

# Carrollsborg Square Condominium Association (CSCA)

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Jonathan Beeton, Treasurer  
319 N Street SW  
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June 21, 2023

Dear Fellow Carrollsborg Square Neighbor,

Attached is the 2022 Reserve Replacement Report. This report is ordered by the Association every 3-5 years to ensure that the Association is setting aside proper funds in reserve for future expenses. The report was produced by Miller Dodson Associates, a firm with thirty years of experience in this field and nationally recognized as one of the leading firms in the Reserve Study field.

The attached report analyzes the expected 40-year life-span and replacement costs of items that are the condominium's responsibility and the reserves needed to meet those costs without the need for unexpected special assessments that can cause undue hardship on residents.

**One important note:** This report projects a yearly \$55,000 and \$11,000 expense for masonry (tuckpointing) and wood fence repair/replacement coming out of reserves. We currently pay for these items out of our operating expenses, as such, recommended replacement reserve contributions should deduct the \$66,000 annually. Over forty years that amount is \$2.64 million, so please understand that shortfall is accounted for through our annual budget operating expenditures, rather than from reserve expenditures.

Please also note that, deducting for the \$66,000 the reserve contribution recommended would be an annual reserve contribution in 2023 of \$102,627 and we currently assess \$125,000. But it also assumed a reserve contribution of \$93,082 in 2022 when we only budgeted for \$78,461 last year. As we explained in our budget for 2023, we needed to increase reserve contributions to cover roofing costs which had gone up disproportionately due to supply chain issues, labor shortages, etc.

I'm proud to present this report to the Association and proud that we remain on a solid financial footing preparing for the financial stability of our association for decades to come.

Sincerely,

Jonathan Beeton, Treasurer  
Carrollsborg Square Condominium Association

# LEVEL 2 REPLACEMENT RESERVE REPORT FY 2022 CARROLLSBURG SQUARE



LEVEL 2 REPLACEMENT RESERVE REPORT FY 2022  
CARROLLSBURG SQUARE

Community Management by:

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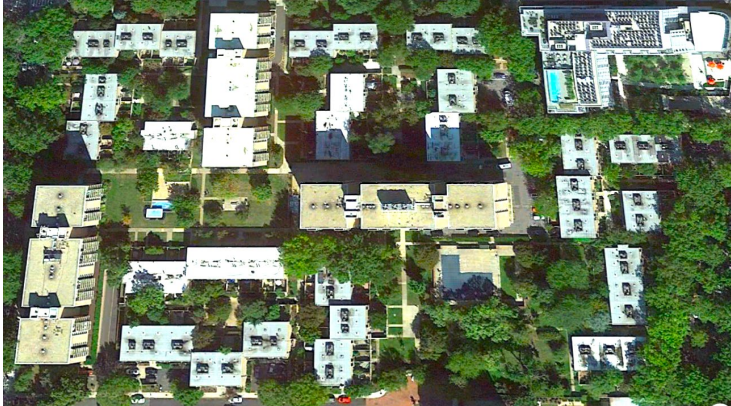
**millerdodson**  
Capital Reserve Consultants

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# REPLACEMENT RESERVE REPORT

## CARROLLSBURG SQUARE

WASHINGTON, DISTRICT OF COLUMBIA  
May 19, 2023



**Description.** Carrollsburg Square is a residential condominium association located in Southwest, Washington, District of Columbia. Constructed in 1967, the community consists of twelve building clusters containing 102 townhouse residences. The survey examined the common elements of the property, including:

- Asphalt drives and parking bays.
- Concrete curb, sidewalk, leadworks, and other concrete flatwork.
- Fencing, and entry gates.
- Site and exterior lighting.
- Brick and wood privacy walls.
- Domestic water sanitary and stormwater utilities.
- Buildings' roofing and brick envelope.

### EXECUTIVE SUMMARY

This Reserve Study has been prepared for the Carrollsburg Square 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 \$782,984. The reported Current Annual Funding for Reserves is \$78,461. The Recommended Annual Reserve Funding level for 2022 is \$159,082.

There are several reasons for the significant increase in Annual Reserve Funding levels shown above. First, the high inflation rate in today's construction industry is pushing the replacement costs higher. Second, the Current Reserve Funding amount is below the amount that was recommended in the previous Reserve Study from 2017. Lastly, funding for Roof Restoration has been included which will extend the life of the current roofs.

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

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### Section A

#### Replacement Reserve Analysis

Financial Analysis - A1  
General Information - A2  
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### Section B

#### Replacement Reserve Inventory

Replacement Reserve Inventory  
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#### Projected Annual Replacements

Projected Annual Replacements  
General Information - C1  
Calendar of  
Projected Annual Replacements - C2

### Section D

#### Condition Assessment

### Appendix

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

**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, Inc. 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 web site, we have developed [videos](#) addressing frequently asked topics. In addition, there are posted [links](#) covering a variety of subjects under the resources page of our web site at [mdareserves.com](http://mdareserves.com).

**Purpose.** The purpose of this Replacement Reserve Study is to provide Carrollsburg Square (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 April 22, 2022 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 Jon Carmichael, Board President and Carlus Richardson Operations Manager. who provided very helpful insight into the current operations of the property.

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

Respectfully Submitted,



*Brian J. Oates*

Brian J. Oates

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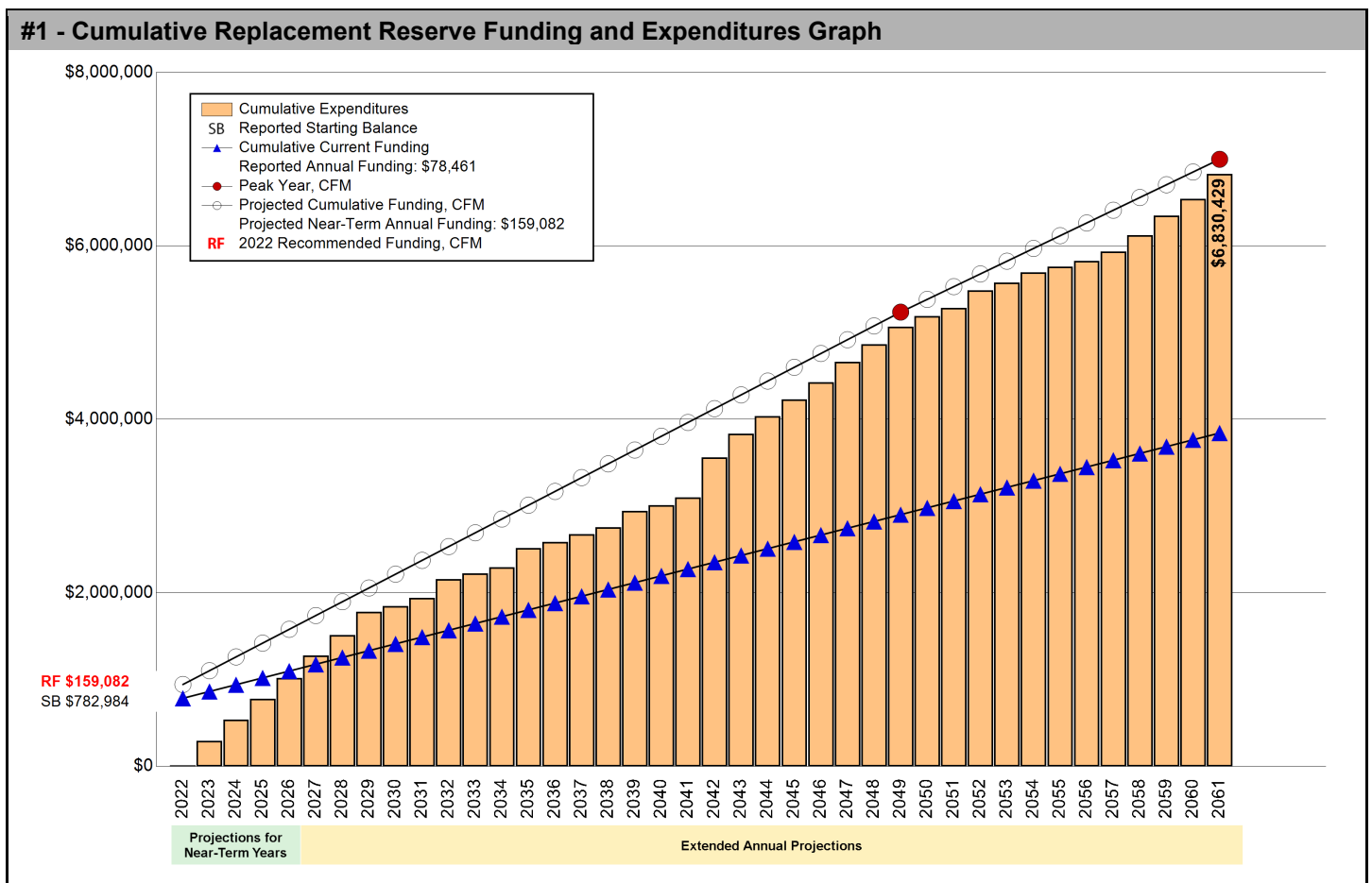
## SECTION A - FINANCIAL ANALYSIS

The Carrollsborg Square Replacement Reserve Analysis uses the Cash Flow Method (CFM) to calculate Replacement Reserve funding for the periodic replacement of the 50 Projected Replacements identified in the Replacement Reserve Inventory.

