LEVEL 2 REPLACEMENT RESERVE REPORT FY 2022
WATERFORD CONDOMINIUM

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Invoice # 9158

2022 Waterford Condominium v3 07-18-2023

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REPLACEMENT RESERVE REPORT

WATERFORD CONDOMINIUM

KENSINGTON, MARYLAND
February 26, 2021
Revised September 20, 2021
Revised July 18, 2023

Description. Waterford Condominium is a Residential Condominium located in Kensington, Maryland. Constructed in 1963, the community consists of a High-rise Building containing 149 units. The survey examined the common elements of the property, including:

- Entry Monument
- Parking Areas
- Sidewalks
- Fencing, Site Lighting, and Retaining Walls
- Storm Water Management, Detention Basins, and Fountains
- Exterior Roof Top Pool and on Grade Picnic Areas.
- Building exteriors and common interior areas and systems

EXECUTIVE SUMMARY

This Reserve Study has been prepared for the Waterford Condominium for the Fiscal Year 2022 covering the period from January 1, 2022 to December 31, 2022. The Replacement Reserves Starting Balance as of January 1, 2022 is reported to be $1,620,136. The reported Current Annual Funding for Reserves is $532,477. The Recommended Annual Reserve Funding level for 2022 is $440,857.

This version of the Reserve Study includes information provided by the Condominium Association regarding mechanical system replacements.

The Association is currently funding the Reserves at a somewhat higher funding level than is calculated in this Reserve Study. However, due to the high rate of inflation in today's construction industry and its effect on Replacement costs, we recommend that the Association continue to fund at their current higher funding level. This can be adjusted in the future when inflation rates stabilize.

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

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

Level of Service. This study has been performed as a Level 2 Update with Site Visit/On-Site Review as defined by the Community Associations Institute's, National Reserve Study Standards. As such, the component inventory is based on the study that was performed by Miller Dodson Associates in 2016. This inventory was adjusted to reflect changes provided by the Community Manager and/or the Board of Directors, or adjustments made based on the site visit and visual assessment performed by the Analyst. The analysis, including fund status and funding plan, is developed from the adjusted inventory.

To aid in the understanding of this report and its concepts and practices, on our website, 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 Waterford Condominium (hereinafter called the Association) with an inventory of the common community facilities and infrastructure components that require periodic replacement. The Study includes a general view of the condition of these items and an effective financial plan to fund projected periodic replacements.

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

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

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

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

- The Request for Proposal submitted and executed by the Association.

- Miller+Dodson performed a visual evaluation on February 26, 2021 to determine a remaining useful life and replacement cost for the commonly owned elements of this facility.

- This study contains additional recommendations to address inflation for the Cash Flow Method only. For this recommendation, Miller+Dodson uses the Producers Price Index (PPI), which gauges inflation in manufacturing and construction. Please see page A5 for further details.

To-Scale Drawings. Site and building plans were not used in the development of this study. We recommend the Association assemble and maintain a library of site and building plans of the entire facility. Record drawings should be scanned into an electronic format for safe storage and ease of distribution. Upon request for a nominal fee, Miller+Dodson can provide scanning services.

Acknowledgment. Miller+Dodson Associates would like to acknowledge the assistance and input of Dan Lowery, Property Manager who provided very helpful insight into the current operations of the property.

Analyst's Credentials. Mr. Gregory S. Gilbert (RS) holds a Bachelors Degree in Architecture from the Georgia Institute of Technology and a Master of Architecture from the University of Oklahoma. Mr. Gilbert is a licensed Architect. Mr. Gilbert's experience includes the design of residential homes, fire stations, and most recently, educational projects. Greg has also performed over twenty feasibility studies for the U. S. Navy, Boards of Education, and retail developers, which included performing existing condition surveys to address maintenance issues, code violations, and general conditions of the structure to determine if and how the buildings can be renovated or modified. Mr. Gilbert is currently a Reserve Specialist for Miller+Dodson Associates.

Respectfully Submitted,

millerdodson
CAPITAL RESERVE CONSULTANTS

Greg Gilbert
Gregory S. Gilbert, RS

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SECTION A - FINANCIAL ANALYSIS

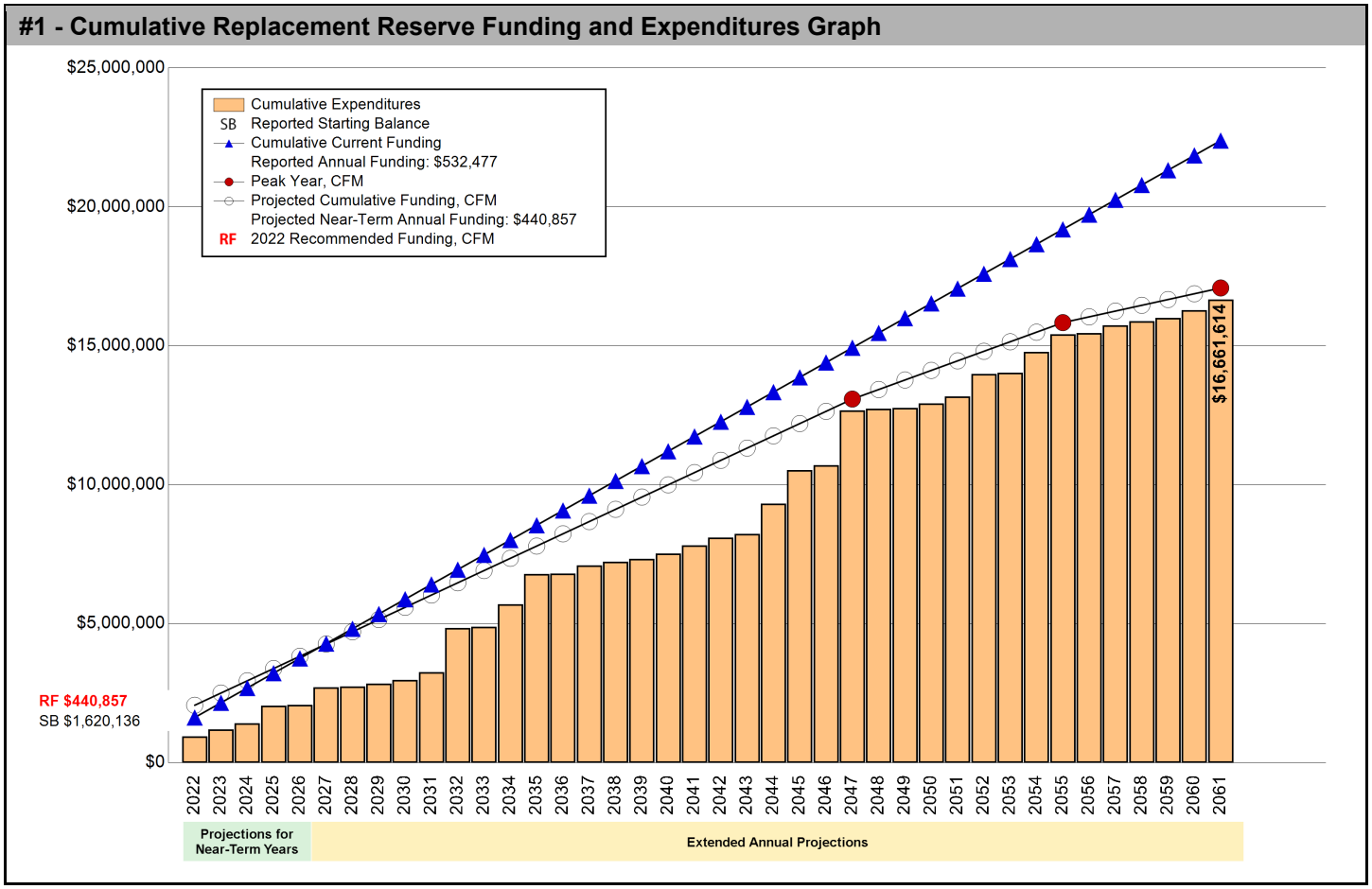
The Waterford Condominium Replacement Reserve Analysis uses the Cash Flow Method (CFM) to calculate Replacement Reserve funding for the periodic replacement of the 140 Projected Replacements identified in the Replacement Reserve Inventory.

$440,857 **RECOMMENDED REPLACEMENT RESERVE FUNDING FOR THE STUDY YEAR, 2022**
$246.56 Per unit (average), minimum monthly funding of Replacement Reserves

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

Waterford Condominium reports a Starting Balance of $1,620,136 and Annual Funding totaling $532,477, which adequately funds projected replacements for the near-term years. See Page A.3 for a more detailed evaluation.

#1 - Cumulative Replacement Reserve Funding and Expenditures Graph



This version of the Reserve Study includes information provided by the Condominium Association regarding mechanical system replacements.

The Association is currently funding the Reserves at a somewhat higher funding level than is calculated in this Reserve Study. However, due to the high rate of inflation in today's construction industry and its effect on Replacement costs, we recommend that the Association continue to fund at their current higher funding level. This can be adjusted in the future when inflation rates stabilize.

REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION

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

2022 **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, 2022.

40 Years **STUDY PERIOD**

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

$1,620,136 **STARTING BALANCE**

The Association reports Replacement Reserves on Deposit totaling $1,620,136 at the start of the Study Year.

