoring Systems. The Association maintains a carbon monoxide monitoring system with ventilation control in the garage area of the building. Expendable sensor replacement cartridges and biannual calibration costs are considered a maintenance expense.



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

Sample

CASH FLOW METHOD ACCOUNTING SUMMARY

This Kay Condominium - Cash Flow Method Accounting Summary is an attachment to the Kay Condominium - Replacement Reserve Study dated February 1, 2015 and is for use by accounting and reserve professionals experienced in Association funding and accounting principles. This Summary consists of four reports, the 2016, 2017, and 2018 Cash Flow Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- CASH FLOW METHOD CATEGORY FUNDING REPORT, 2016, 2017, and 2018. Each of the 71 Projected Replacements listed in the Kay Condominium Replacement Reserve Inventory has been assigned to one of 7 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 \$250,000 Beginning Balance (at the start of the Study Year) and the \$590,032 of additional Replacement Reserve Funding in 2016 through 2018 (as calculated in the Replacement Reserve Analysis) to each of the 71 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and discussed below. The calculated data includes:
 - Identification and estimated cost of each Projected Replacement scheduled in years 2016 through 2018.
 - Allocation of the \$250,000 Beginning Balance to the Projected Replacements by Chronological Allocation.
 - Allocation of the \$590,032 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2016 through 2018, by Chronological Allocation.
- CHRONOLOGICAL ALLOCATION. Chronological Allocation assigns Replacement Reserves to Projected Replacements on a "first come, first serve" basis in keeping with the basic philosophy of the Cash Flow Method. The Chronological Allocation methodology is outlined below.
 - The first step is the allocation of the \$250,000 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 Kay Condominium the Beginning Balance funds all Scheduled Replacements in the Study Year through 2020 and provides partial funding (21%) of replacements scheduled in 2021.
 - The next step is the allocation of the \$196,677 of 2016 Cash Flow Method Reserve Funding calculated in the Replacement Reserve Analysis. These funds are first allocated to fund the partially funded Projected Replacements and then to subsequent years in chronological order as outlined above.

At Kay Condominium the Beginning Balance and the 2016 Replacement Reserve Funding, funds replacements through 2022 and partial funds (88.6%) replacements in 2023.
 - Allocations of the 2017 and 2018 Reserve Funding are done using the same methodology.
 - The Three-Year Replacement Funding Report details component by component allocations made by Chronological Allocation.

Sample

2016 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 71 Projected Replacements included in the Kay Condominium Replacement Reserve Inventory has been assigned to one of the 7 categories listed in TABLE CF1 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- A Beginning Balance of \$250,000 as of the first day of the Study Year, January 1, 2016.
- Total reserve funding (including the Beginning Balance) of \$446,677 in the Study Year.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2016 being accomplished in 2016 at a cost of \$54,750.

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

2016 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF1

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2016 BEGINNING BALANCE	2016 RESERVE FUNDING	2016 PROJECTED REPLACEMENTS	2016 END OF YEAR BALANCE
SITE COMPONENT	10 to 30 years	2 to 26 years	\$62,800	\$6,860			\$6,860
BUILDING EXTERIOR	5 to 40 years	2 to 32 years	\$1,523,600	\$9,000	\$4,782		\$13,782
BUILDING EXTERIOR (cont.)	8 to 30 years	0 to 22 years	\$145,300	\$45,500	\$19,306	(\$45,500)	\$19,306
BUILDING INTERIOR	5 to 35 years	0 to 27 years	\$429,740	\$122,040	\$108,522	(\$4,250)	\$226,312
BUILDING INTERIOR (cont.)	5 to 10 years	2 to 12 years	\$8,600	\$2,600	\$2,302		\$4,902
BUILDING SYSTEM	10 to 40 years	2 to 32 years	\$1,291,400	\$54,000			\$54,000
BUILDING SYSTEM (cont.)	3 to 30 years	0 to 22 years	\$683,100	\$10,000	\$61,765	(\$5,000)	\$66,765

Sample

2017 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 71 Projected Replacements included in the Kay Condominium Replacement Reserve Inventory has been assigned to one of the 7 categories listed in TABLE CF2 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$391,927 on January 1, 2017.
- Total reserve funding (including the Beginning Balance) of \$643,355 from 2016 through 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

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

2017 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF2							
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2017 BEGINNING BALANCE	2017 RESERVE FUNDING	2017 PROJECTED REPLACEMENTS	2017 END OF YEAR BALANCE
SITE COMPONENT	10 to 30 years	1 to 25 years	\$62,800	\$6,860	\$7,003		\$13,863
BUILDING EXTERIOR	5 to 40 years	1 to 31 years	\$1,523,600	\$13,782	\$25,110		\$38,892
BUILDING EXTERIOR (cont.)	8 to 30 years	6 to 21 years	\$145,300	\$19,306	\$47,994		\$67,300
BUILDING INTERIOR	5 to 35 years	1 to 26 years	\$429,740	\$226,312	\$30,594		\$256,906
BUILDING INTERIOR (cont.)	5 to 10 years	1 to 11 years	\$8,600	\$4,902	\$650		\$5,552
BUILDING SYSTEM	10 to 40 years	1 to 31 years	\$1,291,400	\$54,000	\$72,049		\$126,049
BUILDING SYSTEM (cont.)	3 to 30 years	2 to 21 years	\$683,100	\$66,765	\$13,276		\$80,042

Sample

2018 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 71 Projected Replacements included in the Kay Condominium Replacement Reserve Inventory has been assigned to one of the 7 categories listed in TABLE CF3 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$588,605 on January 1, 2018.
- Total Replacement Reserve funding (including the Beginning Balance) of \$840,032 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2018 being accomplished in 2018 at a cost of \$183,360.