**\$159,082** RECOMMENDED REPLACEMENT RESERVE FUNDING FOR THE STUDY YEAR, 2022  
 \$129.97 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.

Carrollsborg Square reports a Starting Balance of \$782,984 and Annual Funding totaling \$78,461, which is inadequate to fund projected replacements starting in 2027. See Page A.3 for a more detailed evaluation.



There are several reasons for the significant increase in Annual Reserve Funding levels shown above. First, the high inflation rate in today’s construction industry is pushing the replacement costs higher. Second, the Current Reserve Funding amount is below the amount that was recommended in the previous Reserve Study from 2017. Lastly, funding for Roof Restoration has been included which will extend the life of the current roofs.

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



**REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION**

The Carrollsborg Square 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

**\$782,984 | STARTING BALANCE**

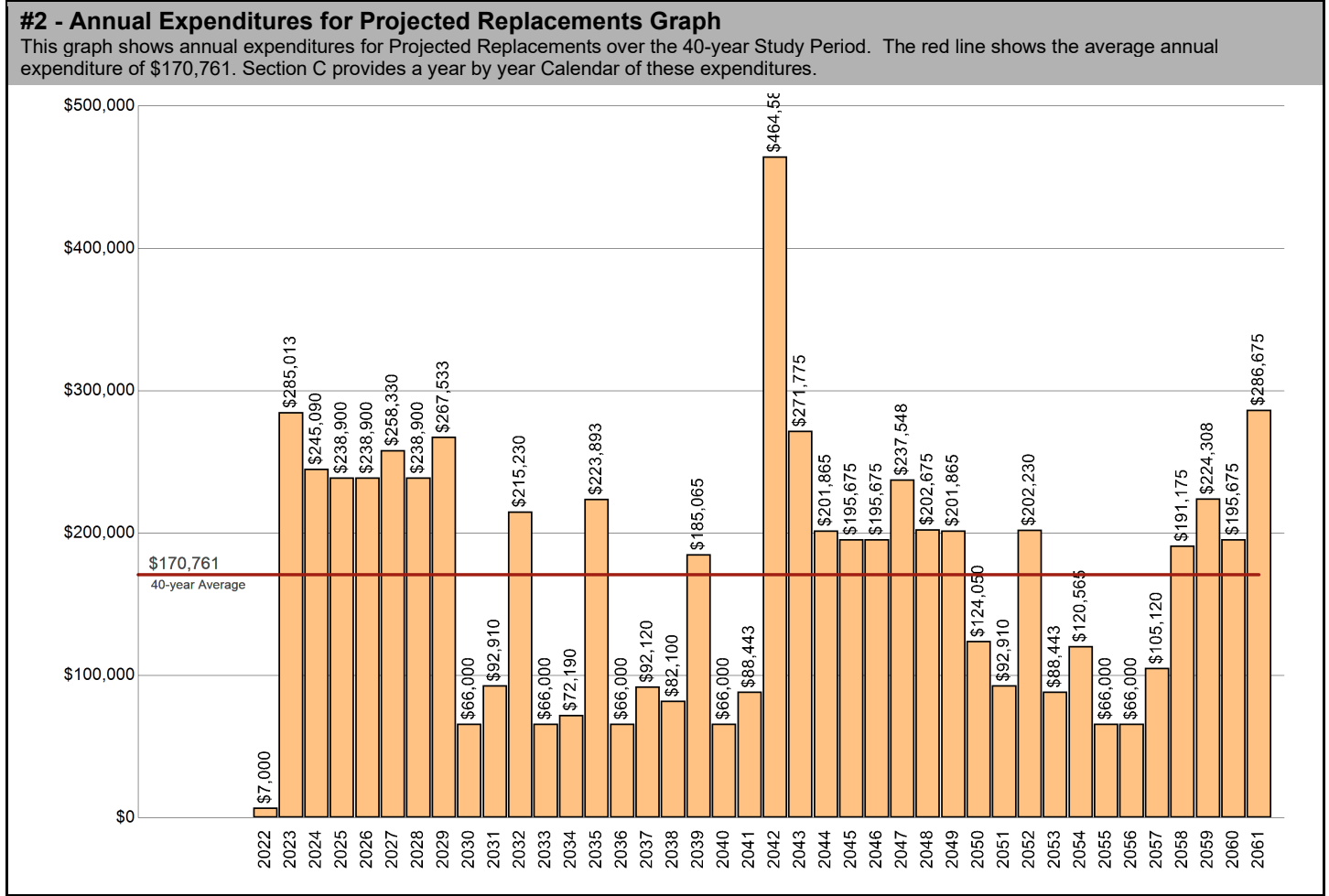
The Association reports Replacement Reserves on Deposit totaling \$782,984 at the start of the Study Year.

**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).

**\$6,830,429 | REPLACEMENT RESERVE INVENTORY - PROJECTED REPLACEMENTS**

The Carrollsborg Square Replacement Reserve Inventory identifies 50 items that will require periodic replacement, which are to be funded from Replacement Reserves. We estimate the cost of these replacements will be \$6,830,429 over the 40-year Study Period. The Projected Replacements are divided into 2 major categories starting on Page B.3. Pages B.1-B.2 provide detailed information on the Replacement Reserve Inventory.



**UPDATING 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 \$6,830,429 of Projected Expenditures over the 40-year Study Period and the impact of the Association continuing to fund Replacement Reserves at the current level are detailed in Table 3.

<b>#3 - Table of Annual Expenditures and Current Funding Data - Years 1 through 40</b>										
Year	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031
Starting Balance	\$782,984									
Projected Replacements	(\$7,000)	(\$285,013)	(\$245,090)	(\$238,900)	(\$238,900)	(\$258,330)	(\$238,900)	(\$267,533)	(\$66,000)	(\$92,910)
Annual Deposit	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461
End of Year Balance	\$854,445	\$647,893	\$481,264	\$320,825	\$160,386	(\$19,483)	(\$179,922)	(\$368,994)	(\$356,533)	(\$370,982)
Cumulative Expenditures	(\$7,000)	(\$292,013)	(\$537,103)	(\$776,003)	(\$1,014,903)	(\$1,273,233)	(\$1,512,133)	(\$1,779,666)	(\$1,845,666)	(\$1,938,576)
Cumulative Receipts	\$861,445	\$939,906	\$1,018,367	\$1,096,828	\$1,175,289	\$1,253,750	\$1,332,211	\$1,410,672	\$1,489,133	\$1,567,594
Year	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Projected Replacements	(\$215,230)	(\$66,000)	(\$72,190)	(\$223,893)	(\$66,000)	(\$92,120)	(\$82,100)	(\$185,065)	(\$66,000)	(\$88,443)
Annual Deposit	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461
End of Year Balance	(\$507,751)	(\$495,290)	(\$489,019)	(\$634,451)	(\$621,990)	(\$635,649)	(\$639,288)	(\$745,891)	(\$733,430)	(\$743,413)
Cumulative Expenditures	(\$2,153,806)	(\$2,219,806)	(\$2,291,996)	(\$2,515,889)	(\$2,581,889)	(\$2,674,009)	(\$2,756,109)	(\$2,941,173)	(\$3,007,173)	(\$3,095,617)
Cumulative Receipts	\$1,646,055	\$1,724,516	\$1,802,977	\$1,881,438	\$1,959,899	\$2,038,360	\$2,116,821	\$2,195,282	\$2,273,743	\$2,352,204
Year	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
Projected Replacements	(\$464,584)	(\$271,775)	(\$201,865)	(\$195,675)	(\$195,675)	(\$237,548)	(\$202,675)	(\$201,865)	(\$124,050)	(\$92,910)
Annual Deposit	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461
End of Year Balance	(\$1,129,536)	(\$1,322,850)	(\$1,446,253)	(\$1,563,467)	(\$1,680,681)	(\$1,839,769)	(\$1,963,983)	(\$2,087,386)	(\$2,132,975)	(\$2,147,424)
Cumulative Expenditures	(\$3,560,201)	(\$3,831,976)	(\$4,033,840)	(\$4,229,515)	(\$4,425,190)	(\$4,662,739)	(\$4,865,414)	(\$5,067,278)	(\$5,191,328)	(\$5,284,238)
Cumulative Receipts	\$2,430,665	\$2,509,126	\$2,587,587	\$2,666,048	\$2,744,509	\$2,822,970	\$2,901,431	\$2,979,892	\$3,058,353	\$3,136,814
Year	2052	2053	2054	2055	2056	2057	2058	2059	2060	2061
Projected Replacements	(\$202,230)	(\$88,443)	(\$120,565)	(\$66,000)	(\$66,000)	(\$105,120)	(\$191,175)	(\$224,308)	(\$195,675)	(\$286,675)
Annual Deposit	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461	\$78,461
End of Year Balance	(\$2,271,193)	(\$2,281,175)	(\$2,323,279)	(\$2,310,818)	(\$2,298,357)	(\$2,325,016)	(\$2,437,730)	(\$2,583,577)	(\$2,700,791)	(\$2,909,005)
Cumulative Expenditures	(\$5,486,468)	(\$5,574,911)	(\$5,695,476)	(\$5,761,476)	(\$5,827,476)	(\$5,932,596)	(\$6,123,771)	(\$6,348,079)	(\$6,543,754)	(\$6,830,429)
Cumulative Receipts	\$3,215,275	\$3,293,736	\$3,372,197	\$3,450,658	\$3,529,119	\$3,607,580	\$3,686,041	\$3,764,502	\$3,842,963	\$3,921,424