Level Two **LEVEL OF SERVICE**

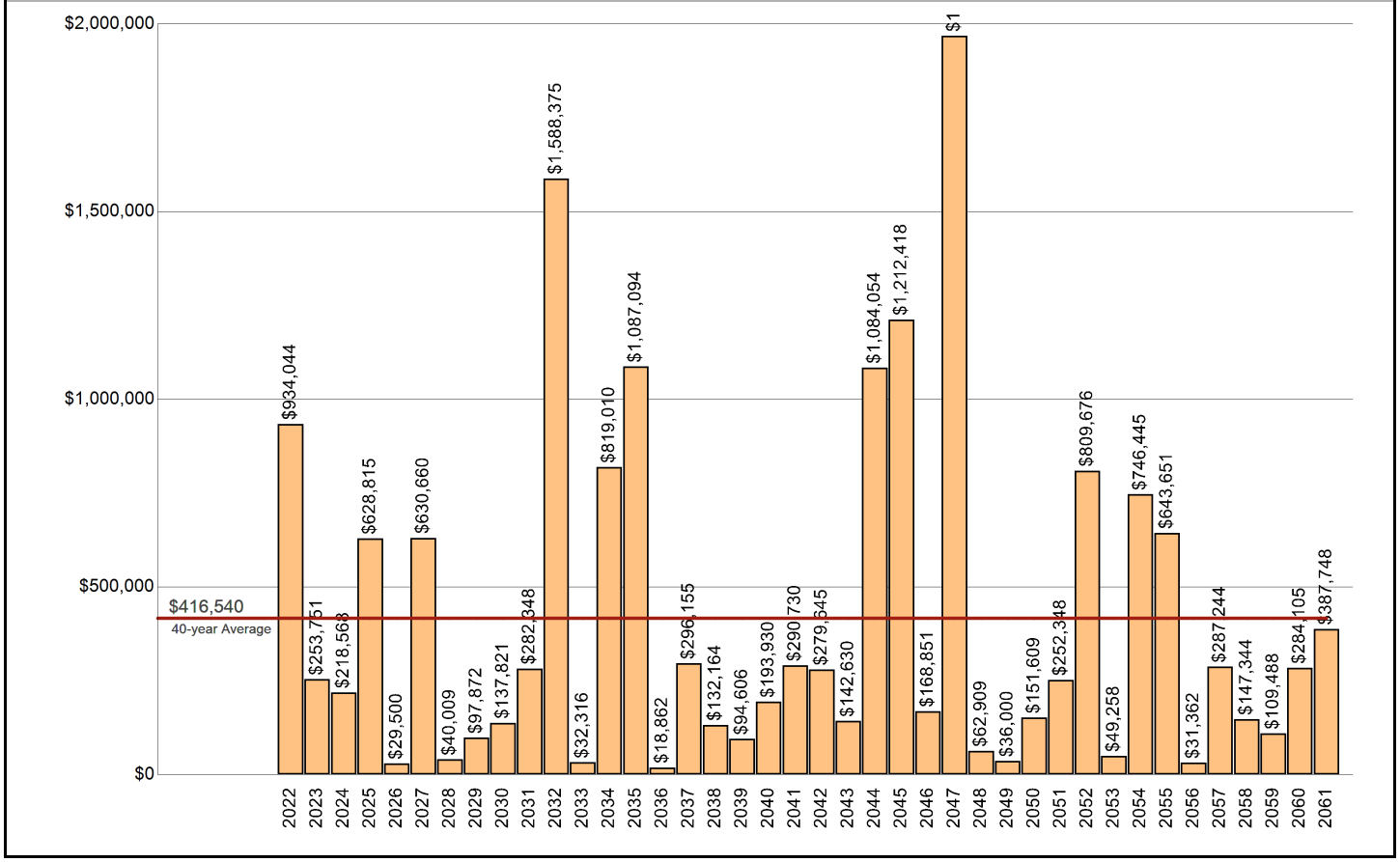
The Replacement Reserve Inventory has been developed in compliance with the National Reserve Study Standards for a Level Two Study, as defined by the Community Associations Institute (CAI).

$16,661,614 **REPLACEMENT RESERVE INVENTORY - PROJECTED REPLACEMENTS**

The Waterford Condominium Replacement Reserve Inventory identifies 140 items that will require periodic replacement, that are to be funded from Replacement Reserves. We estimate the cost of these replacements will be $16,661,614 over the 40-year Study Period. The Projected Replacements are divided into 4 major categories starting on Page B.3. Pages B.1-B.2 provide detailed information on the Replacement Reserve Inventory.

#2 - Annual Expenditures for Projected Replacements Graph

This graph shows annual expenditures for Projected Replacements over the 40-year Study Period. The red line shows the average annual expenditure of $416,540. Section C provides a year by year Calendar of these expenditures.



UPDATING OF THE FUNDING PLAN

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

UPDATING OF THE REPLACEMENT RESERVE STUDY

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

ANNUAL EXPENDITURES AND CURRENT FUNDING

The annual expenditures that comprise the $16,661,614 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	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Starting Balance	$1,620,136									
Projected Replacements	($934,044)	($253,751)	($218,568)	($628,815)	($29,500)	($630,660)	($40,009)	($97,872)	($137,821)	($282,348)
Annual Deposit	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477
End of Year Balance	$1,218,569	$1,497,295	$1,811,203	$1,714,866	$2,217,843	$2,119,660	$2,612,128	$3,046,733	$3,441,389	$3,691,518
Cumulative Expenditures	($934,044)	($1,187,795)	($1,406,364)	($2,035,178)	($2,064,678)	($2,695,338)	($2,735,347)	($2,833,219)	($2,971,040)	($3,253,388)
Cumulative Receipts	$2,152,613	$2,685,090	$3,217,567	$3,750,044	$4,282,521	$4,814,998	$5,347,475	$5,879,952	$6,412,429	$6,944,906
Year	**2032**	**2033**	**2034**	**2035**	**2036**	**2037**	**2038**	**2039**	**2040**	**2041**
Projected Replacements	($1,588,375)	($32,316)	($819,010)	($1,087,094)	($18,862)	($296,155)	($132,164)	($94,606)	($193,930)	($290,730)
Annual Deposit	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477
End of Year Balance	$2,635,620	$3,135,780	$2,849,247	$2,294,630	$2,808,245	$3,044,566	$3,444,879	$3,882,750	$4,221,297	$4,463,044
Cumulative Expenditures	($4,841,763)	($4,874,080)	($5,693,090)	($6,780,184)	($6,799,046)	($7,095,202)	($7,227,366)	($7,321,972)	($7,515,902)	($7,806,632)
Cumulative Receipts	$7,477,383	$8,009,860	$8,542,337	$9,074,814	$9,607,291	$10,139,768	$10,672,245	$11,204,722	$11,737,199	$12,269,676
Year	**2042**	**2043**	**2044**	**2045**	**2046**	**2047**	**2048**	**2049**	**2050**	**2051**
Projected Replacements	($279,645)	($142,630)	($1,084,054)	($1,212,418)	($168,851)	($1,968,198)	($62,909)	($36,000)	($151,609)	($252,348)
Annual Deposit	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477
End of Year Balance	$4,715,876	$5,105,724	$4,554,147	$3,874,206	$4,237,832	$2,802,111	$3,271,679	$3,768,156	$4,149,024	$4,429,153
Cumulative Expenditures	($8,086,277)	($8,228,906)	($9,312,960)	($10,525,378)	($10,694,229)	($12,662,427)	($12,725,336)	($12,761,336)	($12,912,945)	($13,165,293)
Cumulative Receipts	$12,802,153	$13,334,630	$13,867,107	$14,399,584	$14,932,061	$15,464,538	$15,997,015	$16,529,492	$17,061,969	$17,594,446
Year	**2052**	**2053**	**2054**	**2055**	**2056**	**2057**	**2058**	**2059**	**2060**	**2061**
Projected Replacements	($809,676)	($49,258)	($746,445)	($643,651)	($31,362)	($287,244)	($147,344)	($109,488)	($284,105)	($387,748)
Annual Deposit	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477	$532,477
End of Year Balance	$4,151,954	$4,635,173	$4,421,205	$4,310,032	$4,811,146	$5,056,379	$5,441,511	$5,864,501	$6,112,873	$6,257,602
Cumulative Expenditures	($13,974,969)	($14,024,227)	($14,770,672)	($15,414,323)	($15,445,685)	($15,732,929)	($15,880,274)	($15,989,761)	($16,273,866)	($16,661,614)
Cumulative Receipts	$18,126,923	$18,659,400	$19,191,877	$19,724,354	$20,256,831	$20,789,308	$21,321,785	$21,854,262	$22,386,739	$22,919,216

EVALUATION OF CURRENT FUNDING

The evaluation of Current Funding (Starting Balance of $1,620,136 & annual funding of $532,477), 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 140 Projected Replacements identified in the Replacement Reserve Inventory and that the Association will continue Annual Funding of $532,477 throughout the 40-year Study Period.

Annual Funding of $532,477 is approximately 121 percent of the $440,857 recommended Annual Funding calculated by the Cash Flow Method for 2022, the Study Year.

See the Executive Summary for the Current Funding Statement.

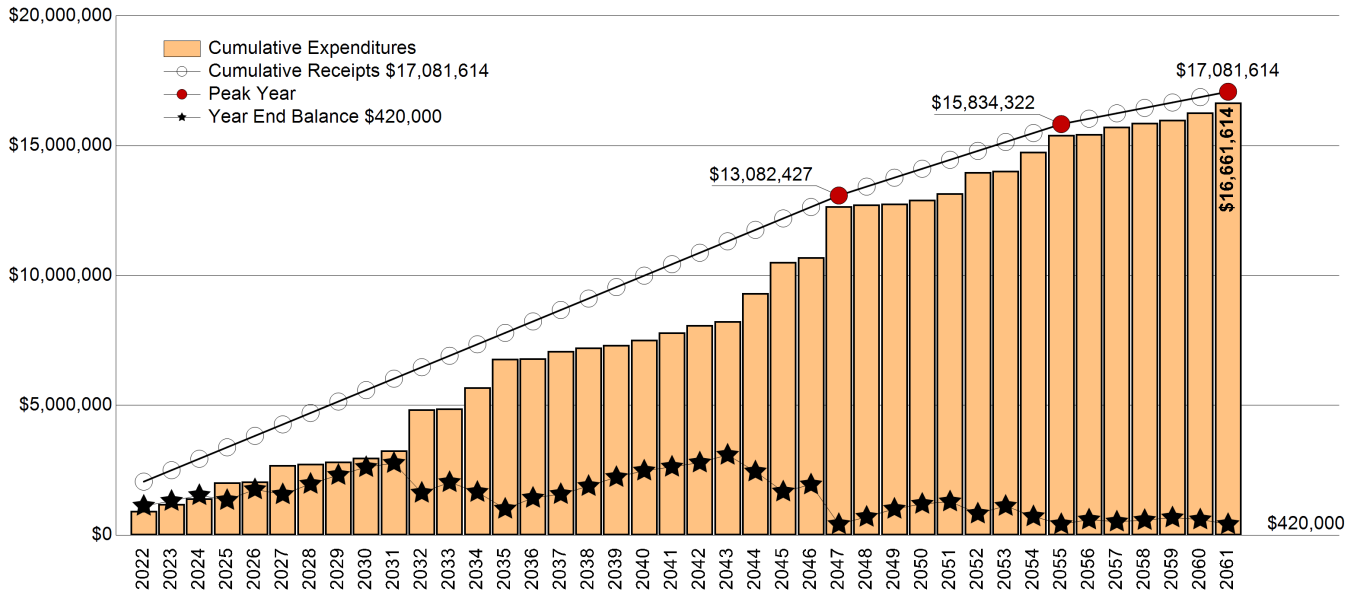
CASH FLOW METHOD FUNDING

$440,857 **RECOMMENDED REPLACEMENT RESERVE FUNDING FOR 2022**
$246.56 Per unit (average), minimum monthly funding of Replacement Reserves

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

- **Peak Years.** The First Peak Year occurs in 2047 with Replacement Reserves on Deposit dropping to the Minimum Balance after the completion of $12,662,427 of replacements from 2022 to 2047. Recommended funding is anticipated to decline in 2048. Peak Years are identified in Chart 4 and Table 5.
- **Threshold (Minimum Balance).** The calculations assume a Minimum Balance of $420,000 will always be held in reserve, which is calculated by rounding the 12-month 40-year average annual expenditure of $416,540 as shown on Graph #2.
- **Cash Flow Method Study Period.** Cash Flow Method calculates funding for $16,661,614 of expenditures over the 40-year Study Period. It does not include funding for any projects beyond 2061 and in 2061, 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	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Starting Balance	$1,620,136									
Projected Replacements	($934,044)	($253,751)	($218,568)	($628,815)	($29,500)	($630,660)	($40,009)	($97,872)	($137,821)	($282,348)
Annual Deposit	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857
End of Year Balance	$1,126,949	$1,314,055	$1,536,344	$1,348,387	$1,759,744	$1,569,942	$1,970,790	$2,313,776	$2,616,813	$2,775,322
Cumulative Expenditures	($934,044)	($1,187,795)	($1,406,364)	($2,035,178)	($2,064,678)	($2,695,338)	($2,735,347)	($2,833,219)	($2,971,040)	($3,253,388)
Cumulative Receipts	$2,060,993	$2,501,851	$2,942,708	$3,383,565	$3,824,423	$4,265,280	$4,706,137	$5,146,995	$5,587,852	$6,028,710