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

2018 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF3

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2018 BEGINNING BALANCE	2018 RESERVE FUNDING	2018 PROJECTED REPLACEMENTS	2018 END OF YEAR BALANCE
SITE COMPONENT	10 to 30 years	0 to 24 years	\$62,800	\$13,863	\$472	(\$6,860)	\$7,475
BUILDING EXTERIOR	5 to 40 years	0 to 30 years	\$1,523,600	\$38,892	\$60,886	(\$3,000)	\$96,779
BUILDING EXTERIOR (cont.)	8 to 30 years	5 to 20 years	\$145,300	\$67,300			\$67,300
BUILDING INTERIOR	5 to 35 years	0 to 25 years	\$429,740	\$256,906	\$32,121	(\$116,900)	\$172,127
BUILDING INTERIOR (cont.)	5 to 10 years	0 to 10 years	\$8,600	\$5,552	\$1,159	(\$2,600)	\$4,111
BUILDING SYSTEM	10 to 40 years	0 to 30 years	\$1,291,400	\$126,049	\$98,938	(\$54,000)	\$170,988
BUILDING SYSTEM (cont.)	3 to 30 years	1 to 20 years	\$683,100	\$80,042	\$3,100		\$83,142

Sample

CASH FLOW METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT

TABLE CF4 below details the allocation of the \$250,000 Beginning Balance, as reported by the Association and the \$590,032 of Replacement Reserve Funding calculated by the Cash Flow Method from 2016 to 2018, to the 71 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made by Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and outlined on Page CF1.

The accuracy of the allocations is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$250,000 on January 1, 2016.
- Replacement Reserves on Deposit totaling \$391,927 on January 1, 2017.
- Replacement Reserves on Deposit totaling \$588,605 on January 1, 2018.
- Total Replacement Reserve funding (including the Beginning Balance) of \$840,032 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory from 2016 to 2018 being accomplished as scheduled in the Replacement Reserve Inventory at a cost of \$238,110.

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.

CASH FLOW METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CF4												
Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance	2018 Reserve Funding	2018 Projected Replacements	2018 End of Year Balance
SITE COMPONENT												
1	Concrete flatwork (20%)	6,860	6,860			6,860			6,860		(6,860)	
2	Concrete flatwork (20%)	6,860					6,860		6,860			6,860
3	Concrete flatwork (20%)	6,860										
4	Concrete flatwork (20%)	6,860										
5	Concrete flatwork (20%)	6,860										
6	UG building piping (allowance)	25,000										
7	Storm water mgmt (allowance)	3,500					143		143	472		615
BUILDING EXTERIOR												
8	Flat membrane roof	188,700					7,725		7,725	25,436		33,161
9	Roof pavers	33,500					1,371		1,371	4,516		5,887
10	Roof railing	38,700										
11	Terrace waterproofing membrane	9,800										
12	Terrace pavers	3,500										
13	Terrace privacy railing	4,500										
14	Terrace railing	4,500										
15	Repointing (10% allowance)	144,300					5,908		5,908	19,451		25,358
16	Building caulking	22,500					921		921	3,033		3,954
17	Unit windows	890,000										
18	Unit patio doors	20,700					847		847	2,790		3,638
19	Store front	112,500										
20	Canopy, refurbish	37,500					1,535		1,535	5,055		6,590
21	Solid exterior door (allowance)	1,500					61		61	202		264
22	Exterior sconce lighting	2,400		2,125		2,125	275		2,400			2,400
23	Misc exterior building light (allowance)	3,000	3,000	2,657		5,657	466		6,123	404	(3,000)	3,527
24	Roof top furnishing (50% allowance)	6,000	6,000			6,000	6,000		12,000			12,000
BUILDING EXTERIOR (cont.)												
25	Roll-up doors	15,000		13,284		13,284	1,716		15,000			15,000
26	Garage door openers	4,200		3,719		3,719	481		4,200			4,200
27	Garage seal coating (allowance)	45,500	45,500		(45,500)		45,500		45,500			45,500
28	Garage lighting	26,000										
29	Garage ventilation (allowance)	52,000										
30	Garage Co2 system	2,600		2,302		2,302	298		2,600			2,600
BUILDING INTERIOR												
31	Lobby, refurbish	6,000		5,313		5,313	687		6,000			6,000
32	Lobby, refurbish/lighting/front desk	60,000		53,134		53,134	6,866		60,000			60,000
33	Lobby, flooring (allowance)	48,000										
34	Mailbox	21,440										
35	Hallway carpet	77,350	77,350			77,350	3,167		80,517	10,426	(77,350)	13,593
36	Hallway, refurbish & lighting	91,000					3,725		3,725	12,266		15,992