**EVALUATION OF CURRENT FUNDING**

The evaluation of Current Funding (Starting Balance of \$782,984 & annual funding of \$78,461) 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 50 Projected Replacements identified in the Replacement Reserve Inventory and that the Association will continue Annual Funding of \$78,461 throughout the 40-year Study Period.

Annual Funding of \$78,461 is approximately 49 percent of the \$159,082 recommended Annual Funding calculated by the Cash Flow Method for 2022, the Study Year.

See the Executive Summary for the Current Funding Statement.

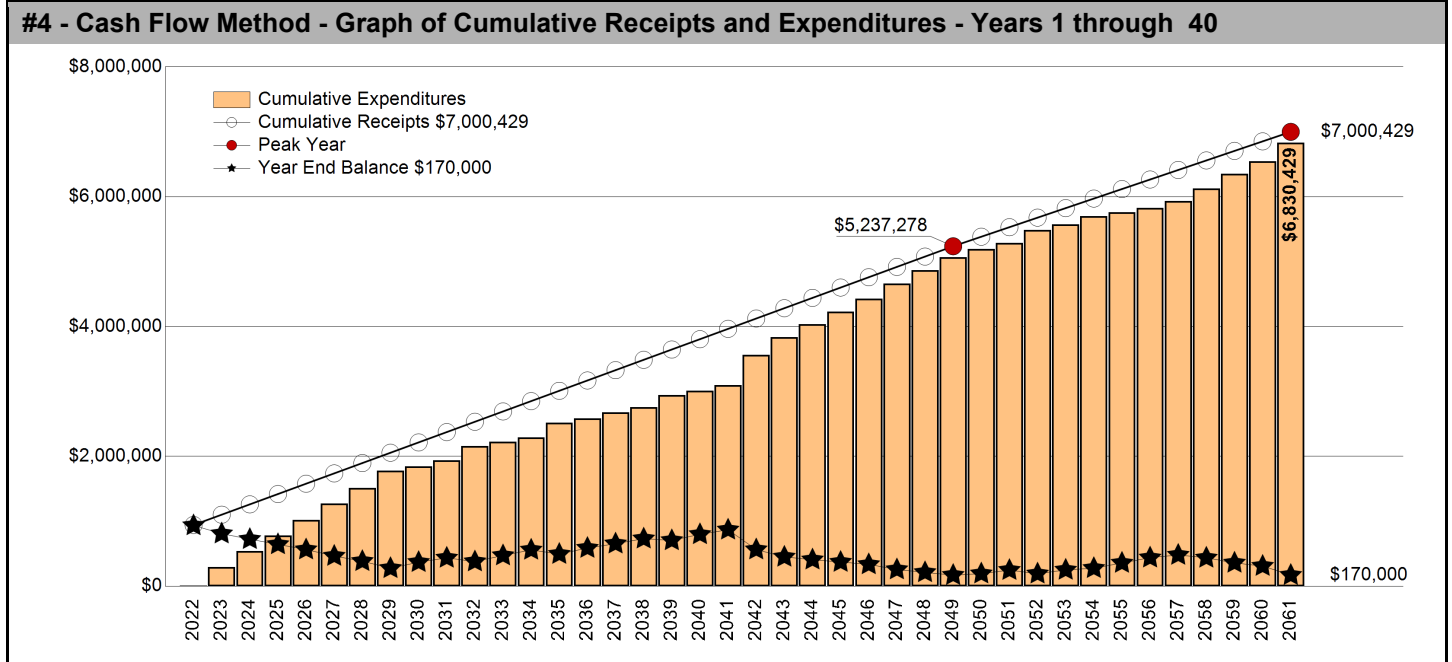
# CASH FLOW METHOD FUNDING

## \$159,082 RECOMMENDED REPLACEMENT RESERVE FUNDING FOR 2022

\$129.97 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 2049 with Replacement Reserves on Deposit dropping to the Minimum Balance after the completion of \$5,067,278 of replacements from 2022 to 2049. Recommended funding is anticipated to decline in 2050. Peak Years are identified in Chart 4 and Table 5.
- Threshold (Minimum Balance).** The calculations assume a Minimum Balance of \$170,000 will always be held in reserve, which is calculated by rounding the 12-month 40-year average annual expenditure of \$170,761 as shown on Graph #2.
- Cash Flow Method Study Period.** Cash Flow Method calculates funding for \$6,830,429 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.



### #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	\$782,984									
Projected Replacements	(\$7,000)	(\$285,013)	(\$245,090)	(\$238,900)	(\$238,900)	(\$258,330)	(\$238,900)	(\$267,533)	(\$66,000)	(\$92,910)
Annual Deposit	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082
End of Year Balance	\$935,066	\$809,135	\$723,127	\$643,309	\$563,491	\$484,243	\$384,425	\$275,974	\$369,056	\$435,228
Cumulative Expenditures	(\$7,000)	(\$292,013)	(\$537,103)	(\$776,003)	(\$1,014,903)	(\$1,273,233)	(\$1,512,133)	(\$1,779,666)	(\$1,845,666)	(\$1,938,576)
Cumulative Receipts	\$942,066	\$1,101,148	\$1,260,230	\$1,419,312	\$1,578,394	\$1,737,476	\$1,896,558	\$2,055,639	\$2,214,721	\$2,373,803
Year	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Projected Replacements	(\$215,230)	(\$66,000)	(\$72,190)	(\$223,893)	(\$66,000)	(\$92,120)	(\$82,100)	(\$185,065)	(\$66,000)	(\$88,443)
Annual Deposit	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082
End of Year Balance	\$379,079	\$472,161	\$559,054	\$494,242	\$587,324	\$654,286	\$731,268	\$705,285	\$798,367	\$869,006
Cumulative Expenditures	(\$2,153,806)	(\$2,219,806)	(\$2,291,996)	(\$2,515,889)	(\$2,581,889)	(\$2,674,009)	(\$2,756,109)	(\$2,941,173)	(\$3,007,173)	(\$3,095,617)
Cumulative Receipts	\$2,532,885	\$2,691,967	\$2,851,049	\$3,010,131	\$3,169,213	\$3,328,295	\$3,487,377	\$3,646,459	\$3,805,541	\$3,964,623
Year	2042	2043	2044	2045	2046	2047	2048	1st Peak - 2049	2050	2051
Projected Replacements	(\$464,584)	(\$271,775)	(\$201,865)	(\$195,675)	(\$195,675)	(\$237,548)	(\$202,675)	(\$201,865)	(\$124,050)	(\$92,910)
Annual Deposit	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$159,082	\$146,929	\$146,929
End of Year Balance	\$563,504	\$450,811	\$408,028	\$371,435	\$334,842	\$256,376	\$212,783	\$170,000	\$192,879	\$246,898
Cumulative Expenditures	(\$3,560,201)	(\$3,831,976)	(\$4,033,840)	(\$4,229,515)	(\$4,425,190)	(\$4,662,739)	(\$4,865,414)	(\$5,067,278)	(\$5,191,328)	(\$5,284,238)
Cumulative Receipts	\$4,123,705	\$4,282,787	\$4,441,869	\$4,600,950	\$4,760,032	\$4,919,114	\$5,078,196	\$5,237,278	\$5,384,207	\$5,531,137
Year	2052	2053	2054	2055	2056	2057	2058	2059	2060	2nd Peak - 2061
Projected Replacements	(\$202,230)	(\$88,443)	(\$120,565)	(\$66,000)	(\$66,000)	(\$105,120)	(\$191,175)	(\$224,308)	(\$195,675)	(\$286,675)
Annual Deposit	\$146,929	\$146,929	\$146,929	\$146,929	\$146,929	\$146,929	\$146,929	\$146,929	\$146,929	\$146,929
End of Year Balance	\$191,598	\$250,084	\$276,448	\$357,377	\$438,307	\$480,116	\$435,870	\$358,492	\$309,746	\$170,000
Cumulative Expenditures	(\$5,486,468)	(\$5,574,911)	(\$5,695,476)	(\$5,761,476)	(\$5,827,476)	(\$5,932,596)	(\$6,123,771)	(\$6,348,079)	(\$6,543,754)	(\$6,830,429)
Cumulative Receipts	\$5,678,066	\$5,824,995	\$5,971,924	\$6,118,854	\$6,265,783	\$6,412,712	\$6,559,641	\$6,706,571	\$6,853,500	\$7,000,429