Year	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Projected Replacements	($1,588,375)	($32,316)	($819,010)	($1,087,094)	($18,862)	($296,155)	($132,164)	($94,606)	($193,930)	($290,730)
Annual Deposit	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857
End of Year Balance	$1,627,804	$2,036,345	$1,658,192	$1,011,955	$1,433,950	$1,578,652	$1,887,345	$2,233,597	$2,480,524	$2,630,652
Cumulative Expenditures	($4,841,763)	($4,874,080)	($5,693,090)	($6,780,184)	($6,799,046)	($7,095,202)	($7,227,366)	($7,321,972)	($7,515,902)	($7,806,632)
Cumulative Receipts	$6,469,567	$6,910,424	$7,351,282	$7,792,139	$8,232,996	$8,673,854	$9,114,711	$9,555,568	$9,996,426	$10,437,283

Year	2042	2043	2044	2045	2046	1st Peak - 2047	2048	2049	2050	2051
Projected Replacements	($279,645)	($142,630)	($1,084,054)	($1,212,418)	($168,851)	($1,968,198)	($62,909)	($36,000)	($151,609)	($252,348)
Annual Deposit	$440,857	$440,857	$440,857	$440,857	$440,857	$440,857	$343,987	$343,987	$343,987	$343,987
End of Year Balance	$2,791,864	$3,090,091	$2,446,895	$1,675,335	$1,947,341	$420,000	$701,078	$1,009,065	$1,201,443	$1,293,082
Cumulative Expenditures	($8,086,277)	($8,228,906)	($9,312,960)	($10,525,378)	($10,694,229)	($12,662,427)	($12,725,336)	($12,761,336)	($12,912,945)	($13,165,293)
Cumulative Receipts	$10,878,140	$11,318,998	$11,759,855	$12,200,712	$12,641,570	$13,082,427	$13,426,414	$13,770,401	$14,114,388	$14,458,375

Year	2052	2053	2054	2nd Peak - 2055	2056	2057	2058	2059	2060	3rd Peak - 2061
Projected Replacements	($809,676)	($49,258)	($746,445)	($643,651)	($31,362)	($287,244)	($147,344)	($109,488)	($284,105)	($387,748)
Annual Deposit	$343,987	$343,987	$343,987	$343,987	$207,882	$207,882	$207,882	$207,882	$207,882	$207,882
End of Year Balance	$827,393	$1,122,122	$719,664	$420,000	$596,520	$517,157	$577,695	$676,089	$599,866	$420,000
Cumulative Expenditures	($13,974,969)	($14,024,227)	($14,770,672)	($15,414,323)	($15,445,685)	($15,732,929)	($15,880,274)	($15,989,761)	($16,273,866)	($16,661,614)
Cumulative Receipts	$14,802,362	$15,146,349	$15,490,336	$15,834,322	$16,042,204	$16,250,086	$16,457,968	$16,665,850	$16,873,732	$17,081,614

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.

$440,857 **2022 - CASH FLOW METHOD RECOMMENDED FUNDING**

The 2022 Study Year calculations have been made using current replacement costs (see Page B.2), modified by the Analyst for any project specific conditions.

$467,309 **2023 - INFLATION ADJUSTED FUNDING**

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

- Replacement Reserves on Deposit totaling $1,126,949 on January 1, 2023.
- All 2022 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than $934,044.
- Construction Cost Inflation of 6.00 percent in 2022.

The $467,309 inflation adjusted funding in 2023 is a 5.99 percent increase over the non-inflation adjusted funding of $440,857.

$495,347 **2024 - INFLATION ADJUSTED FUNDING**

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

- Replacement Reserves on Deposit totaling $1,776,924 on January 1, 2024.
- All 2023 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than $259,692.
- Construction Cost Inflation of 6.00 percent in 2023.

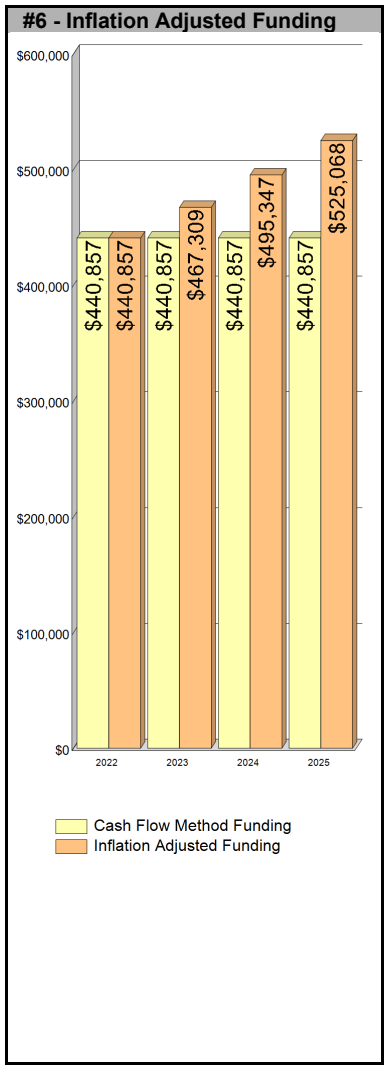
The $495,347 inflation adjusted funding in 2024 is a 12.36 percent increase over the non-inflation adjusted funding of $440,857.

$525,068 **2025 - INFLATION ADJUSTED FUNDING**

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

- Replacement Reserves on Deposit totaling $1,853,383 on January 1, 2025.
- All 2024 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than $217,030.
- Construction Cost Inflation of 6.00 percent in 2024.

The $525,068 inflation adjusted funding in 2025 is a 19.10 percent increase over the non-inflation adjusted funding of $440,857.



Year Four and Beyond

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

Inflation Adjustment

Prior to approving a budget based upon the 2023, 2024 and 2025 inflation-adjusted funding calculations above, the 6.00 percent base rate of inflation used in our calculations should be compared to rates published by the Bureau of Labor Statistics. If there is a significant discrepancy (over 1 percentage point), contact Miller+Dodson Associates prior to using the Inflation Adjusted Funding.

Interest on Reserves

The recommended funding calculations do not account for interest earned on Replacement Reserves. In 2022, based on a 1.00 percent interest rate, we estimate the Association may earn $13,735 on an average balance of $1,373,543, $14,519 on an average balance of $1,451,937 in 2023, and $18,152 on $1,815,154 in 2024. The Association may elect to attribute 100 percent of the earned interest to Reserves, resulting in a reduction in the 2022 funding from $440,857 to $427,122 (a 3.11 percent reduction), $467,309 to $452,789 in 2023 (a 3.10 percent reduction), and $495,347 to $477,196 in 2024 (a 3.66 percent reduction).

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SECTION B - REPLACEMENT RESERVE INVENTORY

- **PROJECTED REPLACEMENTS.** Waterford Condominium - Replacement Reserve Inventory identifies 140 items which are Projected Replacements and the periodic replacements of these items are scheduled for funding from Replacement Reserves. The Projected Replacements have an estimated one-time replacement cost of $9,733,710. Cumulative Replacements totaling $16,661,614 are scheduled in the Replacement Reserve Inventory over the 40-year Study Period. Cumulative Replacements include those components that are replaced more than once during the period of the study.

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

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

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

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

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

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

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

- **CATEGORIES.** The 140 items included in the Waterford Condominium Replacement Reserve Inventory are divided into 4 major categories. Each category is printed on a separate page, beginning on page B.3.

- **LEVEL OF SERVICE.** This Replacement Reserve Inventory has been developed in compliance with the standards established for a Level 2 Update, as defined by the National Reserve Study Standards, established in 1998 by Community Associations Institute, which states:

  This study has been performed as a Level 2 Update with Site Visit/On-Site Review as defined by the Community Associations Institute's, National Reserve Study Standards. As such, the component inventory is based on the study that was performed by Miller Dodson Associates in 2016. This inventory was adjusted to reflect changes provided by the Community Manager and/or the Board of Directors, or adjustments made based on the site visit and visual assessment performed by the Analyst. The analysis, including fund status and funding plan, is developed from the adjusted inventory.

REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (CONT'D)

- **INVENTORY DATA.** Each of the 140 Projected Replacements listed in the Replacement Reserve Inventory includes the following data:

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

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

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

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

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

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

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

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

- **PARTIAL FUNDING.** Items may have been included in the Replacement Reserve Inventory at less than 100 percent of their full quantity and/or replacement cost. This is done on items that will never be replaced in their entirety, but which may require periodic replacements over an extended period of time. The assumptions that provide the basis for any partial funding are noted in the Comments section.
- **REMAINING ECONOMIC LIFE GREATER THAN 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.
- **ACCURACY OF THE ANALYSIS.** The accuracy of the Replacement Reserve Analysis is dependent upon expenditures from Replacement Reserves being made ONLY for the 140 Projected Replacements specifically listed in the Replacement Reserve Inventory. The inclusion/exclusion of items from the Replacement Reserve Inventory is discussed on Page B.1.

SITE ITEMS
PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
1	Entrance monument, repoint masonry	sf	176	$8.50	10	3	$1,496
2	Concrete flatwork (6%)	sf	200	$10.85	6	1	$2,170
3	Concrete curb and gutter, barrier (6%)	ft	393	$35.50	6	1	$13,952
4	Catch basins and curb inlets (allowance)	ea	1	$6,000.00	10	5	$6,000
5	Asphalt pavement, mill and overlay	sf	72,984	$1.68	20	1	$122,613
6	Asphalt pavement patching, 5%	sf	3,649	$3.25	5	none	$11,859
7	Asphalt pavement, seal coat	sf	72,984	$0.22	5	1	$16,056
8	Site light	ea	41	$1,170.00	25	24	$47,970
9	Fountain structure	sf	2,635	$40.00	40	39	$105,400
10	Fountain waterproofing	sf	2,635	$14.50	20	2	$38,208
11	Fountain stone tuckpointing	sf	406	$12.00	10	2	$4,872
12	Fountain pump, 1.5hp	ea	1	$1,400.00	10	1	$1,400
13	Fountain filter	ea	1	$1,700.00	20	1	$1,700
14	Patio stone pavers, sand set, reset	sf	1,512	$8.50	10	3	$12,852
15	Retaining wall, concrete (repair)	sf	387	$36.60	20	3	$14,164
16	Fence, 5' galvanized chain link	ft	830	$14.50	30	5	$12,035
17	Fence, 6' galvanized chain link	ft	512	$16.50	30	10	$8,448
18	Picnic table	ea	2	$570.00	15	3	$1,140
19	Bench, PTL wood	ea	4	$650.00	15	3	$2,600
20	Cooling tower enclosure	ls	1	$30,000.00	30	9	$30,000
				Replacement Costs - Page Subtotal			$454,935