Sample

CASH FLOW METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CF4 cont'd

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance	2018 Reserve Funding	2018 Projected Replacements	2018 End of Year Balance
37	Interior door lock (allowance)	48,750		43,172		43,172	5,578		48,750			48,750
38	Club room carpet	2,750	2,750			2,750	113		2,863	371	(2,750)	483
39	Club room, redecorate	10,000					409		409	1,348		1,757
40	Powder room	9,600					393		393	1,294		1,687
41	Multipurpose room (allowance)	4,000	4,000			4,000	164		4,164	539	(4,000)	703
42	Fitness room, carpet	4,250	5,140	3,360	(4,250)	4,250	4,250		8,500			8,500
43	Fitness room, refurbish	3,000					3,000		3,000			3,000
44	Treadmill	15,600	15,600			15,600	639		16,239	2,103	(15,600)	2,741
45	Elliptical	9,600	9,600			9,600	393		9,993	1,294	(9,600)	1,687
46	Recumbent bike	3,600	3,600			3,600	147		3,747	485	(3,600)	633
47	Isolation mussel group	10,800					442		442	1,456		1,898
48	Fitness equip (10% refurb, allowance)	4,000	4,000	3,542		7,542	621		8,164	539	(4,000)	4,703
BUILDING INTERIOR (cont.)												
49	Office (allowance)	6,000					246		246	809		1,054
50	Office computer	2,600	2,600	2,302		4,902	404		5,306	350	(2,600)	3,057
BUILDING SYSTEM												
51	Elevator cab & door, passenger	160,200					6,558		6,558	21,594		28,152
52	Elevator, traction psngr, controls	340,800					13,952		13,952	45,938		59,890
53	Elevator, traction psngr, mechanical	170,400										
54	Boiler system	90,000										
55	Cooling tower, replace	180,000										
56	Cooling tower, 10% refurbish	18,000	18,000			18,000	737		18,737	2,426	(18,000)	3,163
57	Heat exchanger, refurbish	75,000										
58	Energy mgmt system	42,000					42,000		42,000			42,000
59	Water conditioning system	6,000					246		246	809		1,054
60	Large pump, rebuild (allowance)	35,000					1,433		1,433	4,718		6,151
61	Water booster pump system (allow)	22,000					901		901	2,965		3,866
62	Sump pump	36,000					1,474		1,474	4,853		6,326
63	Package unit, roof top	80,000					3,275		3,275	10,783		14,059
64	Common HVAC & air handler (allow)	36,000	36,000			36,000	1,474		37,474	4,853	(36,000)	6,326
BUILDING SYSTEM (cont.)												
65	Miscl fan/pump/motor (allowance)	5,000	10,000	5,000	(5,000)	10,000	5,205		15,205	674		15,879
66	Generator & switch gear, 150 Kw	60,000										
67	Trash compactor	18,000					737		737	2,426		3,163
68	Security sys, 8 cameras & a recorder	6,000		5,313		5,313	687		6,000			6,000
69	Entry system	4,500		3,985		3,985	515		4,500			4,500
70	Building piping (allowance)	536,000										
71	Fire alarm/suppression (allowance)	53,600		47,467		47,467	6,133		53,600			53,600