## 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.

### **\$159,082** 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.

### **\$168,627** 2023 - INFLATION ADJUSTED FUNDING

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

- Replacement Reserves on Deposit totaling \$935,066 on January 1, 2023.
- All 2022 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than \$7,000.
- Construction Cost Inflation of 6.00 percent in 2022.

The \$168,627 inflation adjusted funding in 2023 is a 5.99 percent increase over the non-inflation adjusted funding of \$159,082.

### **\$178,744** 2024 - INFLATION ADJUSTED FUNDING

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

- Replacement Reserves on Deposit totaling \$663,369 on January 1, 2024.
- All 2023 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than \$289,397.
- Construction Cost Inflation of 6.00 percent in 2023.

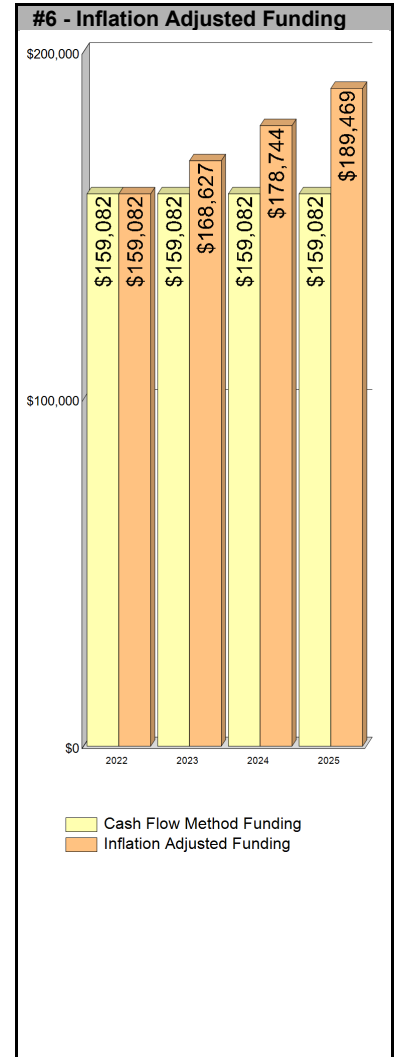
The \$178,744 inflation adjusted funding in 2024 is a 12.35 percent increase over the non-inflation adjusted funding of \$159,082.

### **\$189,469** 2025 - INFLATION ADJUSTED FUNDING

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

- Replacement Reserves on Deposit totaling \$767,938 on January 1, 2025.
- All 2024 Projected Replacements listed on Page C.2 accomplished at a cost to Replacement Reserves less than \$189,836.
- Construction Cost Inflation of 6.00 percent in 2024.

The \$189,469 inflation adjusted funding in 2025 is a 19.10 percent increase over the non-inflation adjusted funding of \$159,082.



### 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 \$8,590 on an average balance of \$859,025, \$7,992 on an average balance of \$799,217 in 2023, and \$7,157 on \$715,654 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 \$159,082 to \$150,492 (a 5.39 percent reduction), \$168,627 to \$160,635 in 2023 (a 4.73 percent reduction), and \$178,744 to \$171,588 in 2024 (a 4.00 percent reduction).

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## SECTION B - REPLACEMENT RESERVE INVENTORY

- **PROJECTED REPLACEMENTS.** Carrollsborg Square - Replacement Reserve Inventory identifies 50 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 \$3,097,367. Cumulative Replacements totaling \$6,830,429 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 50 items included in the Carrollsborg Square Replacement Reserve Inventory are divided into 2 major categories. Each category is printed on a separate page, beginning on page B.3.
- **LEVEL OF SERVICE.** This Replacement Reserve Inventory has been developed in compliance with the standards established for a Level 2 Update, as defined by the National Reserve Study Standards, established in 1998 by Community Associations Institute, which states:

*This study has been performed as a Level 2 Update with Site Visit/On-Site Review as defined by the Community Associations Institute's, National Reserve Study Standards. As such, the component inventory is based on the study that was performed by Miller-Dodson Associates, Inc. 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 50 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 50 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	Asphalt pavement, mill and overlay	sf	11,335	\$2.00	20	1	\$22,670
2	Asphalt pavement, seal coat	sf	11,335	\$0.22	5	2	\$2,494
3	Asphalt pavement, mill and overlay	sf	13,455	\$2.00	20	9	\$26,910
4	Asphalt pavement, seal coat	sf	13,455	\$0.22	5	2	\$2,960
5	Asphalt pavement, mill and overlay	sf	3,345	\$2.00	20	15	\$6,690
6	Asphalt pavement, seal coat	sf	3,345	\$0.22	5	2	\$736
7	Concrete curb (6%)	ft	128	\$35.50	6	1	\$4,544
8	Concrete flatwork (6%)	sf	1,356	\$13.20	6	1	\$17,899
9	Concrete steps and stoop (allowance)	ls	1	\$10,000.00	10	10	\$10,000
10	Fence, 6' aluminum picket, perimeter	ft	940	\$53.60	45	20	\$50,384
11	Fencing internal pedestrian & gate (allowance)	ls	1	\$4,600.00	10	10	\$4,600
12	Fence, 6' wood board privacy fencing & gate	ls	1	\$11,000.00	1	1	\$11,000
13	Metal pipe railing, 1 strand (10% replace allowance)	ft	36	\$52.50	5	5	\$1,890
14	Slide gate actuator	ea	2	\$6,500.00	25	10	\$13,000
15	Vehicular entry gate access/software	ea	1	\$1,400.00	10	10	\$1,400
16	Site light, standard single head, LED	ea	7	\$360.00	25	21	\$2,520
17	Site light, 10' aluminum pole	ea	7	\$2,300.00	30	16	\$16,100
18	Lighting, unit entry fixtures	ea	114	\$325.00	25	21	\$37,050
19	Lighting, privacy wall lamps	ea	102	\$180.00	25	21	\$18,360
20	Domestic water lateral piping (10% allowance)	lf	210	\$190.00	10	10	\$39,900
Replacement Costs - Page Subtotal							\$291,107

COMMENTS
<ul style="list-style-type: none"> <li>Item #1: Asphalt pavement, mill and overlay - 3rd Street SW., extension roadway, and parking bays.</li> <li>Item #3: Asphalt pavement, mill and overlay - Delaware Avenue SW. parking area.</li> <li>Item #5: Asphalt pavement, mill and overlay - N Street SW. parking areas.</li> <li>Item #12: Fence, 6' wood board privacy fencing &amp; gate (allowance) - The figure is taken from the Association budget statement.</li> </ul>



SITE ITEMS - (cont.) 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	Domestic water cut-off valve (allowance)	ea	1	\$7,000.00	40	none	\$7,000	
22	Domestic water cut-off valve (allowance)	ea	13	\$7,000.00	40	39	\$91,000	
23	Sanitary/wastewater lateral piping (10% allowance)	lf	210	\$160.00	10	10	\$33,600	
24	Stormwater leaders at rooftop drain (10%	lf	140	\$120.00	10	10	\$16,800	
25	Stormwater inlet & piping (10% allowance )	ea	7	\$1,500.00	10	10	\$10,500	
26	Maintenance shed	ls	1	\$7,000.00	25	1	\$7,000	
Replacement Costs - Page Subtotal							\$165,900	