COMMENTS

- We have assumed that the Association will replace the asphalt pavement by the installation of a 2-inch thick overlay. The pavement will need to be milled prior to the installation of the overlay. Milling and the cost of minor repairs (5 to 10 percent of the total area) to the base materials and bearing soils beneath the pavement are included in the cost shown above.
- Item #4: Catch basins and curb inlets (allowance) - 9.17.21 - Revised Description
- Item #8: Site light - 9.17.21 - Revised Number of Units
- Item #9: Fountain structure - Money has been budgeted for major repairs to the fountain structure on an "as needed" basis by the request of the Board.
- Item #18: Picnic table - 9.17.21 - Revised Number of Units
- Item #19: Bench, PTL wood - 9.17.21 - Revised Number of Units

EXTERIOR ITEMS
PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
21	Roofing, inverted, east	sf	6,510	$35.00	20	5	$227,850
22	Roofing, inverted, west	sf	6,882	$35.00	20	15	$240,870
23	Roofing, paver system, penthouse	sf	5,890	$45.00	30	13	$265,050
24	Roofing, paver system, pool area	sf	3,576	$45.00	30	13	$160,920
25	Roofing, flat membrane (EPDM), elevator	sf	528	$22.00	20	17	$11,616
26	Downspouts	ft	1,300	$15.50	30	18	$20,150
27	Roof top, aluminum railing	ft	120	$75.00	35	13	$9,000
28	Masonry (10% repointing allowance)	sf	1,229	$19.60	20	5	$24,088
29	Door, steel, flush	ea	8	$960.00	25	5	$7,680
30	Door, steel, flush	pr	1	$1,760.00	25	5	$1,760
31	Door, roll-up metal	ea	1	$1,800.00	30	26	$1,800
32	Lobby area windows	sf	1,008	$50.00	40	5	$50,400
33	Balcony restoration	ls	1	$100,000.00	5	3	$100,000
34	Balcony rout and grout	ls	1	$17,000.00	2	none	$17,000
35	Balcony coating	sf	53,125	$7.06	10	3	$375,063
36	Balcony, aluminum railing	ft	10,625	$56.00	40	23	$595,000
37	Balcony block privacy screen	sf	8,205	$8.50	50	16	$69,743
38	Entrance portico, roof	sf	1,359	$22.00	20	18	$29,898
39	Entrance portico, EIFS, recoating	sf	1,965	$6.30	10	8	$12,380
40	Entrance portico, EIFS, repair	sf	491	$12.50	10	8	$6,138
41	Entrance portico, metal benchs	ea	2	$560.00	20	6	$1,120
42	Entrance portico, light fixtures	ea	37	$125.00	20	18	$4,625
						Replacement Costs - Page Subtotal	$2,232,149

COMMENTS

- Item #21: Roofing, inverted, east - 9.17.21 - Revised NEL and REL
- Item #22: Roofing, inverted, west - 9.17.21 - Revised NEL and REL
- Item #25: Roofing, flat membrane (EPDM), elevator - 9.17.21 - Revised REL
- Item #35: Balcony coating - 9.17.21 - Revised Unit Cost

EXTERIOR ITEMS - PARKING GARAGE

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
43	Garage, concrete structural repair, vertical	lf	1	$200,000.00	40	20	$200,000
44	Garage, ceiling, suspended, insulated, vinyl faced	sf	6,602	$6.00	20	10	$39,612
45	Garage, interior lighting, general	ea	17	$105.00	20	none	$1,785
46	Snow blower	ea	1	$1,500.00	10	3	$1,500

Replacement Costs - Page Subtotal $242,897

COMMENTS

- Item #43: Garage, concrete structural repair, vertical - 9.17.21 - Revised Unit Cost

EXTERIOR ITEMS - SWIMMING POOL

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
47	Swimming pool, fiberglass replace	sf	648	$45.00	40	15	$29,160
48	Swimming pool, fiberglass refurbish	sf	648	$7.90	10	5	$5,119
49	Swimming pool, waterline tile (6x6)	ft	108	$10.75	10	5	$1,161
50	Swimming pool coping, precast concrete	ft	108	$29.50	20	5	$3,186
51	Pool pump (3/4 hp)	ea	1	$1,250.00	10	5	$1,250
52	Pool filter	ea	1	$3,750.00	20	6	$3,750
53	Pool furniture	ls	1	$7,500.00	10	7	$7,500
54	Swimming pool, fence, decorative aluminum	ft	302	$70.60	45	5	$21,321
55	Swimming pool deck matting	pr	3,576	$4.50	15	13	$16,092

Replacement Costs - Page Subtotal $88,539

COMMENTS

INTERIOR ITEMS - CORRIDOR, LOBBY, STAIR, AND OFFICE

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
56	Corridor, flooring, carpet	sf	19,638	$12.85	10	9	$252,348
57	Corridor, interior lighting, general	ea	212	$105.00	21	19	$22,260
58	Corridor, exit lights	ea	44	$85.00	25	24	$3,740
59	Lobby, flooring, slate, replace	sf	2,226	$31.50	42	38	$70,119
60	Lobby, furnishings	ls	1	$6,000.00	10	7	$6,000
61	Lobby, redecorate	ls	1	$20,000.00	21	17	$20,000
62	Lobby, fancoil units	sf	3	$2,500.00	21	17	$7,500
63	Lobby, desk	sf	1	$9,000.00	21	17	$9,000
64	Lobby, mailbox, interior cluster, recessed	ea	156	$95.00	35	31	$14,820
65	Lobby, interior lighting, general	ea	26	$105.00	21	17	$2,730
66	Lobby. restroom, renovate	ls	1	$6,000.00	20	16	$6,000
67	Stair, light fixtures	ea	72	$75.00	20	16	$5,400
68	Office, flooring, carpet	sf	252	$4.85	10	6	$1,222
69	Office, furniture	ea	1	$3,000.00	10	7	$3,000
70	Office, Computer station	ea	1	$860.00	5	1	$860

Replacement Costs - Page Subtotal $425,000

COMMENTS

- Item #56: Corridor, flooring, carpet - 9.17.21 - Revised REL
- Item #58: Corridor, exit lights - 9.17.21 - Revised REL
- Item #60: Lobby, furnishings - 9.17.21 - Revised NEL and REL
- Item #69: Office, furniture - 9.17.21 - Revised Unit Cost, NEL, and REL

INTERIOR ITEMS - LAUNDRY AND TRASH ROOM

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
71	Laundry, flooring, vinyl tile	sf	512	$4.50	14	8	$2,304
72	Laundry, ceiling, suspended	sf	384	$4.85	20	14	$1,862
73	Laundry, interior lighting, general	ea	7	$105.00	21	15	$735
74	Laundry, exhaust fan	ea	1	$2,950.00	20	12	$2,950
75	Trash room, flooring, vinyl tile	sf	768	$4.50	14	10	$3,456
76	Trash room, ceiling, suspended	sf	223	$4.85	20	16	$1,082
77	Trash room, interior lighting, general	ea	12	$105.00	21	17	$1,260
78	Trash room, chute door	ea	12	$675.00	30	26	$8,100
79	Trash compactor	ls	1	$20,000.00	30	3	$20,000

Replacement Costs - Page Subtotal $41,749

COMMENTS

INTERIOR ITEMS - PENTHOUSE

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
80	Penthouse, flooring, carpet	sf	1,046	$9.85	10	2	$10,303
81	Penthouse, ceiling, suspended	sf	1,119	$4.85	20	2	$5,427
82	Penthouse, interior lighting, general	ea	27	$105.00	21	2	$2,835
83	Penthouse, windows	sf	497	$102.00	40	2	$50,694
84	Penthouse, door, aluminum sliding glass (6' X 6'8")	ea	4	$2,280.00	30	2	$9,120
85	Penthouse, kitchen, flooring, vinyl tile	sf	67	$4.50	14	2	$302
86	Penthouse, kitchen, residential, cabinets	ft	12	$355.00	21	2	$4,260
87	Penthouse, kitchen, residential, laminate counter-	sf	46	$38.00	21	2	$1,748
88	Penthouse, kitchen, appliances	ls	1	$3,500.00	21	2	$3,500
89	Penthouse, restroom, flooring, ceramic tile	sf	208	$37.50	25	2	$7,800
90	Penthouse, restroom, wall tile, ceramic	sf	312	$37.50	25	2	$11,700
91	Penthouse, restrrom, sink, fixture and mirror	ea	4	$200.00	10	2	$800
92	Penthouse, restroom, toilet	ea	2	$1,500.00	20	2	$3,000
93	Penthouse, restroom, shower	ea	2	$1,750.00	20	2	$3,500
94	Penthouse, restroom, shower, fixtures	ea	2	$500.00	10	2	$1,000
95	Penthouse, HVAC	ls	1	$13,000.00	24	2	$13,000
96	Penthouse, interior furniture	ls	1	$8,000.00	14	2	$8,000
97	Penthouse, folding table and chairs	ls	1	$3,000.00	14	2	$3,000
98	Penthouse, exterior furniture	ls	1	$3,500.00	14	2	$3,500

Replacement Costs - Page Subtotal $143,489

COMMENTS

- Item #80: Penthouse, flooring, carpet - 9.17.21 - Revised REL for all Penthouse items
- Item #83: Penthouse, windows - 9.17.21 - Revised Unit Cost
- Item #84: Penthouse, door, aluminum sliding glass (6' X 6'8") - 9.17.21 - Revised Number of Units
- Item #91: Penthouse, restrrom, sink, fixture and mirror - 9.17.21 - Revised Number of Units
- Item #92: Penthouse, restroom, toilet - 9.17.21 - Revised Unit Cost
- Item #93: Penthouse, restroom, shower - 9.17.21 - Revised Unit Cost
- Item #94: Penthouse, restroom, shower, fixtures - 9.17.21 - Revised Unit Cost
- Item #95: Penthouse, HVAC - 9.17.21 - Revised Unit Cost

BUILDING SYSTEMS - MECHANICAL EQUIPMENT

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
99	Cooling tower (300 ton) replace	ea	1	$59,350.00	30	7	$59,350
100	Cooling tower VFD	ea	1	$5,900.00	30	7	$5,900
101	Cooling tower, rebuild	ea	1	$15,000.00	15	2	$15,000
102	Scroll chiller (300 ton)	ea	2	$124,000.00	20	5	$248,000
	Boiler, gas, (6,000 MBH)						EXCLUDED
	Boiler, retube						EXCLUDED
	Boiler, burners						EXCLUDED
103	Pump, Condenser water, 20hp	ea	1	$8,950.00	30	5	$8,950
104	Pump, standby, 30hp-VFD	ea	1	$10,550.00	30	4	$10,550
105	Pump, chilled/heating water, 40hp	ea	1	$11,000.00	30	17	$11,000
106	Pump, chilled/heating water, 40 hp-VFD	ea	1	$1,950.00	30	4	$1,950
107	Pump, standpipe booster	ea	1	$9,000.00	30	20	$9,000
	Boiler, domestic water, (1,200 MBH)						EXCLUDED
	Heat exchanger						EXCLUDED
108	Expansion tank	ea	2	$7,000.00	30	11	$14,000
109	HVAC piping, replace	units	149	$10,000.00	40	10	$1,490,000
110	Domestic water pipe relining	units	149	$4,600.00	20	12	$685,400
111	Airflow remediation	ls	1	$95,000.00	60	1	$95,000
						Replacement Costs - Page Subtotal	$2,654,100