Sample

COMPONENT METHOD



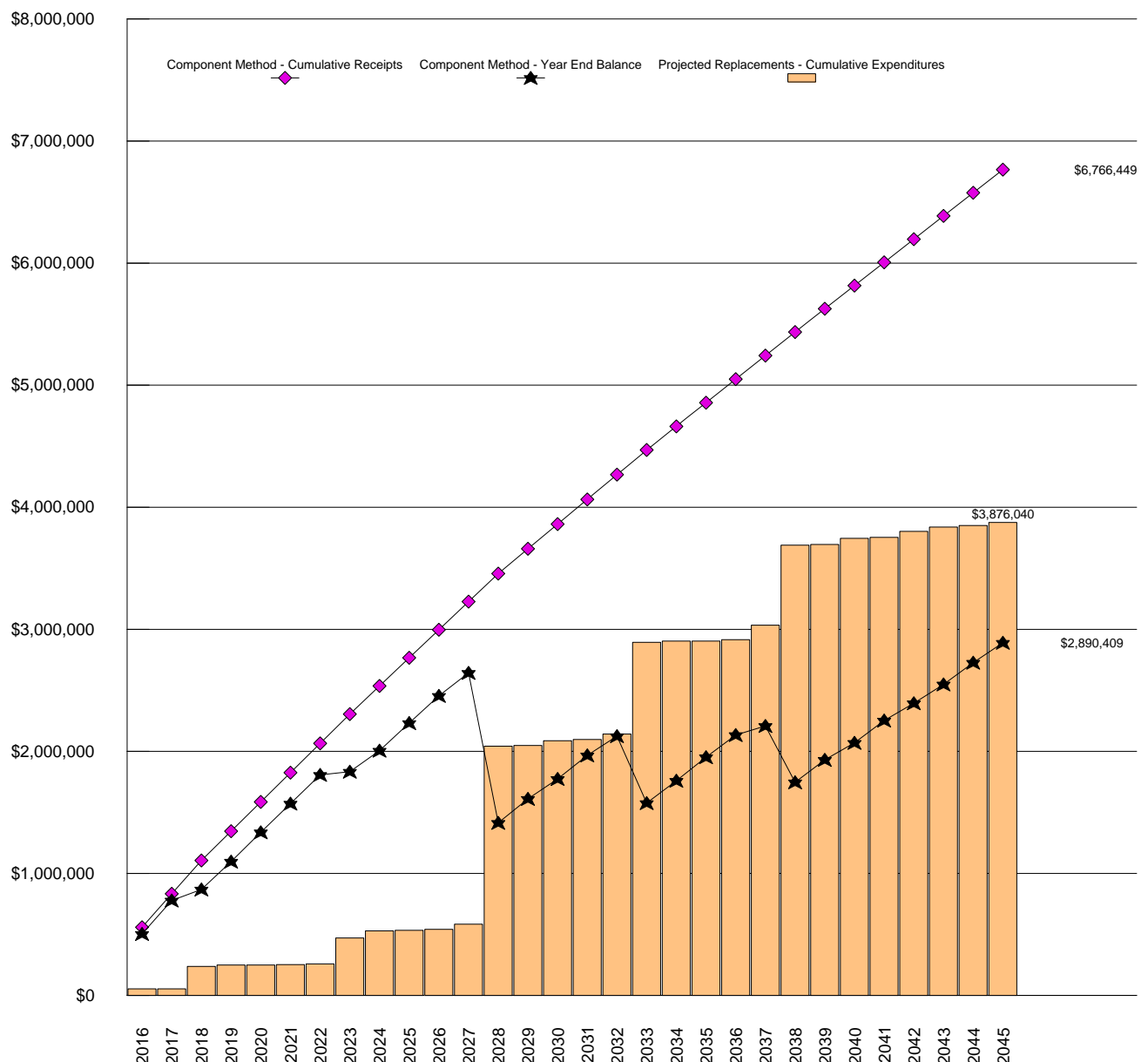
\$309,185

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

\$192.28 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 71 Projected Replacements listed in the Replacement Reserve Inventory is treated as a separate account. The Beginning Balance is allocated to each of the individual accounts, as is all subsequent funding of Replacement Reserves. These funds are "locked" in these individual accounts and are not available to fund other Projected Replacements. The calculation of Recommended Annual Funding of Replacement Reserves is a multi-step process outlined in more detail on Page CM2.

Component Method - Cumulative Receipts and Expenditures Graph



Sample

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 71 Projected Replacements. The total, \$1,242,321, 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 (\$250,000) by the Current Funding Objective (\$1,242,321). At Kay Condominium the Funding Percentage is 20.1%
- **Allocation of the Beginning Balance.** The Beginning Balance is divided among the 71 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 20.1 percent funded, there is \$161 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 \$309,185, the Component Method Recommended Annual Funding of Replacement Reserves in the Study Year (2016).

In our fence example, the \$161 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 \$420. Next year, the deposit remains \$420, but in the third year, the fence is replaced and the annual funding adjusts to \$100.

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

Component Method Data - Years 1 through 30

Year	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Beginning balance	\$250,000									
Recommended annual funding	\$309,185	\$273,657	\$273,657	\$239,884	\$239,644	\$239,644	\$239,644	\$239,644	\$230,798	\$230,372
Interest on reserves										
Expenditures	\$54,750		\$183,360	\$11,000		\$4,250	\$5,000	\$212,650	\$58,360	\$5,000
Year end balance	\$504,435	\$778,091	\$868,388	\$1,097,272	\$1,336,916	\$1,572,310	\$1,806,954	\$1,833,948	\$2,006,386	\$2,231,758
Cumulative Expenditures	\$54,750	\$54,750	\$238,110	\$249,110	\$249,110	\$253,360	\$258,360	\$471,010	\$529,370	\$534,370
Cumulative Receipts	\$559,185	\$832,841	\$1,106,498	\$1,346,382	\$1,586,026	\$1,825,670	\$2,065,314	\$2,304,958	\$2,535,756	\$2,766,128
Year	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Recommended annual funding	\$230,372	\$230,314	\$229,755	\$202,703	\$202,703	\$202,520	\$202,520	\$202,520	\$193,313	\$193,313
Interest on reserves										
Expenditures	\$7,250	\$42,000	\$1,459,100	\$6,000	\$38,860	\$9,250	\$45,500	\$750,600	\$11,000	
Year end balance	\$2,454,880	\$2,643,193	\$1,413,848	\$1,610,551	\$1,774,394	\$1,967,665	\$2,124,685	\$1,576,606	\$1,758,919	\$1,952,232
Cumulative Expenditures	\$541,620	\$583,620	\$2,042,720	\$2,048,720	\$2,087,580	\$2,096,830	\$2,142,330	\$2,892,930	\$2,903,930	\$2,903,930
Cumulative Receipts	\$2,996,500	\$3,226,813	\$3,456,568	\$3,659,271	\$3,861,974	\$4,064,495	\$4,267,015	\$4,469,536	\$4,662,849	\$4,856,162
Year	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045
Recommended annual funding	\$193,313	\$193,235	\$192,862	\$190,169	\$190,169	\$190,169	\$190,169	\$190,149	\$190,026	\$190,026
Interest on reserves										
Expenditures	\$11,110	\$119,000	\$655,350	\$6,000	\$50,500	\$7,250	\$48,860	\$36,040	\$12,000	\$26,000
Year end balance	\$2,134,436	\$2,208,671	\$1,746,183	\$1,930,351	\$2,070,020	\$2,252,939	\$2,394,248	\$2,548,357	\$2,726,383	\$2,890,409
Cumulative Expenditures	\$2,915,040	\$3,034,040	\$3,689,390	\$3,695,390	\$3,745,890	\$3,753,140	\$3,802,000	\$3,838,040	\$3,850,040	\$3,876,040
Cumulative Receipts	\$5,049,476	\$5,242,711	\$5,435,573	\$5,625,741	\$5,815,910	\$6,006,079	\$6,196,248	\$6,386,397	\$6,576,423	\$6,766,449