COMMENTS

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 (\$)	
27	Roof, restoration system	sf	8,345	\$20.00	100	1	\$166,900	
28	Roof restoration system	sf	8,645	\$20.00	100	2	\$172,900	
29	Roof restoration system	sf	8,645	\$20.00	100	3	\$172,900	
30	Roof restoration system	sf	8,645	\$20.00	100	4	\$172,900	
31	Roof restoration system	sf	8,645	\$20.00	100	5	\$172,900	
32	Roof restoration system	sf	8,645	\$20.00	100	6	\$172,900	
33	Roof restoration system	sf	8,645	\$20.00	100	7	\$172,900	
34	Roof restoration system	sf	3,870	\$20.00	100	13	\$77,400	
35	Roof restoration system	sf	3,225	\$20.00	100	17	\$64,500	
36	Roof, coating	sf	3,870	\$15.00	15	13	\$58,050	
37	Roof, coating	sf	3,225	\$15.00	15	17	\$48,375	
38	Roof, coating	sf	8,345	\$15.00	15	21	\$125,175	
39	Roof, coating	sf	8,645	\$15.00	15	22	\$129,675	
40	Roof, coating	sf	8,645	\$15.00	15	23	\$129,675	
41	Roof, coating	sf	8,645	\$15.00	15	24	\$129,675	
42	Roof, coating	sf	8,645	\$15.00	15	25	\$129,675	
43	Roof, coating	sf	8,645	\$15.00	15	26	\$129,675	
44	Roof, coating	sf	8,645	\$15.00	15	27	\$129,675	
45	Rooftop ventilation turbine fan (10% allowance)	ea	20	\$100.00	5	5	\$2,000	
46	Rooftop 4' metal HVAC surround (10% allowance)	lf	210	\$24.00	5	5	\$5,040	
47	Exterior envelope tuckpointing & balcony repair	ls	1	\$55,000.00	1	1	\$55,000	
48	Brick privacy wall allowance	ls	1	\$10,500.00	5	5	\$10,500	
49	Meter bank, 1600 amp, 8 meters	ea	13	\$9,050.00	60	20	\$117,650	
50	Electric switchgear, 2,000 amp	ea	12	\$7,860.00	60	20	\$94,320	
Replacement Costs - Page Subtotal							\$2,640,360	

COMMENTS
<ul style="list-style-type: none"> <li>Item #27: Roof, restoration system - 200-204, 206-212 M Street SW. &amp; 1233-43 Delaware Ave. SW.</li> <li>Item #34: Roof restoration system - 1289-1299 Delaware Ave., SW. resurfaced in 2015.</li> <li>Item #35: Roof restoration system - 228-236 3rd Street SW. resurfaced in 2019.</li> <li>Item #36: Roof, coating - 1289-1299 Delaware Ave. SW.</li> <li>Item #37: Roof, coating - 228-236 3rd Street SW.</li> <li>Item #38: Roof, coating - 200-204, 206-212 M Street SW. &amp; 1233-43 Delaware Ave. SW.</li> <li>Item #47: Exterior envelope tuckpointing &amp; balcony repair allow. - Amount programmed is the budgeted, historical expenditure for repairs.</li> </ul>

VALUATION EXCLUSIONS								
Excluded Items								
ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	REPLACEMENT COST (\$)	UNIT REL	REL	REPLACEMENT COST (\$)	
	Miscellaneous signage							EXCLUDED
	Sprinkler head							EXCLUDED

VALUATION EXCLUSIONS
Comments
<ul style="list-style-type: none"> <li>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.</li> <li>The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.</li> </ul>

LONG-LIFE EXCLUSIONS							
Excluded Items							
ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	REPLACEMENT COST (\$)	UNIT REL	REL	REPLACEMENT COST (\$)
	Masonry features						EXCLUDED
	Miscellaneous culverts						EXCLUDED
	Exterior brick veneer						EXCLUDED
	Building foundation(s)						EXCLUDED
	Concrete floor slabs (interior)						EXCLUDED
	Wall, floor, and roof structure						EXCLUDED
	Electrical wiring						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							EXCLUDED
	Unit doors							EXCLUDED
	Unit skylights							EXCLUDED
	Unit deck, patio, and/or balcony							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	REPLACEMENT COST (\$)	UNIT REL	REL	REPLACEMENT COST (\$)
	Primary electric feeds						EXCLUDED
	Electric transformers						EXCLUDED
	Cable TV systems and structures						EXCLUDED
	Telephone cables and structures						EXCLUDED
	Gas mains and meters						EXCLUDED
	Water mains and meters						EXCLUDED
	Sanitary mains/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
	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, lighting						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.



IRRIGATION SYSTEM EXCLUSIONS								
Excluded Items								
ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	REPLACEMENT COST (\$)	UNIT REL	REL	REPLACEMENT COST (\$)	
	Subsurface irrigation pipe							EXCLUDED
	Subsurface irrigation valve							EXCLUDED
	Subsurface irrigation control wiring							EXCLUDED
	Irrigation control system							EXCLUDED
	Irrigation system electrical service							EXCLUDED

**IRRIGATION SYSTEM EXCLUSIONS**  
 Comments

- Irrigation System Exclusions. We have assumed that the maintenance, repair, and periodic replacement of the components of the extensive irrigation systems at the property will not be funded from Replacement Reserves. These systems should be inspected each spring when the systems are brought online and again each fall when they are winterized. Repair(s) and or replacement(s) should be made in conjunction with these semiannual inspections.

## SECTION C - CALENDAR OF PROJECTED ANNUAL REPLACEMENTS

**GENERAL STATEMENT.** The 50 Projected Replacements in the Carrollsborg Square 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	\$	Item	2023 - YEAR 1	\$
21	Domestic water cut-off valve (allowance)	\$7,000	1	Asphalt pavement, mill and overlay	\$22,670
			7	Concrete curb (6%)	\$4,544
			8	Concrete flatwork (6%)	\$17,899
			12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			26	Maintenance shed	\$7,000
			27	Roof, restoration system	\$166,900
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$7,000	Total Scheduled Replacements		\$285,013

Item	2024 - YEAR 2	\$	Item	2025 - YEAR 3	\$
2	Asphalt pavement, seal coat	\$2,494	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
4	Asphalt pavement, seal coat	\$2,960	29	Roof restoration system	\$172,900
6	Asphalt pavement, seal coat	\$736	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000			
28	Roof restoration system	\$172,900			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
Total Scheduled Replacements		\$245,090	Total Scheduled Replacements		\$238,900

Item	2026 - YEAR 4	\$	Item	2027 - YEAR 5	\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
30	Roof restoration system	\$172,900	13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	31	Roof restoration system	\$172,900
			45	Rooftop ventilation turbine fan (10% allowance)	\$2,000
			46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
			48	Brick privacy wall allowance	\$10,500
Total Scheduled Replacements		\$238,900	Total Scheduled Replacements		\$258,330

**PROJECTED REPLACEMENTS**

2028 - YEAR 6			2029 - YEAR 7		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	2	Asphalt pavement, seal coat	\$2,494
32	Roof restoration system	\$172,900	4	Asphalt pavement, seal coat	\$2,960
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	6	Asphalt pavement, seal coat	\$736
			7	Concrete curb (6%)	\$4,544
			8	Concrete flatwork (6%)	\$17,899
			12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			33	Roof restoration system	\$172,900
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$238,900	Total Scheduled Replacements		\$267,533

2030 - YEAR 8			2031 - YEAR 9		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	3	Asphalt pavement, mill and overlay	\$26,910
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$66,000	Total Scheduled Replacements		\$92,910

2032 - YEAR 10			2033 - YEAR 11		
Item		\$	Item		\$
9	Concrete steps and stoop (allowance)	\$10,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
11	Fencing internal pedestrian & gate (allowance)	\$4,600	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000			
13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890			
14	Slide gate actuator	\$13,000			
15	Vehicular entry gate access/software	\$1,400			
20	Domestic water lateral piping (10% allowance)	\$39,900			
23	Sanitary/wastewater lateral piping (10% allowance)	\$33,600			
24	Stormwater leaders at rooftop drain (10% allowance)	\$16,800			
25	Stormwater inlet & piping (10% allowance )	\$10,500			
45	Rooftop ventilation turbine fan (10% allowance)	\$2,000			
46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
48	Brick privacy wall allowance	\$10,500			
Total Scheduled Replacements		\$215,230	Total Scheduled Replacements		\$66,000

**PROJECTED REPLACEMENTS**

2034 - YEAR 12			2035 - YEAR 13		
Item		\$	Item		\$
2	Asphalt pavement, seal coat	\$2,494	7	Concrete curb (6%)	\$4,544
4	Asphalt pavement, seal coat	\$2,960	8	Concrete flatwork (6%)	\$17,899
6	Asphalt pavement, seal coat	\$736	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	34	Roof restoration system	\$77,400
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	36	Roof, coating	\$58,050
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$72,190	Total Scheduled Replacements		\$223,893