COMMENTS

- Item #101: Cooling tower, rebuild - 9.17.21 - Revised REL
- Boiler, gas, (6,000 MBH) - [07/18/2023] Included in system replacement.
- Boiler, retube - [07/18/2023] Included in system replacement.
- Boiler, burners - [07/18/2023] Included in system replacement.
- Item #105: Pump, chilled/heating water, 40hp - 9.17.21 - Revised Unit Cost
- Boiler, domestic water, (1,200 MBH) - [07/18/2023] Included in system replacement.
- Heat exchanger - [07/18/2023] Included in system replacement.
- Item #110: Domestic water pipe relining - 9.17.21 - Revised NEL and REL

BUILDING SYSTEMS - ELEVATORS

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
112	Elevator, cab and door, passenger	ea	2	$89,800.00	25	none	$179,600
113	Elevator, traction passenger controls	ea	2	$157,800.00	25	none	$315,600
114	Elevator, traction passenger mechanical	ea	2	$151,600.00	25	none	$303,200
115	Elevator, cab interior	ea	2	$9,000.00	10	none	$18,000
116	Elevator, modernization	ea	1	$65,000.00	60	none	$65,000
117	Elevator machine room HVAC	ea	1	$22,000.00	20	none	$22,000

Replacement Costs - Page Subtotal $903,400

COMMENTS

- Item #112: Elevator, cab and door, passenger - 9.17.21 - Revised Number of Units and Unit Cost
- Item #113: Elevator, traction passenger controls - 9.17.21 - Revised Number of Units and Unit Cost
- Item #114: Elevator, traction passenger mechanical - 9.17.21 - Revised Number of Units and Unit Cost
- Item #115: Elevator, cab interior - 9.17.21 - Revised Number of Units and Unit Cost

BUILDING SYSTEMS - ELECTRICAL EQUIPMENT

PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Electric switchgear						EXCLUDED
	Emergency generator, auto transfer switch						EXCLUDED
118	Emergency generator, 300 kw	ea	1	$197,628.00	40	25	$197,628
119	Fire alarm station, complete	ea	1	$325.00	30	25	$325
120	Fire alarm pull	ea	42	$45.00	30	25	$1,890
121	Fire alarm light, bell & horn	ea	60	$90.00	30	25	$5,400
122	Fire annunciator system, high-rise	ea	1	$14,500.00	30	25	$14,500
123	Building entry system	ea	1	$29,000.00	20	13	$29,000
124	Security system	ls	1	$100,000.00	10	3	$100,000

Replacement Costs - Page Subtotal $348,743

COMMENTS

- Electric switchgear - [07/18/2023] Included in generator replacement.
- Emergency generator, auto transfer switch - [07/18/2023] Included in generator replacement.
- Item #118: Emergency generator, 300 kw - 7/18/2023 - Revised Unit Cost

BUILDING SYSTEMS
PROJECTED REPLACEMENTS

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

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
COGEN							
125	Cogen	ls	1	$698,953.00	30	30	$698,953
126	Microturbine	ls	1	$1.00	30	30	$1
127	Pipe, Valves, & fittings	ls	1	$1.00	30	30	$1
128	Pumps & Heat Exchangers	ls	1	$1.00	30	30	$1
129	Elect. gear & wiring	ls	1	$1.00	30	30	$1
130	Flue	ls	1	$1.00	30	30	$1
BOILERS & WATER HEATING							
131	Boilers	ls	1	$997,640.00	30	22	$997,640
132	Central Plant piping, valves & fittings	ls	1	$1.00	30	30	$1
133	Flue	ls	1	$1.00	30	30	$1
134	Pumps & Heat Exchangers	ls	1	$1.00	20	20	$1
PUMPING							
135	System, DHW Pumps, Valves & fittings	ls	1	$183,420.00	25	25	$183,420
136	VFDs	ls	1	$1.00	15	15	$1
SOLAR							
137	Solar Panels	ls	1	$222,000.00	25	25	$222,000
138	Electrical gear & wiring	ls	1	$1.00	30	30	$1
CONTROLS							
139	Controllers & Sensors	ls	1	$96,685.00	12	12	$96,685
140	Line & Low-voltage wiring	ls	1	$1.00	30	30	$1
				Replacement Costs - Page Subtotal			$2,198,709

COMMENTS

VALUATION EXCLUSIONS
Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Miscellaneous signage						EXCLUDED
	Bollard/access control devices						EXCLUDED
	Hose bib						EXCLUDED
	Fire extinguisher cabinet						EXCLUDED
	Handrail						EXCLUDED
	Signage						EXCLUDED
	Interior doors						EXCLUDED
	Sprinkler head						EXCLUDED
	Electric heaters						EXCLUDED

VALUATION EXCLUSIONS
Comments

- Valuation Exclusions. For ease of administration of the Replacement Reserves and to reflect accurately how Replacement Reserves are administered, items with a dollar value less than $1000 have not been scheduled for funding from Replacement Reserve. Examples of items excluded by Replacement Reserves by this standard are listed above.

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

LONG-LIFE EXCLUSIONS
Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Exterior brick veneer						EXCLUDED
	Building foundation(s)						EXCLUDED
	Concrete floor slabs (interior)						EXCLUDED
	Wall, floor, and roof structure						EXCLUDED
	Common element electrical services						EXCLUDED
	Electrical wiring						EXCLUDED
	Water piping at common facilities						EXCLUDED
	Waste piping at common facilities						EXCLUDED
	Trash chute						EXCLUDED

LONG-LIFE EXCLUSIONS
Comments

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

UNIT IMPROVEMENTS EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Domestic water pipes serving one unit						EXCLUDED
	Sanitary sewers serving one unit						EXCLUDED
	Electrical wiring serving one unit						EXCLUDED
	Cable TV service serving one unit						EXCLUDED
	Telephone service serving one unit						EXCLUDED
	Gas service serving one unit						EXCLUDED
	Unit windows & balcony doors						EXCLUDED
	Unit interior						EXCLUDED

UNIT IMPROVEMENTS EXCLUSIONS

Comments

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

UTILITY EXCLUSIONS
Excluded Items

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

UTILITY EXCLUSIONS
Comments

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

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

MAINTENANCE AND REPAIR EXCLUSIONS

Excluded Items

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST ($)	NEL	REL	REPLACEMENT COST ($)
	Cleaning of asphalt pavement						EXCLUDED
	Crack sealing of asphalt pavement						EXCLUDED
	Painting of curbs						EXCLUDED
	Striping of parking spaces						EXCLUDED
	Numbering of parking spaces						EXCLUDED
	Landscaping and site grading						EXCLUDED
	Exterior painting						EXCLUDED
	Interior painting						EXCLUDED
	Janitorial service						EXCLUDED
	Repair services						EXCLUDED
	Partial replacements						EXCLUDED
	Capital improvements						EXCLUDED

MAINTENANCE AND REPAIR EXCLUSIONS

Comments

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

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

GOVERNMENT EXCLUSIONS

Excluded Items

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

GOVERNMENT EXCLUSIONS

Comments

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

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SECTION C - CALENDAR OF PROJECTED ANNUAL REPLACEMENTS

GENERAL STATEMENT. The 140 Projected Replacements in the Waterford 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 C.2.

REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

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

PROJECTED REPLACEMENTS

Item	2022 - Study Year	$
6	Asphalt pavement patching, 5%	$11,859
34	Balcony rout and grout	$17,000
45	Garage, interior lighting, general	$1,785
112	Elevator, cab and door, passenger	$179,600
113	Elevator, traction passenger controls	$315,600
114	Elevator, traction passenger mechanical	$303,200
115	Elevator, cab interior	$18,000
116	Elevator, modernization	$65,000
117	Elevator machine room HVAC	$22,000
	Total Scheduled Replacements	$934,044

Item	2023 - YEAR 1	$
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
5	Asphalt pavement, mill and overlay	$122,613
7	Asphalt pavement, seal coat	$16,056
12	Fountain pump, 1.5hp	$1,400
13	Fountain filter	$1,700
70	Office, Computer station	$860
111	Airflow remediation	$95,000
	Total Scheduled Replacements	$253,751

Item	2024 - YEAR 2	$
10	Fountain waterproofing	$38,208
11	Fountain stone tuckpointing	$4,872
34	Balcony rout and grout	$17,000
80	Penthouse, flooring, carpet	$10,303
81	Penthouse, ceiling, suspended	$5,427
82	Penthouse, interior lighting, general	$2,835
83	Penthouse, windows	$50,694
84	Penthouse, door, aluminum sliding glass (6' X 6'8")	$9,120
85	Penthouse, kitchen, flooring, vinyl tile	$302
86	Penthouse, kitchen, residential, cabinets	$4,260
87	Penthouse, kitchen, residential, laminate counter-top	$1,748
88	Penthouse, kitchen, appliances	$3,500
89	Penthouse, restroom, flooring, ceramic tile	$7,800
90	Penthouse, restroom, wall tile, ceramic	$11,700
91	Penthouse, restrrom, sink, fixture and mirror	$800
92	Penthouse, restroom, toilet	$3,000
93	Penthouse, restroom, shower	$3,500
94	Penthouse, restroom, shower, fixtures	$1,000
95	Penthouse, HVAC	$13,000
96	Penthouse, interior furniture	$8,000
97	Penthouse, folding table and chairs	$3,000
98	Penthouse, exterior furniture	$3,500
101	Cooling tower, rebuild	$15,000
	Total Scheduled Replacements	$218,568

Item	2025 - YEAR 3	$
1	Entrance monument, repoint masonry	$1,496
14	Patio stone pavers, sand set, reset	$12,852
15	Retaining wall, concrete (repair)	$14,164
18	Picnic table	$1,140
19	Bench, PTL wood	$2,600
33	Balcony restoration	$100,000
35	Balcony coating	$375,063
46	Snow blower	$1,500
79	Trash compactor	$20,000
124	Security system	$100,000
	Total Scheduled Replacements	$628,815

PROJECTED REPLACEMENTS

Item	2026 - YEAR 4	$
34	Balcony rout and grout	$17,000
104	Pump, standby, 30hp-VFD	$10,550
106	Pump, chilled/heating water, 40 hp-VFD	$1,950
	Total Scheduled Replacements	$29,500

Item	2027 - YEAR 5	$
4	Catch basins and curb inlets (allowance)	$6,000
6	Asphalt pavement patching, 5%	$11,859
16	Fence, 5' galvanized chain link	$12,035
21	Roofing, inverted, east	$227,850
28	Masonry (10% repointing allowance)	$24,088
29	Door, steel, flush	$7,680
30	Door, steel, flush	$1,760
32	Lobby area windows	$50,400
48	Swimming pool, fiberglass refurbish	$5,119
49	Swimming pool, waterline tile (6x6)	$1,161
50	Swimming pool coping, precast concrete	$3,186
51	Pool pump (3/4 hp)	$1,250
54	Swimming pool, fence, decorative aluminum	$21,321
102	Scroll chiller (300 ton)	$248,000
103	Pump, Condenser water, 20hp	$8,950
	Total Scheduled Replacements	$630,660