Sample

COMPONENT METHOD ACCOUNTING SUMMARY

This Kay Condominium - Component Method Accounting Summary is an attachment to the Kay Condominium - Replacement Reserve Study dated February 1, 2015 and is for use by accounting and reserve professionals experienced in Association funding and accounting principles. This Summary consists of four reports, the 2016, 2017, and 2018 Component Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- COMPONENT METHOD CATEGORY FUNDING REPORT, 2016, 2017, and 2018. Each of the 71 Projected Replacements listed in the Kay Condominium Replacement Reserve Inventory has been assigned to one of 7 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 \$250,000 Beginning Balance (at the start of the Study Year) and the \$856,498 of additional Replacement Reserve funding from 2016 to 2018 (as calculated in the Replacement Reserve Analysis) to each of the 71 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using the Component Method as outlined in the Replacement Reserve Analysis. The calculated data includes:
 - Identification and estimated cost of each Projected Replacement schedule in years 2016 through 2018.
 - Allocation of the \$250,000 Beginning Balance to the Projected Replacements by the Component Method.
 - Allocation of the \$856,498 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2016 through 2018, by the Component Method.

Sample

2016 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 71 Projected Replacements included in the Kay Condominium Replacement Reserve Inventory has been assigned to one of the 7 categories listed in TABLE CM1 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- A Beginning Balance of \$250,000 as of the first day of the Study Year, January 1, 2016.
- Total reserve funding (including the Beginning Balance) of \$559,185 in the Study Year.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2016 being accomplished in 2016 at a cost of \$54,750.

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

2016 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM1

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2016 BEGINNING BALANCE	2016 RESERVE FUNDING	2016 PROJECTED REPLACEMENTS	2016 END OF YEAR BALANCE
SITE COMPONENT	10 to 30 years	2 to 26 years	\$62,800	\$4,860	\$5,074		\$9,934
BUILDING EXTERIOR	5 to 40 years	2 to 32 years	\$1,523,600	\$71,294	\$67,397		\$138,691
BUILDING EXTERIOR (cont.)	8 to 30 years	0 to 22 years	\$145,300	\$13,645	\$42,701	\$45,500	\$10,846
BUILDING INTERIOR	5 to 35 years	0 to 27 years	\$429,740	\$38,478	\$61,839	\$4,250	\$96,067
BUILDING INTERIOR (cont.)	5 to 10 years	2 to 12 years	\$8,600	\$209	\$1,258		\$1,468
BUILDING SYSTEM	10 to 40 years	2 to 32 years	\$1,291,400	\$80,202	\$87,787		\$167,989
BUILDING SYSTEM (cont.)	3 to 30 years	0 to 22 years	\$683,100	\$41,312	\$43,127	\$5,000	\$79,440

Sample

2017 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 71 Projected Replacements included in the Kay Condominium Replacement Reserve Inventory has been assigned to one of the 7 categories listed in TABLE CM2 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$504,435 on January 1, 2017.
- Total reserve funding (including the Beginning Balance) of \$832,841 from 2016 through 2017.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

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

2017 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM2

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2017 BEGINNING BALANCE	2017 RESERVE FUNDING	2017 PROJECTED REPLACEMENTS	2017 END OF YEAR BALANCE
SITE COMPONENT	10 to 30 years	1 to 25 years	\$62,800	\$9,934	\$5,074		\$15,009
BUILDING EXTERIOR	5 to 40 years	1 to 31 years	\$1,523,600	\$138,691	\$67,397		\$206,089
BUILDING EXTERIOR (cont.)	8 to 30 years	6 to 21 years	\$145,300	\$10,846	\$12,045		\$22,891
BUILDING INTERIOR	5 to 35 years	1 to 26 years	\$429,740	\$96,067	\$59,294		\$155,361
BUILDING INTERIOR (cont.)	5 to 10 years	1 to 11 years	\$8,600	\$1,468	\$1,258		\$2,726
BUILDING SYSTEM	10 to 40 years	1 to 31 years	\$1,291,400	\$167,989	\$87,787		\$255,776
BUILDING SYSTEM (cont.)	3 to 30 years	2 to 21 years	\$683,100	\$79,440	\$40,800		\$120,239

Sample

2018 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 71 Projected Replacements included in the Kay Condominium Replacement Reserve Inventory has been assigned to one of the 7 categories listed in TABLE CM3 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$778,091 on January 1, 2018.
- Total Replacement Reserve funding (including the Beginning Balance) of \$1,106,498 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory in 2018 being accomplished in 2018 at a cost of \$183,360.