2036 - YEAR 14			2037 - YEAR 15		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	5	Asphalt pavement, mill and overlay	\$6,690
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890
			45	Rooftop ventilation turbine fan (10% allowance)	\$2,000
			46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
			48	Brick privacy wall allowance	\$10,500
Total Scheduled Replacements		\$66,000	Total Scheduled Replacements		\$92,120

2038 - YEAR 16			2039 - YEAR 17		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	2	Asphalt pavement, seal coat	\$2,494
17	Site light, 10' aluminum pole	\$16,100	4	Asphalt pavement, seal coat	\$2,960
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	6	Asphalt pavement, seal coat	\$736
			12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			35	Roof restoration system	\$64,500
			37	Roof, coating	\$48,375
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$82,100	Total Scheduled Replacements		\$185,065

**PROJECTED REPLACEMENTS**

2040 - YEAR 18			2041 - YEAR 19		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	7	Concrete curb (6%)	\$4,544
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	8	Concrete flatwork (6%)	\$17,899
			12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$66,000	Total Scheduled Replacements		\$88,443

2042 - YEAR 20			2043 - YEAR 21		
Item		\$	Item		\$
9	Concrete steps and stoop (allowance)	\$10,000	1	Asphalt pavement, mill and overlay	\$22,670
10	Fence, 6' aluminum picket, perimeter	\$50,384	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
11	Fencing internal pedestrian & gate (allowance)	\$4,600	16	Site light, standard single head, LED	\$2,520
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	18	Lighting, unit entry fixtures	\$37,050
13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890	19	Lighting, privacy wall lamps	\$18,360
15	Vehicular entry gate access/software	\$1,400	38	Roof, coating	\$125,175
20	Domestic water lateral piping (10% allowance)	\$39,900	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
23	Sanitary/wastewater lateral piping (10% allowance)	\$33,600			
24	Stormwater leaders at rooftop drain (10% allowance)	\$16,800			
25	Stormwater inlet & piping (10% allowance )	\$10,500			
45	Rooftop ventilation turbine fan (10% allowance)	\$2,000			
46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
48	Brick privacy wall allowance	\$10,500			
49	Meter bank, 1600 amp, 8 meters	\$117,650			
50	Electric switchgear, 2,000 amp	\$94,320			
Total Scheduled Replacements		\$464,584	Total Scheduled Replacements		\$271,775

2044 - YEAR 22			2045 - YEAR 23		
Item		\$	Item		\$
2	Asphalt pavement, seal coat	\$2,494	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
4	Asphalt pavement, seal coat	\$2,960	40	Roof, coating	\$129,675
6	Asphalt pavement, seal coat	\$736	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000			
39	Roof, coating	\$129,675			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
Total Scheduled Replacements		\$201,865	Total Scheduled Replacements		\$195,675

**PROJECTED REPLACEMENTS**

Item	2046 - YEAR 24	\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
41	Roof, coating	\$129,675
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$195,675

Item	2047 - YEAR 25	\$
7	Concrete curb (6%)	\$4,544
8	Concrete flatwork (6%)	\$17,899
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890
42	Roof, coating	\$129,675
45	Rooftop ventilation turbine fan (10% allowance)	\$2,000
46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
48	Brick privacy wall allowance	\$10,500
Total Scheduled Replacements		\$237,548

Item	2048 - YEAR 26	\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
26	Maintenance shed	\$7,000
43	Roof, coating	\$129,675
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$202,675

Item	2049 - YEAR 27	\$
2	Asphalt pavement, seal coat	\$2,494
4	Asphalt pavement, seal coat	\$2,960
6	Asphalt pavement, seal coat	\$736
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
44	Roof, coating	\$129,675
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$201,865

Item	2050 - YEAR 28	\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
36	Roof, coating	\$58,050
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$124,050

Item	2051 - YEAR 29	\$
3	Asphalt pavement, mill and overlay	\$26,910
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
Total Scheduled Replacements		\$92,910

**PROJECTED REPLACEMENTS**

Item	2052 - YEAR 30	\$	Item	2053 - YEAR 31	\$
9	Concrete steps and stoop (allowance)	\$10,000	7	Concrete curb (6%)	\$4,544
11	Fencing internal pedestrian & gate (allowance)	\$4,600	8	Concrete flatwork (6%)	\$17,899
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
15	Vehicular entry gate access/software	\$1,400			
20	Domestic water lateral piping (10% allowance)	\$39,900			
23	Sanitary/wastewater lateral piping (10% allowance)	\$33,600			
24	Stormwater leaders at rooftop drain (10% allowance)	\$16,800			
25	Stormwater inlet & piping (10% allowance )	\$10,500			
45	Rooftop ventilation turbine fan (10% allowance)	\$2,000			
46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
48	Brick privacy wall allowance	\$10,500			
<b>Total Scheduled Replacements</b>		<b>\$202,230</b>	<b>Total Scheduled Replacements</b>		<b>\$88,443</b>

Item	2054 - YEAR 32	\$	Item	2055 - YEAR 33	\$
2	Asphalt pavement, seal coat	\$2,494	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
4	Asphalt pavement, seal coat	\$2,960	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
6	Asphalt pavement, seal coat	\$736			
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000			
37	Roof, coating	\$48,375			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
<b>Total Scheduled Replacements</b>		<b>\$120,565</b>	<b>Total Scheduled Replacements</b>		<b>\$66,000</b>

Item	2056 - YEAR 34	\$	Item	2057 - YEAR 35	\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	5	Asphalt pavement, mill and overlay	\$6,690
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890
			14	Slide gate actuator	\$13,000
			45	Rooftop ventilation turbine fan (10% allowance)	\$2,000
			46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
			48	Brick privacy wall allowance	\$10,500
<b>Total Scheduled Replacements</b>		<b>\$66,000</b>	<b>Total Scheduled Replacements</b>		<b>\$105,120</b>



**PROJECTED REPLACEMENTS**

2058 - YEAR 36			2059 - YEAR 37		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	2	Asphalt pavement, seal coat	\$2,494
38	Roof, coating	\$129,175	4	Asphalt pavement, seal coat	\$2,960
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	6	Asphalt pavement, seal coat	\$736
			7	Concrete curb (6%)	\$4,544
			8	Concrete flatwork (6%)	\$17,899
			12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
			39	Roof, coating	\$129,675
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
<b>Total Scheduled Replacements</b>		<b>\$191,175</b>	<b>Total Scheduled Replacements</b>		<b>\$224,308</b>

2060 - YEAR 38			2061 - YEAR 39		
Item		\$	Item		\$
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
40	Roof, coating	\$129,675	22	Domestic water cut-off valve (allowance)	\$91,000
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000	41	Roof, coating	\$129,675
			47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
<b>Total Scheduled Replacements</b>		<b>\$195,675</b>	<b>Total Scheduled Replacements</b>		<b>\$286,675</b>

2062 (beyond study period)			2063 (beyond study period)		
Item		\$	Item		\$
9	Concrete steps and stoop (allowance)	\$10,000	1	Asphalt pavement, mill and overlay	\$22,670
11	Fencing internal pedestrian & gate (allowance)	\$4,600	12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000
12	Fence, 6' wood board privacy fencing & gate (allowance)	\$11,000	43	Roof, coating	\$129,675
13	Metal pipe railing, 1 strand (10% replace allowance)	\$1,890	47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000
15	Vehicular entry gate access/software	\$1,400			
20	Domestic water lateral piping (10% allowance)	\$39,900			
21	Domestic water cut-off valve (allowance)	\$7,000			
23	Sanitary/wastewater lateral piping (10% allowance)	\$33,600			
24	Stormwater leaders at rooftop drain (10% allowance)	\$16,800			
25	Stormwater inlet & piping (10% allowance)	\$10,500			
42	Roof, coating	\$129,675			
45	Rooftop ventilation turbine fan (10% allowance)	\$2,000			
46	Rooftop 4' metal HVAC surround (10% allowance)	\$5,040			
47	Exterior envelope tuckpointing & balcony repair allow.	\$55,000			
48	Brick privacy wall allowance	\$10,500			
<b>Total Scheduled Replacements</b>		<b>\$338,905</b>	<b>Total Scheduled Replacements</b>		<b>\$218,345</b>

## SECTION D - CONDITION ASSESSMENT

**General Comments.** Miller+Dodson Associates conducted a Reserve Study at Carrollsbuurg Square in April 2022. Carrollsbuurg Square is in generally good overall condition for a residential condominium constructed in 1967. A review of the Replacement Reserve Inventory will show that we are anticipating most of the components achieving their normal economic lives.