Item	2028 - YEAR 6	$
7	Asphalt pavement, seal coat	$16,056
34	Balcony rout and grout	$17,000
41	Entrance portico, metal benchs	$1,120
52	Pool filter	$3,750
68	Office, flooring, carpet	$1,222
70	Office, Computer station	$860
	Total Scheduled Replacements	$40,009

Item	2029 - YEAR 7	$
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
53	Pool furniture	$7,500
60	Lobby, furnishings	$6,000
69	Office, furniture	$3,000
99	Cooling tower (300 ton) replace	$59,350
100	Cooling tower VFD	$5,900
	Total Scheduled Replacements	$97,872

PROJECTED REPLACEMENTS

Item	2030 - YEAR 8	$
33	Balcony restoration	$100,000
34	Balcony rout and grout	$17,000
39	Entrance portico, EIFS, recoating	$12,380
40	Entrance portico, EIFS, repair	$6,138
71	Laundry, flooring, vinyl tile	$2,304
	Total Scheduled Replacements	$137,821

Item	2031 - YEAR 9	$
20	Cooling tower enclosure	$30,000
56	Corridor, flooring, carpet	$252,348
	Total Scheduled Replacements	$282,348

Item	2032 - YEAR 10	$
6	Asphalt pavement patching, 5%	$11,859
17	Fence, 6' galvanized chain link	$8,448
34	Balcony rout and grout	$17,000
44	Garage, ceiling, suspended, insulated, vinyl faced	$39,612
75	Trash room, flooring, vinyl tile	$3,456
109	HVAC piping, replace	$1,490,000
115	Elevator, cab interior	$18,000
	Total Scheduled Replacements	$1,588,375

Item	2033 - YEAR 11	$
7	Asphalt pavement, seal coat	$16,056
12	Fountain pump, 1.5hp	$1,400
70	Office, Computer station	$860
108	Expansion tank	$14,000
	Total Scheduled Replacements	$32,316

PROJECTED REPLACEMENTS

Item	2034 - YEAR 12	$
11	Fountain stone tuckpointing	$4,872
34	Balcony rout and grout	$17,000
74	Laundry, exhaust fan	$2,950
80	Penthouse, flooring, carpet	$10,303
91	Penthouse, restrrom, sink, fixture and mirror	$800
94	Penthouse, restroom, shower, fixtures	$1,000
110	Domestic water pipe relining	$685,400
139	Controllers & Sensors	$96,685
	Total Scheduled Replacements	$819,010

Item	2035 - YEAR 13	$
1	Entrance monument, repoint masonry	$1,496
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
14	Patio stone pavers, sand set, reset	$12,852
23	Roofing, paver system, penthouse	$265,050
24	Roofing, paver system, pool area	$160,920
27	Roof top, aluminum railing	$9,000
33	Balcony restoration	$100,000
35	Balcony coating	$375,063
46	Snow blower	$1,500
55	Swimming pool deck matting	$16,092
123	Building entry system	$29,000
124	Security system	$100,000
	Total Scheduled Replacements	$1,087,094

Item	2036 - YEAR 14	$
34	Balcony rout and grout	$17,000
72	Laundry, ceiling, suspended	$1,862
	Total Scheduled Replacements	$18,862

Item	2037 - YEAR 15	$
4	Catch basins and curb inlets (allowance)	$6,000
6	Asphalt pavement patching, 5%	$11,859
22	Roofing, inverted, west	$240,870
47	Swimming pool, fiberglass replace	$29,160
48	Swimming pool, fiberglass refurbish	$5,119
49	Swimming pool, waterline tile (6x6)	$1,161
51	Pool pump (3/4 hp)	$1,250
73	Laundry, interior lighting, general	$735
136	VFDs	$1
	Total Scheduled Replacements	$296,155

PROJECTED REPLACEMENTS

Item	2038 - YEAR 16	$
7	Asphalt pavement, seal coat	$16,056
34	Balcony rout and grout	$17,000
37	Balcony block privacy screen	$69,743
66	Lobby. restroom, renovate	$6,000
67	Stair, light fixtures	$5,400
68	Office, flooring, carpet	$1,222
70	Office, Computer station	$860
76	Trash room, ceiling, suspended	$1,082
85	Penthouse, kitchen, flooring, vinyl tile	$302
96	Penthouse, interior furniture	$8,000
97	Penthouse, folding table and chairs	$3,000
98	Penthouse, exterior furniture	$3,500
	Total Scheduled Replacements	$132,164

Item	2039 - YEAR 17	$
25	Roofing, flat membrane (EPDM), elevator	$11,616
53	Pool furniture	$7,500
60	Lobby, furnishings	$6,000
61	Lobby, redecorate	$20,000
62	Lobby, fancoil units	$7,500
63	Lobby, desk	$9,000
65	Lobby, interior lighting, general	$2,730
69	Office, furniture	$3,000
77	Trash room, interior lighting, general	$1,260
101	Cooling tower, rebuild	$15,000
105	Pump, chilled/heating water, 40hp	$11,000
	Total Scheduled Replacements	$94,606

Item	2040 - YEAR 18	$
18	Picnic table	$1,140
19	Bench, PTL wood	$2,600
26	Downspouts	$20,150
33	Balcony restoration	$100,000
34	Balcony rout and grout	$17,000
38	Entrance portico, roof	$29,898
39	Entrance portico, EIFS, recoating	$12,380
40	Entrance portico, EIFS, repair	$6,138
42	Entrance portico, light fixtures	$4,625
	Total Scheduled Replacements	$193,930

Item	2041 - YEAR 19	$
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
56	Corridor, flooring, carpet	$252,348
57	Corridor, interior lighting, general	$22,260
	Total Scheduled Replacements	$290,730

PROJECTED REPLACEMENTS

Item	2042 - YEAR 20	$
6	Asphalt pavement patching, 5%	$11,859
34	Balcony rout and grout	$17,000
43	Garage, concrete structural repair, vertical	$200,000
45	Garage, interior lighting, general	$1,785
107	Pump, standpipe booster	$9,000
115	Elevator, cab interior	$18,000
117	Elevator machine room HVAC	$22,000
134	Pumps & Heat Exchangers	$1
Total Scheduled Replacements		$279,645

Item	2043 - YEAR 21	$
5	Asphalt pavement, mill and overlay	$122,613
7	Asphalt pavement, seal coat	$16,056
12	Fountain pump, 1.5hp	$1,400
13	Fountain filter	$1,700
70	Office, Computer station	$860
Total Scheduled Replacements		$142,630

Item	2044 - YEAR 22	$
10	Fountain waterproofing	$38,208
11	Fountain stone tuckpointing	$4,872
34	Balcony rout and grout	$17,000
71	Laundry, flooring, vinyl tile	$2,304
80	Penthouse, flooring, carpet	$10,303
81	Penthouse, ceiling, suspended	$5,427
91	Penthouse, restrrom, sink, fixture and mirror	$800
92	Penthouse, restroom, toilet	$3,000
93	Penthouse, restroom, shower	$3,500
94	Penthouse, restroom, shower, fixtures	$1,000
131	Boilers	$997,640
Total Scheduled Replacements		$1,084,054

Item	2045 - YEAR 23	$
1	Entrance monument, repoint masonry	$1,496
14	Patio stone pavers, sand set, reset	$12,852
15	Retaining wall, concrete (repair)	$14,164
33	Balcony restoration	$100,000
35	Balcony coating	$375,063
36	Balcony, aluminum railing	$595,000
46	Snow blower	$1,500
82	Penthouse, interior lighting, general	$2,835
86	Penthouse, kitchen, residential, cabinets	$4,260
87	Penthouse, kitchen, residential, laminate counter-top	$1,748
88	Penthouse, kitchen, appliances	$3,500
124	Security system	$100,000
Total Scheduled Replacements		$1,212,418

PROJECTED REPLACEMENTS

Item	2046 - YEAR 24	$
8	Site light	$47,970
34	Balcony rout and grout	$17,000
58	Corridor, exit lights	$3,740
75	Trash room, flooring, vinyl tile	$3,456
139	Controllers & Sensors	$96,685
	Total Scheduled Replacements	$168,851

Item	2047 - YEAR 25	$
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
4	Catch basins and curb inlets (allowance)	$6,000
6	Asphalt pavement patching, 5%	$11,859
21	Roofing, inverted, east	$227,850
28	Masonry (10% repointing allowance)	$24,088
48	Swimming pool, fiberglass refurbish	$5,119
49	Swimming pool, waterline tile (6x6)	$1,161
50	Swimming pool coping, precast concrete	$3,186
51	Pool pump (3/4 hp)	$1,250
102	Scroll chiller (300 ton)	$248,000
112	Elevator, cab and door, passenger	$179,600
113	Elevator, traction passenger controls	$315,600
114	Elevator, traction passenger mechanical	$303,200
118	Emergency generator, 300 kw	$197,628
119	Fire alarm station, complete	$325
120	Fire alarm pull	$1,890
121	Fire alarm light, bell & horn	$5,400
122	Fire annunciator system, high-rise	$14,500
135	System, DHW Pumps, Valves & fittings	$183,420
137	Solar Panels	$222,000
	Total Scheduled Replacements	$1,968,198

Item	2048 - YEAR 26	$
7	Asphalt pavement, seal coat	$16,056
31	Door, roll-up metal	$1,800
34	Balcony rout and grout	$17,000
41	Entrance portico, metal benchs	$1,120
52	Pool filter	$3,750
68	Office, flooring, carpet	$1,222
70	Office, Computer station	$860
78	Trash room, chute door	$8,100
95	Penthouse, HVAC	$13,000
	Total Scheduled Replacements	$62,909

Item	2049 - YEAR 27	$
53	Pool furniture	$7,500
60	Lobby, furnishings	$6,000
69	Office, furniture	$3,000
89	Penthouse, restroom, flooring, ceramic tile	$7,800
90	Penthouse, restroom, wall tile, ceramic	$11,700
	Total Scheduled Replacements	$36,000

PROJECTED REPLACEMENTS

Item	2050 - YEAR 28	$
33	Balcony restoration	$100,000
34	Balcony rout and grout	$17,000
39	Entrance portico, EIFS, recoating	$12,380
40	Entrance portico, EIFS, repair	$6,138
55	Swimming pool deck matting	$16,092
	Total Scheduled Replacements	$151,609

Item	2051 - YEAR 29	$
56	Corridor, flooring, carpet	$252,348
	Total Scheduled Replacements	$252,348

Item	2052 - YEAR 30	$
6	Asphalt pavement patching, 5%	$11,859
29	Door, steel, flush	$7,680
30	Door, steel, flush	$1,760
34	Balcony rout and grout	$17,000
44	Garage, ceiling, suspended, insulated, vinyl faced	$39,612
85	Penthouse, kitchen, flooring, vinyl tile	$302
96	Penthouse, interior furniture	$8,000
97	Penthouse, folding table and chairs	$3,000
98	Penthouse, exterior furniture	$3,500
115	Elevator, cab interior	$18,000
125	Cogen	$698,953
126	Microturbine	$1
127	Pipe, Valves, & fittings	$1
128	Pumps & Heat Exchangers	$1
129	Elect. gear & wiring	$1
130	Flue	$1
132	Central Plant piping, valves & fittings	$1
133	Flue	$1
136	VFDs	$1
138	Electrical gear & wiring	$1
140	Line & Low-voltage wiring	$1
	Total Scheduled Replacements	$809,676