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

2018 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM3

CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2018 BEGINNING BALANCE	2018 RESERVE FUNDING	2018 PROJECTED REPLACEMENTS	2018 END OF YEAR BALANCE
SITE COMPONENT	10 to 30 years	0 to 24 years	\$62,800	\$15,009	\$5,074	\$6,860	\$13,223
BUILDING EXTERIOR	5 to 40 years	0 to 30 years	\$1,523,600	\$206,089	\$67,397	\$3,000	\$270,486
BUILDING EXTERIOR (cont.)	8 to 30 years	5 to 20 years	\$145,300	\$22,891	\$12,045		\$34,935
BUILDING INTERIOR	5 to 35 years	0 to 25 years	\$429,740	\$155,361	\$59,294	\$116,900	\$97,755
BUILDING INTERIOR (cont.)	5 to 10 years	0 to 10 years	\$8,600	\$2,726	\$1,258	\$2,600	\$1,385
BUILDING SYSTEM	10 to 40 years	0 to 30 years	\$1,291,400	\$255,776	\$87,787	\$54,000	\$289,564
BUILDING SYSTEM (cont.)	3 to 30 years	1 to 20 years	\$683,100	\$120,239	\$40,800		\$161,039

Sample

COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT

TABLE CM4 below details the allocation of the \$250,000 Beginning Balance, as reported by the Association and the \$856,498 of Replacement Reserve Funding calculated by the Cash Flow Method from 2016 to 2018, to the 71 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made by Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and outlined on Page CF1.

The accuracy of the allocations is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$250,000 on January 1, 2016.
- Replacement Reserves on Deposit totaling \$504,435 on January 1, 2017.
- Replacement Reserves on Deposit totaling \$778,091 on January 1, 2018.
- Total Replacement Reserve funding (including the Beginning Balance) of \$1,106,498 from 2016 to 2018.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- All Projected Replacements scheduled in the Replacement Reserve Inventory from 2016 to 2018 being accomplished as scheduled in the Replacement Reserve Inventory at a cost of \$238,110.

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

COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CM4

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance	2018 Reserve Funding	2018 Projected Replacements	2018 End of Year Balance
SITE COMPONENT												
1	Concrete flatwork (20%)	6,860	1,242	1,873		3,115	1,873		4,987	1,873	(6,860)	
2	Concrete flatwork (20%)	6,860	966	655		1,621	655		2,276	655		2,931
3	Concrete flatwork (20%)	6,860	690	411		1,102	411		1,513	411		1,924
4	Concrete flatwork (20%)	6,860	414	307		721	307		1,028	307		1,335
5	Concrete flatwork (20%)	6,860	138	249		387	249		636	249		885
6	UG building piping (allowance)	25,000	1,409	1,311		2,719	1,311		4,030	1,311		5,341
7	Storm water mgmt (allowance)	3,500		269		269	269		538	269		808
BUILDING EXTERIOR												
8	Flat membrane roof	188,700	13,291	13,493		26,784	13,493		40,277	13,493		53,770
9	Roof pavers	33,500	2,359	2,395		4,755	2,395		7,150	2,395		9,546
10	Roof railing	38,700	1,363	1,131		2,494	1,131		3,626	1,131		4,757
11	Terrace waterproofing membrane	9,800	460	406		866	406		1,272	406		1,678
12	Terrace pavers	3,500	164	145		309	145		454	145		599
13	Terrace privacy railing	4,500	211	186		398	186		584	186		771
14	Terrace railing	4,500	158	132		290	132		422	132		553
15	Repointing (10% allowance)	144,300	10,163	10,318		20,482	10,318		30,800	10,318		41,118
16	Building caulking	22,500	1,585	1,609		3,194	1,609		4,802	1,609		6,411
17	Unit windows	890,000	31,343	26,020		57,362	26,020		83,382	26,020		109,402
18	Unit patio doors	20,700	1,458	1,480		2,938	1,480		4,418	1,480		5,898
19	Store front	112,500	5,282	4,662		9,944	4,662		14,606	4,662		19,267
20	Canopy, refurbish	37,500	2,641	2,681		5,323	2,681		8,004	2,681		10,686
21	Solid exterior door (allowance)	1,500	106	107		213	107		320	107		427
22	Exterior sconce lighting	2,400	225	272		497	272		769	272		1,041
23	Misc exterior building light (allowance)	3,000	241	920		1,161	920		2,080	920	(3,000)	
24	Roof top furnishing (50% allowance)	6,000	241	1,440		1,681	1,440		3,121	1,440		4,560
BUILDING EXTERIOR (cont.)												
25	Roll-up doors	15,000	1,409	1,699		3,108	1,699		4,806	1,699		6,505
26	Garage door openers	4,200	394	476		870	476		1,346	476		1,822
27	Garage seal coating (allowance)	45,500	9,156	36,344	(45,500)		5,688		5,688	5,688		11,375
28	Garage lighting	26,000		1,733		1,733	1,733		3,467	1,733		5,200
29	Garage ventilation (allowance)	52,000	2,442	2,155		4,596	2,155		6,751	2,155		8,906
30	Garage Co2 system	2,600	244	294		539	294		833	294		1,128
BUILDING INTERIOR												
31	Lobby, refurbish	6,000		750		750	750		1,500	750		2,250
32	Lobby, refurbish/lighting/front desk	60,000	5,175	6,853		12,028	6,853		18,881	6,853		25,734
33	Lobby, flooring (allowance)	48,000	2,070	2,088		4,158	2,088		6,245	2,088		8,333
34	Mailbox	21,440	863	735		1,598	735		2,333	735		3,068
35	Hallway carpet	77,350	10,896	22,151		33,047	22,151		55,199	22,151	(77,350)	
36	Hallway, refurbish & lighting	91,000	6,409	6,507		12,916	6,507		19,423	6,507		25,930