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

**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

**Asphalt Pavement.** The Association is responsible for the roadways and parking bays serving the community. The Association's three sections of asphalt have been listed separately in the analysis. The 3rd Street SW. the extension includes the northern section of the roadway and the Association's parking bays. This asphalt is in poor condition. The Delaware Avenue SW. asphalt includes the access drive and parking bays, this pavement is in good to fair condition. The M Street SW. asphalt includes three parking areas. The pavement is in good overall condition.

Other roadways are maintained by the City.

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

Street/Areas	sf.
3rd Street SW., roadway and parking bays:	11,335
Delaware Avenue SW., access drive, and parking bays.	13,455
M Street SW., parking areas:	3,345

Defects noted associated with deteriorating asphalt include the following:

- **Open Cracks.** Open cracks allow water to penetrate 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.** When there are multiple locations where the asphalt has developed it is 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.** If asphalt pavement is not properly graded, it results 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 form 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 it with asphalt.
- **Wheel Rutting.** These are depressions along the wheel lines extending along portions of the roadway. Repair of these areas will require full-depth and full-width pavement replacement. Wheel rutting, if left unattended can adversely affect vehicle steering.
- **Shoving.** Occurring at locations of sharp braking or turning. The primary cause of this defect is large truck traffic. If addressed early, surface milling and overlay using a stiffer topcoat of asphalt pavement shoving can be mitigated.
- **Reflective Cracking.** Reflective cracks occur when placing a new asphalt overlay over an existing cracked pavement. With time and movement, existing cracks will migrate through the new asphalt. Installing a bridging membrane or fabric at the time of overlay can control reflective cracking.

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.

To maintain the condition of the pavement throughout the community and ensure the longest life of the asphalt, we recommend the Association adopts 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 by the 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 by 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 're-moisturize' 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. Re-moisturizing the pavement can return its flexibility and extend its life of the pavement.





**Concrete Work.** The concrete work includes the community's curbing, sidewalk, lead walk, stoops, steps, and other concrete flatwork. The overall condition of the concrete work is good to fair. Multiple walkway areas were displaying cracking and lifting due to tree roots.

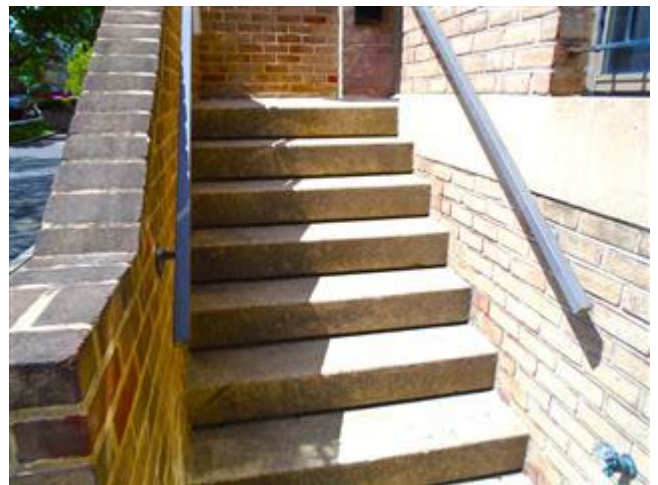
The standards we use for recommending replacement are as follows:

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

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

**Expansion Joint.** Expansion joints are composed of sacrificial, asphalt-impregnated fibrous material. This joint material should be installed between concrete elements to separate the curb, sidewalk, concrete drives, and other concrete components. The expansion joints should be installed at regular intervals during concrete replacement. Expansion joints allow for independent movement between adjoining structural members. Joints allow for thermal expansion and contraction without inducing stress in the system. Installing expansion joints in concrete permits independent horizontal and vertical movement between adjoining parts of the structure and helps minimize cracking. Expansion joints also mitigate the inflow of stormwater that undermines substrata and causes concrete to subside. The expansion joints should be inspected periodically and replaced as needed. The replacement of expansion joints is considered a maintenance function and therefore excluded from the reserve funding analysis.





**Fencing.** The Association maintains perimeter and interior walkway aluminum picket fencing, metal hand railings, and pressure-treated lumber privacy fencing. The metal fencing and railings are in good overall condition. The wood privacy fencing is being replaced on an as-needed basis. The amount allocated for the wood privacy fencing is in accordance with the Association's historical expenditures.

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

Aluminum fencing can have a useful life of 40 years or more. Periodic cleaning and touch-up painting may be required to keep the fence attractive.

The Association maintains fence and rail 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 the 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.



**Vehicle Access System.** The Delaware Avenue parking area has two sliding gate operators. The access control is established via electronic access control and vehicle access gates. The northern entry operator has had a recent upgrade of reader and software. There were no reported issues with the gate operators. Future funding for replacements has been programmed in the analysis.

- Readers. Maintain all connections and security interfaces.
- Gates. Maintain hinges and fence sections. Keep the slide area clear of debris and obstructions.
- Actuators. Inspect actuators periodically to ensure proper function.
- Electrical. Maintain boxes, connections, and conduits to keep out water and moisture.



**Site Lighting.** The Association is responsible for the operation of the community poled site lights, building-mounted lighting, and privacy wall lamp lights. The community's lighting was updated in the last five years to LED fixtures. The lighting was not on at the time of the sited inspection, but there were no reported issues. Future funding for replacements has been programmed in the analysis.

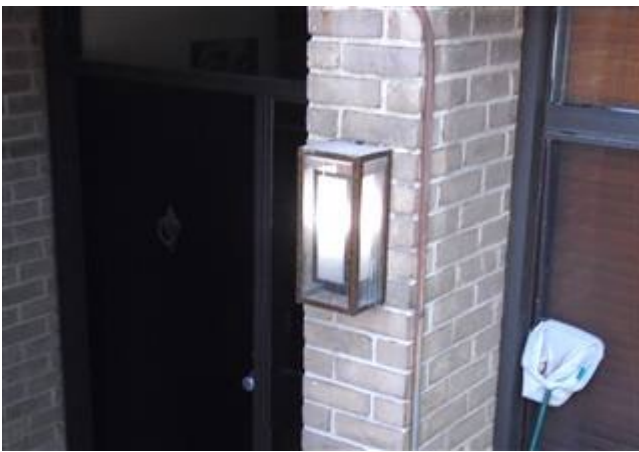
his study assumes replacement of the light fixtures every 15 to 20 years, and pole replacement every 30 to 40 years. When the light poles are replaced, we assume that the underground wiring will also be replaced.

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.







**Underground Utilities.** The Association is responsible for the underground utility line maintenance and replacement, including domestic water supply laterals, sanitary laterals, stormwater inlets, and piping roof drains to the stormwater system. The analyst was informed there have been minor problems with sanitary lines. 14 cut-off valves are serving the community. 13 have been replaced and one is scheduled for replacement in 2022.

*There were no engineering drawings provided for determining the location of the domestic water and sanitary lines. The lengths have been estimated. It is critical the Association determine the location of all underground piping to enable comprehensive inspection and efficient maintenance of the underground utilities.*

*Engineering drawings were not used in the determination of these underground components. Instead, we have provided an estimate of the approximate replacement costs based on our experience with other facilities of similar size and configuration. The inspection and evaluation of underground lines and structures are beyond the scope of work for this study.*





**Maintenance Shed.** The Association currently has two small sheds on the south side of the Delaware Avenue parking area. These are inadequate to provide necessary maintenance functions. Funding for the estimated replacement cost with a single larger shed has been programmed in the analysis. The particulars for the replacement may require additional funds depending on the particular replacement structure.

## EXTERIOR ITEMS

**Building Roofing.** *The Association has chosen to coat the community's roofs. The building roofing cost and normal economic life were adjusted on May 19, 2023.*

The Carrollburg Square community has twenty-three building roofs. Twenty-one of the roofs are currently modified bitumen. Those roofs were installed in or around 2004. Two of the roofs have been restored, one in 2015 and the second in 2019.

A modified bitumen flat roof is composed of asphalt that is reinforced with fiberglass material and other modifiers. This combination results in maximum durability. They come in rolls that workers apply using hot and cold temperatures. There are three application methods including heat-welded, cold adhesive, and hot asphalt. To make it more energy-efficient, some roofing contractors recommend coatings on the top-most surface to create a cool roof.

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. The Carrollburg Square condominium association has prudently secured the services of a qualified roofing firm to maintain and assess the performance of the community's roofing.

The analyst accessed three sample roofs. It was noted that on one of the older roofs the rooftop drain was not properly performing. All the roofs should be periodically inspected to ensure performance.