Item	2053 - YEAR 31	$
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
7	Asphalt pavement, seal coat	$16,056
12	Fountain pump, 1.5hp	$1,400
64	Lobby, mailbox, interior cluster, recessed	$14,820
70	Office, Computer station	$860
	Total Scheduled Replacements	$49,258

PROJECTED REPLACEMENTS

Item	2054 - YEAR 32	$
11	Fountain stone tuckpointing	$4,872
34	Balcony rout and grout	$17,000
74	Laundry, exhaust fan	$2,950
80	Penthouse, flooring, carpet	$10,303
84	Penthouse, door, aluminum sliding glass (6' X 6'8")	$9,120
91	Penthouse, restrrom, sink, fixture and mirror	$800
94	Penthouse, restroom, shower, fixtures	$1,000
101	Cooling tower, rebuild	$15,000
110	Domestic water pipe relining	$685,400
	Total Scheduled Replacements	$746,445

Item	2055 - YEAR 33	$
1	Entrance monument, repoint masonry	$1,496
14	Patio stone pavers, sand set, reset	$12,852
18	Picnic table	$1,140
19	Bench, PTL wood	$2,600
33	Balcony restoration	$100,000
35	Balcony coating	$375,063
46	Snow blower	$1,500
79	Trash compactor	$20,000
123	Building entry system	$29,000
124	Security system	$100,000
	Total Scheduled Replacements	$643,651

Item	2056 - YEAR 34	$
34	Balcony rout and grout	$17,000
72	Laundry, ceiling, suspended	$1,862
104	Pump, standby, 30hp-VFD	$10,550
106	Pump, chilled/heating water, 40 hp-VFD	$1,950
	Total Scheduled Replacements	$31,362

Item	2057 - YEAR 35	$
4	Catch basins and curb inlets (allowance)	$6,000
6	Asphalt pavement patching, 5%	$11,859
16	Fence, 5' galvanized chain link	$12,035
22	Roofing, inverted, west	$240,870
48	Swimming pool, fiberglass refurbish	$5,119
49	Swimming pool, waterline tile (6x6)	$1,161
51	Pool pump (3/4 hp)	$1,250
103	Pump, Condenser water, 20hp	$8,950
	Total Scheduled Replacements	$287,244

PROJECTED REPLACEMENTS

Item	2058 - YEAR 36	$
7	Asphalt pavement, seal coat	$16,056
34	Balcony rout and grout	$17,000
66	Lobby. restroom, renovate	$6,000
67	Stair, light fixtures	$5,400
68	Office, flooring, carpet	$1,222
70	Office, Computer station	$860
71	Laundry, flooring, vinyl tile	$2,304
73	Laundry, interior lighting, general	$735
76	Trash room, ceiling, suspended	$1,082
139	Controllers & Sensors	$96,685
	Total Scheduled Replacements	$147,344

Item	2059 - YEAR 37	$
2	Concrete flatwork (6%)	$2,170
3	Concrete curb and gutter, barrier (6%)	$13,952
25	Roofing, flat membrane (EPDM), elevator	$11,616
53	Pool furniture	$7,500
60	Lobby, furnishings	$6,000
69	Office, furniture	$3,000
99	Cooling tower (300 ton) replace	$59,350
100	Cooling tower VFD	$5,900
	Total Scheduled Replacements	$109,488

Item	2060 - YEAR 38	$
33	Balcony restoration	$100,000
34	Balcony rout and grout	$17,000
38	Entrance portico, roof	$29,898
39	Entrance portico, EIFS, recoating	$12,380
40	Entrance portico, EIFS, repair	$6,138
42	Entrance portico, light fixtures	$4,625
59	Lobby, flooring, slate, replace	$70,119
61	Lobby, redecorate	$20,000
62	Lobby, fancoil units	$7,500
63	Lobby, desk	$9,000
65	Lobby, interior lighting, general	$2,730
75	Trash room, flooring, vinyl tile	$3,456
77	Trash room, interior lighting, general	$1,260
	Total Scheduled Replacements	$284,105

Item	2061 - YEAR 39	$
9	Fountain structure	$105,400
20	Cooling tower enclosure	$30,000
56	Corridor, flooring, carpet	$252,348
	Total Scheduled Replacements	$387,748

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SECTION D - CONDITION ASSESSMENT

General Comments. Miller+Dodson Associates conducted a Reserve Study at Waterford Condominium in February 2021. Waterford Condominium is in generally good condition for a residential condominium, constructed in 1963. 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.

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

General Condition Statements.

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

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

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

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

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

SITE ITEMS

Entry Monument and Signage. The Association maintains an entry monument. The monument is made of brick and it is in fair condition, with open masonry joints and loose and broken masonry units.

The monument lettering is metal and is considered a long-life item, therefore, excluded from this study.

We recommend repointing and replacement of defective areas of the masonry as needed. The Association may want to consider applying a coating of Siloxane or other appropriate breathable sealants to mitigate water penetration and further degradation of the masonry work.

Concrete Work. The concrete work includes the community sidewalks, curbs, and gutter as well as other flatwork. The overall condition of the concrete work is in good condition.

The standards we use for recommending replacement are as follows:

- Trip hazard, ½ inch height difference.
- Severe cracking.
- Severe spalling and scale.

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

Asphalt Pavement. The Association is responsible for the parking areas within the community. In general, the Association's asphalt pavements is in poor condition.

The Defects noted include the following:

- **Open Cracks.** There are multiple locations where open cracks are allowing water to penetrate to the asphalt base and the bearing soils beneath. Over time, water will erode the base and accelerate the deterioration of the asphalt pavement. If cracks extend to the base and bearing materials, remove the damaged areas, and replace defective materials. As a part of normal maintenance, clean and fill all other cracks.
- **Alligatoring.** There are multiple locations where the asphalt has developed a pattern of cracking known as alligatoring. The primary cause of alligatoring is an unstable base. Once these cracks extend through the asphalt, they will allow water to penetrate to the base, accelerating the rate of deterioration, and eventually leading to

potholes. The only solution is to remove the defective asphalt, compact the base, and install new base materials and asphalt.

- **Improper Grading.** The asphalt pavement is not properly graded, resulting in the ponding of water. Proper grading of the asphalt pavement will require replacing portions of the asphalt. It may also require resetting improperly sloped curb and gutter segments that are not conveying water to the stormwater management system. If ponding is left unattended it can result in unsafe travel areas, by creating conditions for hydroplaning and pockets of ice to form.
- **Potholes.** Potholes have formed as the result of full-depth pavement failure, including base materials. The repair will require removal of the asphalt and base materials, installation and compaction of new base materials, and asphalt resurfacing.
- **Depressions.** There are areas where the asphalt surface is depressed due to deformation in the surface or underlying layers. These depressions may continue to grow with exposure to traffic. Water ponding is evident in several of these areas. Repair of these areas will require the removal of the asphalt and base material and reinstallation, by compacting the new base material and resurfacing with asphalt.

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

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

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

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

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

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

Site Lighting. The Association is responsible for the operation of the community's drive and walkway which is in fair condition. The site lighting is scheduled to be replaced in 2021.

This study assumes replacement of the light fixtures every 15 to 20 years, and pole replacement every 30 to 40 years. When the light poles are replaced, we assume that the underground wiring will also be replaced.

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

Additionally, new technology such as LED and LIFI, among others, is considered. The Association should consider factors such as environmental sustainability, longevity, and cost when they look at the replacement of their lighting.

Fountain. The Association maintains a decorative fountain. The fountain has a concrete structure and is surfaced along its perimeter with stone. The fountain is lined with a waterproof coating. A 1.5 horsepower pump powers the fountain. All components are reported to be in working order.

Unit Pavers. Unit pavers provide a solid, decorative, and renewable surface that is part of the community's plaza. The overall condition of the unit pavers is good condition with areas of defects consistent with the age of the installation.

The defects noted include the following:

- Settlement. We identified areas where pavers have settled due to a failure of the base under the pavers. This settlement has resulted in an uneven surface that can pose a trip hazard.
- Failed perimeter border. We observed areas of the perimeter border that have failed leading to separation of the unit pavers. This defect is hazardous and can cause additional defects to develop.

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

Unit pavers have a service life of 30 years or more if the system is maintained on a consistent periodic basis. Eventually the system will require a large-scale replacement, identical paver units may not be available and it is recommended that the unit paver system be replaced.

Retaining Walls. The Association maintains a poured concrete retaining walls.

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

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

Poured concrete retaining walls can have an extended useful life of 60 years or more, and if stable, may only require periodic localized repair. Siloxane or other breathable sealants should be considered to provide additional protection to the wall from water penetration. This study assumes that concrete repairs will be performed incrementally as needed.

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

Fencing. The Association maintains chain link fencing which is in fair condition. Fencing systems have a large number of configurations and finishes that can usually be repaired as a maintenance activity by replacing individual components as they become damaged or weathered.

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

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

The Association maintains steel fence posts and fasteners that are embedded in concrete or masonry.

As part of normal maintenance, we recommend the following:

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

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

Cooling Tower Enclosure. The building's cooling tower is located on ground level at the rear of the building. The tower is enclosed in a wooden fence. The enclosure needs to be expanded for the new generator.

EXTERIOR ITEMS

Building Roofing. The building is constructed with both an EDPM and Inverted Roofing system which are in good condition.

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 25 years.

An Inverted Roof or IRMA is constructed with the roofing membrane next to the roof deck. The roofing membrane is covered with rigid foam insulation and then held in place with stone ballast on the east and west wings and pavers on the center roof area. The Pavers are used as a walkingsurface.

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

Downspouts. The buildings have downspouts connect to roof scuppers. The downspouts are in good condition.

A downspout system will remove rainwater from the area of the building's roof, siding, and foundation, protect the exterior surfaces from water damage. Downspouts should be securely attached to the side of the structure. Any broken straps should be replaced.

Masonry. The brickwork on the building is in good condition.

Brick masonry is used as an accent exterior cladding of the building. 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 can have their surfaces affected and masonry units can become loose.

In general, masonry is considered 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 10 years after approximately 30 years.

Concrete Balconies. The Association maintains the concrete balconies of the building. The structural concrete balcony decks are in good condition, and the railings are in good condition.

We noted no significant defects. The balcony surfaces are coated.

Concrete balconies are prone to deterioration due to their exposure to the elements. This deterioration begins within the concrete and slowly progresses to the surface. By the time, it becomes visible, the damage has been done, and expensive remedial action is typically required.

The leading cause of concrete balcony deterioration is the corrosion of the embedded reinforcing steel. Water penetrates the concrete surface or enters the concrete through penetrations such as railing mounting holes, and when water meets the reinforcing steel, corrosion results. As the steel corrodes, it expands, putting pressure on the surrounding concrete. This pressure will eventually result in cracks, delamination, and spalling. The rate of corrosion is influenced by such factors as the thickness and density of the concrete, the rate of water infiltration, and the installation of carpet or other water-retaining materials on the balcony's surface.

We recommend for the Association implement an annual inspection and power-washing program. Installation of carpet or other water trapping coverings should be prohibited, and potted plants should be placed on raised feet to allow for proper air circulation and drying.