Sample

COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CM4 cont'd												
Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2016 Reserve Funding	2016 Projected Replacements	2016 End of Year Balance	2017 Reserve Funding	2017 Projected Replacements	2017 End of Year Balance	2018 Reserve Funding	2018 Projected Replacements	2018 End of Year Balance
37	Interior door lock (allowance)	48,750	4,578	5,521		10,100	5,521		15,621	5,521		21,143
38	Club room carpet	2,750	387	788		1,175	788		1,962	788	(2,750)	
39	Club room, redecorate	10,000	704	715		1,419	715		2,134	715		2,849
40	Powder room	9,600	676	686		1,363	686		2,049	686		2,736
41	Multipurpose room (allowance)	4,000	563	1,146		1,709	1,146		2,854	1,146	(4,000)	
42	Fitness room, carpet	4,250	855	3,395	(4,250)		850		850	850		1,700
43	Fitness room, refurbish	3,000	161	258		419	258		677	258		935
44	Treadmill	15,600	2,197	4,468		6,665	4,468		11,132	4,468	(15,600)	
45	Elliptical	9,600	1,352	2,749		4,102	2,749		6,851	2,749	(9,600)	
46	Recumbent bike	3,600	507	1,031		1,538	1,031		2,569	1,031	(3,600)	
47	Isolation mussel group	10,800	761	772		1,533	772		2,305	772		3,077
48	Fitness equip (10% refurb, allowance)	4,000	322	1,226		1,548	1,226		2,774	1,226	(4,000)	
BUILDING INTERIOR (cont.)												
49	Office (allowance)	6,000		462		462	462		923	462		1,385
50	Office computer	2,600	209	797		1,006	797		1,803	797	(2,600)	
BUILDING SYSTEM												
51	Elevator cab & door, passenger	160,200	11,283	11,455		22,738	11,455		34,194	11,455		45,649
52	Elevator, traction psngr, controls	340,800	24,003	24,369		48,372	24,369		72,741	24,369		97,110
53	Elevator, traction psngr, mechanical	170,400	6,001	4,982		10,983	4,982		15,964	4,982		20,946
54	Boiler system	90,000	4,226	3,729		7,955	3,729		11,685	3,729		15,414
55	Cooling tower, replace	180,000	10,142	9,437		19,579	9,437		29,015	9,437		38,452
56	Cooling tower, 10% refurbish	18,000	2,536	5,155		7,690	5,155		12,845	5,155	(18,000)	
57	Heat exchanger, refurbish	75,000	2,641	2,193		4,834	2,193		7,027	2,193		9,219
58	Energy mgmt system	42,000	1,690	3,359		5,050	3,359		8,409	3,359		11,768
59	Water conditioning system	6,000	423	429		852	429		1,281	429		1,710
60	Large pump, rebuild (allowance)	35,000	2,465	2,503		4,968	2,503		7,471	2,503		9,973
61	Water booster pump system (allow)	22,000	1,550	1,573		3,123	1,573		4,696	1,573		6,269
62	Sump pump	36,000	2,536	2,574		5,110	2,574		7,684	2,574		10,258
63	Package unit, roof top	80,000	5,635	5,720		11,355	5,720		17,075	5,720		22,796
64	Common HVAC & air handler (allow)	36,000	5,071	10,310		15,381	10,310		25,690	10,310	(36,000)	
BUILDING SYSTEM (cont.)												
65	Misc fan/pump/motor (allowance)	5,000	1,006	3,994	(5,000)		1,667		1,667	1,667		3,333
66	Generator & switch gear, 150 Kw	60,000	2,817	2,486		5,304	2,486		7,790	2,486		10,276
67	Trash compactor	18,000	1,268	1,287		2,555	1,287		3,842	1,287		5,129
68	Security sys, 8 cameras & a recorder	6,000	563	680		1,243	680		1,923	680		2,602
69	Entry system	4,500	423	510		932	510		1,442	510		1,952
70	Building piping (allowance)	536,000	30,202	28,100		58,301	28,100		86,401	28,100		114,501
71	Fire alarm/suppression (allowance)	53,600	5,034	6,071		11,104	6,071		17,175	6,071		23,246