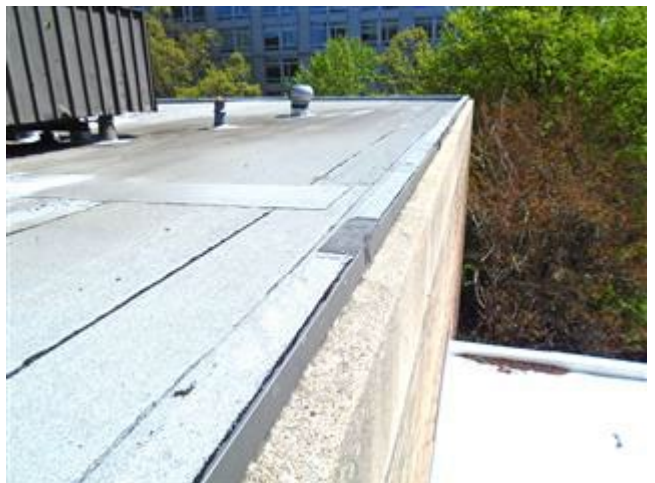
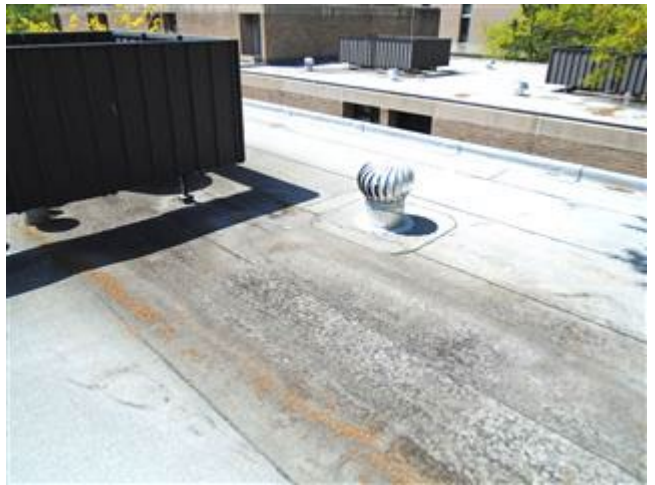
A qualified survey was performed on each roof. Given the age of the roofs, inspection information funding for the future replacement of three building roofs per year has been programmed in the analysis. Developing a comprehensive schedule, and prioritizing individual roofs should be developed with a qualified roofing firm.

**Restoration.** It is suggested the current roofs be resurfaced with a restoration process. This is a more affordable alternative than removing and replacing the current roofing. Changes in the building code stipulate that removal of the current roof would require additions such as enhanced insulation. The restoration system comes with a twenty-year warranty, according to a local roofing consultant. The restoration process requires the existing roof and structure to meet certain requirements. Delay in replacement may affect the options for replacement. The restoration process or system is a one-time application. The subsequent roof replacement, in the next 20+ years, has been programmed as an EPDM replacement roof. If in the future the Association determines another type of roof replacement the report can be revised to incorporate any new costs.

**EPDM Roof.** EPDM (ethylene propylene diene monomer rubber) is a type of synthetic rubber used in many applications. EPDM is derived from polyethylene into which 45-85% of propylene has been co-polymerized to reduce the formation of the typical polyethylene crystallinity. EPDM is a semi-crystalline material with ethylene-type crystal structures at higher ethylene contents, becoming essentially amorphous at ethylene contents that approach 50%.

As with most rubbers, EPDM is always used compounded with fillers such as carbon black and calcium carbonate, with plasticizers such as paraffinic oils, and has useful rubbery properties only when cross-linked. Cross-linking mostly takes place via vulcanization with Sulfur but is also accomplished with peroxides (for better heat resistance) or with phenolic resins.

Minimally, bi-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.





**Ventilation Fans.** Unit exhaust ventilation is provided by a series of rooftop non-mechanized fan units. An allowance for a replacement for a percentage of the fans on a cyclical basis has been programmed in the analysis.

**HVAC Surround.** The units' air conditioning condensers war located on the buildings' rooftops. These are surrounded by metal-paneled partitions. Portions of the surrounding area are damaged. An allowance for the replacement of the panel has been programmed in the analysis.



**Masonry.** Brick masonry is used as the exterior cladding on the buildings. The prior study estimated the exterior brick area to be approximately 50,000 sf. In general, masonry is considered a long-life item, and therefore full-scale replacement has been excluded from reserve funding. However, 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 brick and stone can have their surfaces affected and masonry units can become loose.

Brick walls can have an extended useful life of 100 years or more and will require periodic re-pointing and localized repair. Repoint is the process of raking out defective masonry joints and tooling a new mortar into the joints. Properly mortared and tooled joints will repel the weather and keep water from penetrating the wall. Siloxane or other breathable sealants provide additional protection to the wall from water penetration.

There has been tuckpointing performed on buildings in the recent past. For reserve funding purposes, this study has incorporated the historical expenditures the Association has spent for the units' brick wall and balcony maintenance. It is assumed the Association has developed a comprehensive program for exterior maintenance.

The terms pointing, re-pointing, and tuckpointing are used interchangeably. The Brick Industry Association has identified the terms 're-pointing' and 'tuck-pointing' methods as one form of brick masonry maintenance. A critical step in the re-pointing operation is to identify all areas that require re-pointing. This step is critical because only defective joints require repair. Re-pointing is very labor-intensive work, and original mortar joints in good condition are preferred over new.

**Brick Privacy Walls.** In addition to unit brick exterior walls, the Association maintains brick privacy walls. These walls surround unit courtyards and can be affected by tree growth and are independent of unit structures. There were a limited number of privacy walls displaying damage. The wall should be periodically inspected and a comprehensive plan for repairs developed. An allowance for brick privacy wall repair and maintenance has been programmed in the analysis.





**Building Electrical Service.** The electrical systems of the buildings are reported to be operating normally. The individual unit meters have been updated.

Other than transformers and meters and if protected from water damage or overloading, interior electrical systems within a building, including feed lines and switchgear, are considered long-life components, and unless otherwise noted, are excluded from this study.

To maintain this equipment properly, periodic inspection and tightening of all connections are recommended every three to five years. Insurance policies in some cases may have specific requirements regarding the tightening of electrical connections.

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

**Electrical Switchgear.** The electrical switchgear includes the main switch at each of the community's 12, meter areas. 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 appears to be good. As the switchgear continues to age, obtaining replacement parts can be expected to become more difficult. When parts are no longer 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 switch replacement.



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 in 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 [CALonline.org](http://CALonline.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:

<b>ea</b>	each	<b>ls</b>	lump sum	<b>sy</b>	square yard
<b>ft or lf</b>	linear foot	<b>pr</b>	pair	<b>cy</b>	cubic yard
<b>sf</b>	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/40SodajTW1q>

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



<https://youtu.be/pYSMZ013VjQ>

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



<https://youtu.be/Qx8WHB9Cgnc>

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



<https://youtu.be/ZfBoAEhtf3E>

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



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

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



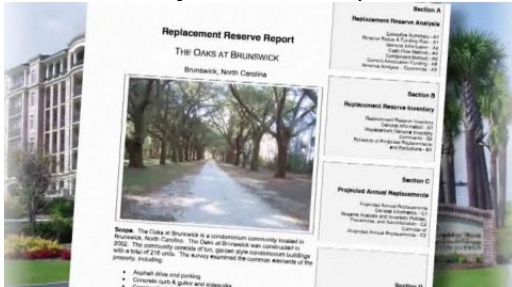
<https://youtu.be/aARD1B1Oa3o>

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



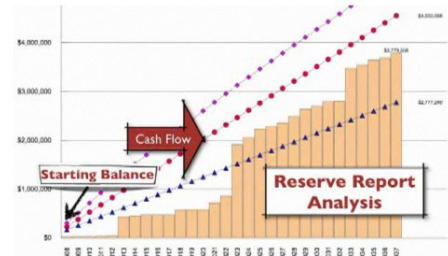
<https://youtu.be/diZfM1IyJYU>

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?



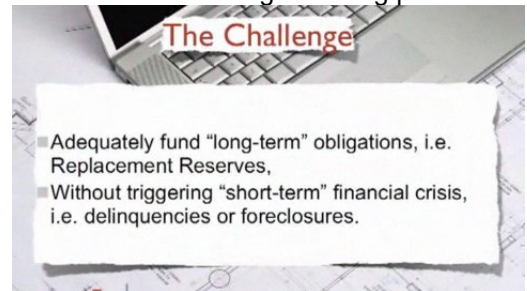
<https://youtu.be/SePdWVDvHWI>

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



<https://youtu.be/W8CDLwRlv68>

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



<https://youtu.be/hIxV9X1tlcA>