Additionally, we recommend the application of appropriate sealants or coatings to the top surface and exposed edges of the concrete deck, as well as recaulking all railing post mounted into the deck slab. The underside of the concrete deck should be left untreated or treated with a breathable finish to allow entrapped moisture to escape.

Please note that your State or local jurisdiction may have specific requirements for deck and balcony inspections, such as the recently enacted Maryland HB 947 (Jonathan's Law). This level of inspection is beyond the scope of work for this Reserve Study.

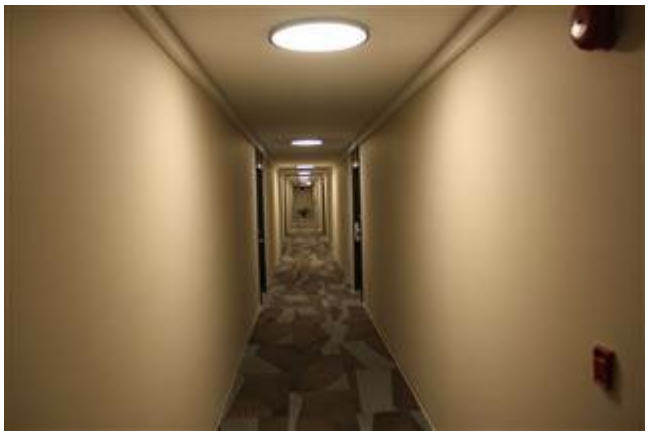
Swimming Pool. The community operates a rooftop steel-framed outdoor pool. Listed below are the major components of the pool facilities:

- Pool Shell. The steel framing shell for the swimming pool is in good condition.
- Pool Deck. The pool deck is an Inverted Roofing System with pavers as the ballast system. There is a plastic mat system on the pavers in the walking area around the pool. The overall condition of the deck is f*air* condition with tripping hazards.
- Fiberglass Coating. The fiberglass coating is in good condition. We have assumed service life of 45 years for the fiberglass coat.
- Waterline Tile. The waterline tile is in good condition. We have assumed that the waterline tile will be replaced or restored when the pool is refiberglassed.
- Coping. The pool is edged with precast coping. The coping is in good condition.
- Pump and Filter System. The filter system is in good operating condition.
- Pool Fence. The swimming pool is enclosed by a chain-link fence that is in fair condition.

(Continued on next page)

INTERIOR ITEMS

Corridors. The corridors in the building were last renovated 1 year ago. Listed below are the major corridor components that we have included in the Reserve Analysis:



- Carpet. The carpet in the building's corridors is in good condition. The commercial carpet of this construction in this type of application has a typical service life of 7 to 10 years.
    - To extend the life of the carpet, it is important that the Association continues with a comprehensive maintenance program that includes;
        - regular vacuuming, spot and spill removal,
        - interim cleaning of high traffic areas,
        - regularly scheduled cleanings.
        - It is also recommended that all entrances be fitted with walk-off mats to trap soil.
- Light Fixtures. Corridor illumination is provided by wall-mounted and ceiling mounted light fixtures. The fixtures use incandescent fluorescent compact fluorescent lamps. The fixtures are in good working condition but do not provide adequate lighting. Fixtures of this type have a typical service life of 25 years.
- Exit Lights. The building uses illuminated exit lights with emergency lights at each of the exits. The exit lights use incandescent compact fluorescent LED light sources. The general condition of the building's exit lights is good.
- Emergency Light Fixtures. The building uses battery-powered light fixtures for emergency lighting in the event of a power outage. The fixtures are equipped with incandescent compact fluorescent LED light sources. The fixtures are in good condition. Fixtures of this type have a typical service life of 20 years.
- Furnishings. We have included the furnishings from the corridors and elevator lobbies in the Reserve Analysis. We have assumed that the service life for the furniture is 15 years and that it will be replaced with similar items.

Common Interiors. The Association maintains the Lobby and Penthouse and other common interior spaces. The Lobby has been recently renovated while the Penthouse is in need of renovation.

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 to 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 refurnishing 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.

BUILDING SYSTEMS

Emergency Generator. The building is served by a 25 kW generator that is located location. The generator is approximately 25 years old and is in fair condition.

The generator does not currently serve the elevators, so a new generator will be installed adjacent to the cooling tower. The generator supplies power to the building's corridor lighting, stairwell lighting, heating system, HVAC system pumps, elevator and, fire pump.

Electrical Switchgear. The electrical switchgear includes the primary distribution equipment, disconnects, relays, fuses, and circuit breakers for the facility. The primary electrical switchgear dates to the original construction of the building. Electrical switchgear has a rated service life of 50 years or more. Electrical switchgear requires ongoing maintenance for proper operation and reliability.

The overall condition of the switchgear is good. We understand that replacement parts are still available for the equipment. As the switchgear continues to age, obtaining replacement parts can be expected to become more difficult. When parts no longer are available or when the condition of the switchgear deteriorates sufficiently, the Association will have to replace or upgrade the existing equipment. Therefore, we have included funding in the Reserve Analysis for distribution panel replacement on an incremental basis.

HVAC Control System. The facility's central heating and cooling plant are controlled by a pneumatic HVAC control system. Pneumatic systems of this type have a service life of 30 years.

Heating Boiler. Heat to the building is supplied by 2, hot water low-pressure boilers located in ground level mechanical room. The boilers are approximately 31 years old and are in fair condition.

Our assessment of the condition of the boiler is based on the age of the boiler, the conditions seen during the site visit, the reported maintenance history of the boiler, and conversations with maintenance personnel. 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 fair condition.

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. Cooling towers have a typical service life of 20 to 25 years.

Scroll Chiller. The chiller system associated with the cooling tower is reported to be in good working condition and is expected to have a service life of 15 to 25 years.

Two banks of scroll chillers supply chilled water to the facility. The chillers are estimated to be approximately 12 years old. Chillers of this type have a typical service life of 20 to 25 years.

Our assessment of the condition of the chiller is based on the age of the chiller, the conditions seen during the site visit, the reported maintenance history of the chiller, and conversations with maintenance personnel.

Heat Exchanger. Domestic hot water is generated using a shell-and-tube plate-and-frame heat exchanger attached to the central boiler system.

While heat exchangers are relatively low maintenance, long life items, eventually the buildup of scale on the heat exchanger surfaces or sludge in the tubes will reduce its operating efficiency. In addition, leaks can develop due to corrosion within the heat exchanger.

To protect the heat exchanger from fouling, sludge buildup, and leaks, it is recommended that the boiler water supplied to the heat exchanger undergo a chemical treatment program. Chemical treatment helps to eliminate the contaminants that cause scale and sludge, and to protect the interior surfaces from corrosion. In addition, the heat exchanger should be removed from service once every three to five years, cleaned, and inspected.

Circulation Pumps. There are four pumps located in the central plant that circulate the building heating, chilled, and condenser water; a 20 and a 40 horsepower pump for heating and chilled water, a 20 horsepower pump for condenser water and a 20 hp standby pump. The study includes replacing the 20 hp pimp with a 40 hp. New pumps will be VFD. A standpipe booster pump is also provided.

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 5 years.

Domestic Hot Water Boiler. Heat to the building's domestic hot water system is supplied by a single boiler. The boiler is approximately seven years old and is reported to be in good condition.




Building Piping. 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.

Because 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, including other types of pipes. In addition, 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 every 25 years is included in this study for repiping work. Please note that this work has a high degree of variability depending on the layout of the facility and accessibility to the piping components.

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 recommendations for replacement to maximize the remaining useful life of this facility's piping systems.

Elevators. The Association maintains three 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 of the major components of the facility's elevators have been developed utilizing a combination of sources 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 a minimal cost. At the time of a Reserve Study Update, this information can then be incorporated into the study.

Fire Safety Systems. The building is fitted with a fire safety system that includes alarms, and these are reported to be operating normally. Testing and inspection of fire safety systems are not included in this study.

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.

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 an allowance every 15 years for the major repair and upgrade of the fire safety systems. A detailed evaluation of the facility'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.

Building Access. The building is an access-controlled facility with electrically operated doors activated by keypads and key fobs.

Systems of this type typically have a service life of 15 to 20 years. Beyond that point, it becomes increasingly difficult to find replacement parts. Additionally, changes in technology help render the systems obsolete. For these reasons, we have assumed a 15-year service life for this type of system.

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

End of Condition Assessment

1. COMMON INTEREST DEVELOPMENTS - AN OVERVIEW

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

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

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

2. REPLACEMENT RESERVE STUDY

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

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

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

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

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

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

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

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

3. METHODS OF ANALYSIS

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

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

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

4. REPLACEMENT RESERVE STUDY DATA

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

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

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

5. DEFINITIONS

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

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

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

Component Analysis. See Component Method, above.

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

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

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

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

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

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

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

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

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

Number of Years of the Study. The numbers of years into the future for which expenditures are projected and reserve levels calculated. This number should be large enough to include the projected replacement of every item on the schedule, at least once. The Reserve Study must cover a minimum of 20 years to comply with the National Reserve Study Standards. However, your study covers a 40-year period.

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

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

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

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

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

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

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

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What is a Reserve Study?
Who are we?

https://youtu.be/m4BcOE6q3Aw

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

https://youtu.be/40SodajTW1g

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

https://youtu.be/pYSMZO13VjQ

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

https://youtu.be/Qx8WHB9Cgnc

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

https://youtu.be/ZfBoAEhtf3E

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

https://youtu.be/1J2h7FIU3qw

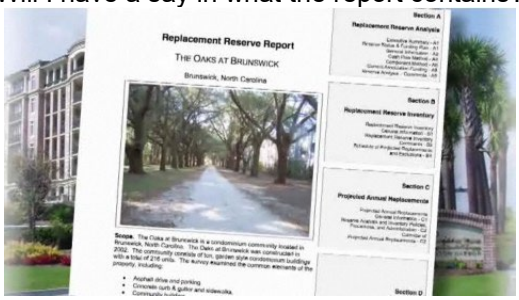
What is my role as a community Board Member?
Will a Reserve Study meet my needs?

https://youtu.be/aARD1B1Oa3o

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

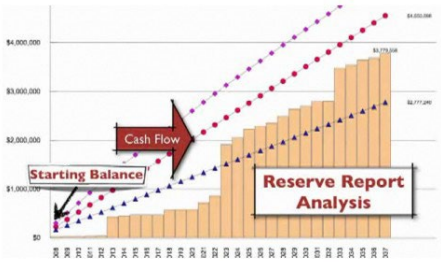
https://youtu.be/diZfM1IyJYU

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



https://youtu.be/qCeVJhFf9ag

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

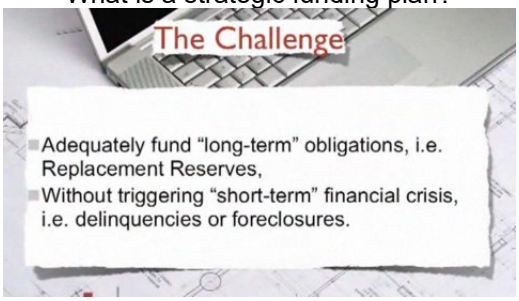


https://youtu.be/SePdwVDvHWI

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

https://youtu.be/W8CDLwRIv68

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



https://youtu.be/hIxV9X1tIcA