Sample

1. COMMON INTEREST DEVELOPMENTS - AN OVERVIEW

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

The growth of Community Associations has been explosive. In 1965, there were only 500 Community Associations in the United States. According to the 1990 U.S. Census, there were 130,000 Community Associations. Community Associations Institute (CAI), a national trade association, estimates there were more than 200,000 Community Associations in the year 2000, and that the number of Community Associations will continue to multiply.

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

2. REPLACEMENT RESERVE STUDY

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

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

Replacement Reserve Inventory includes estimates of the normal economic life and the remaining economic life for those components whose replacement is scheduled for funding from Replacement Reserves.

- **Section C Projected Annual Replacements.** The Calendar of Projected Annual Replacements provides a year-by-year listing of the Projected Replacements based on the data in the Replacement Reserve Inventory.
- **Section D Condition Assessment.** Several of the items listed in the Replacement Reserve Inventory are discussed in more detail. The Condition Assessment includes a narrative and photographs that document conditions at the property observed during our visual evaluation.
- **The Appendix** is provided as an attachment to the Replacement Reserve Study. Additional attachments may include supplemental photographs to document conditions at the property and additional information specific to the property cited in the Conditions Assessment (i.e. Consumer Product Safety Commission, Handbook for Public Playground Safety, information on segmental retaining walls, manufacturer recommendations for asphalt shingles or siding, etc). The Appendix also includes the Accounting Summary for the Cash Flow Method and the Component Method.

Sample

3. METHODS OF ANALYSIS

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

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

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

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

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

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

4. REPLACEMENT RESERVE STUDY DATA

- **Identification of Reserve Components.** The Reserve Analyst has only two methods of identifying Reserve Components; (1) information provided by the Association and (2) observations made at the site. It is important that the Reserve Analyst be provided with all available information detailing the components owned by the Association. It is our policy to request such information prior to bidding on a project and to meet with the individuals responsible for maintaining the community after acceptance of our proposal. After completion of the Study, the Study should be reviewed by the Board of Directors, individuals responsible for maintaining the community, and the Association's accounting professionals. We are dependent upon the Association for correct information, documentation, and drawings.
- **Unit Costs.** Unit costs are developed using nationally published standards and estimating guides and are adjusted by state or region. In some instances, recent data received in the course of our work is used to modify these figures.

Contractor proposals or actual cost experience may be available as part of the Association records. This is useful information, which should be incorporated into your report. Please bring any such available data to our attention, preferably before the report is commenced.

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

Sample

5. DEFINITIONS

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

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

Cash Flow Analysis. See Cash Flow Method, above.

Component Analysis. See Component Method, above.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

What is a Reserve Study?
Who are we?



<http://bcove.me/nc0o69t7>

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



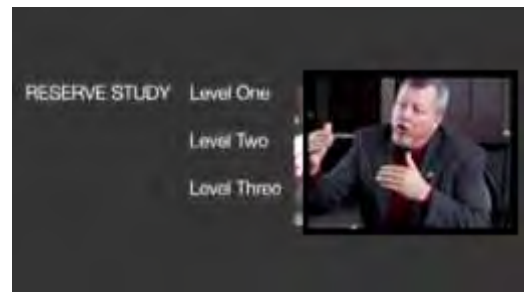
<http://bcove.me/stt373hj>

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



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

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



<http://bcove.me/ixis1yxm>

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



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

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



<http://bcove.me/fazwdk3h>

clients?

Sample

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



<http://bcove.me/n6nwnktv>

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



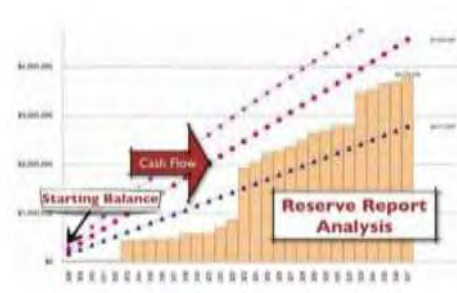
<http://bcove.me/2vfih1tz>

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



<http://bcove.me/wb2fugb1>

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



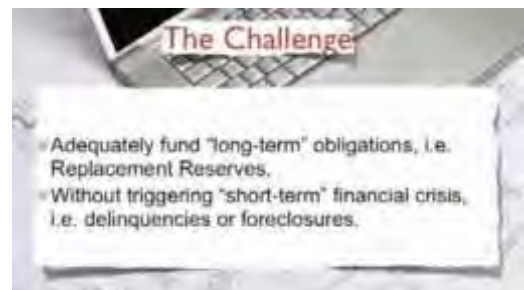
<http://bcove.me/7buer3n8>

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



<http://bcove.me/s2tmtj9b>

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



<http://bcove.me/iqul31vq>