

# RESERVE STUDY

## Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc.



**Silver Spring, Maryland**  
**October 19, 2021**



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Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc.  
Silver Spring, Maryland

Dear Board of Directors of Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc.:

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Reserve Study* of Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc. in Silver Spring, Maryland and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, October 19, 2021.

This *Reserve Study* exceeds the Association of Professional Reserve Analysts (APRA) standards fulfilling the requirements of a "Level II Reserve Study Update."

An ongoing review by the Board and an Update of this Reserve Study are necessary to ensure an equitable funding plan since a Reserve Study is a snapshot in time. We recommend the Board budget for an Update to this Reserve Study in two- to three-years. We look forward to continuing to help Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc. plan for a successful future.

As part of our long-term thinking and everyday commitment to our clients, we are available to answer any questions you may have regarding this study.

Respectfully submitted on January 21, 2022 by

*Reserve Advisors, LLC*

Visual Inspection and Report by: Stephen E. Breski, RS<sup>1</sup> and Ahfiza C. Sadr  
Review by: Alan M. Ebert, RS, PRA<sup>2</sup>, Director of Quality Assurance



<sup>1</sup> RS (Reserve Specialist) is the reserve provider professional designation of the Community Associations Institute (CAI) representing America's more than 300,000 condominium, cooperative and homeowners associations.

<sup>2</sup> PRA (Professional Reserve Analyst) is the professional designation of the Association of Professional Reserve Analysts. Learn more about APRA at <http://www.apra-usa.com>.



Long-term thinking. Everyday commitment.



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# 1. RESERVE STUDY EXECUTIVE SUMMARY

**Client:** Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc. (Mutual 19B)

**Location:** Silver Spring, Maryland

**Reference:** 060279

**Property Basics:** Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc. is a condominium style development which consists of 210 units in seven buildings. The buildings were built from 1979 to 1980. In late 2020, a fire occurred in building 91, which resulted in restoration to this building in 2021 through 2022.

**Reserve Components Identified:** 36 Reserve Components.

**Inspection Date:** October 19, 2021. We conducted previous inspections in 2015 and 2011.

**Funding Goal:** The Funding Goal of this Reserve Study is to maintain reserves above an adequate, not excessive threshold during one or more years of significant expenditures. Our recommended Funding Plan recognizes this threshold funding year in 2047 due to subsequent replacement of the asphalt shingle roofs.

**Cash Flow Method:** We use the Cash Flow Method to compute the Reserve Funding Plan. This method offsets future variable Reserve Expenditures with existing and future stable levels of reserve funding. Our application of this method also considers:

- Current and future local costs of replacement
- 0.7% anticipated annual rate of return on invested reserves
- 3.0% future Inflation Rate for estimating Future Replacement Costs

**Sources for Local Costs of Replacement:** Our proprietary database, historical costs and published sources, i.e., R.S. Means, Incorporated.

**Unaudited Cash Status of Reserve Fund:**

- \$1,864,003 projected as of January 1, 2022
- 2021 budgeted Reserve Contributions of \$258,000
- 2022 budgeted Reserve Contributions of \$218,913

**Project Prioritization:** We note anticipated Reserve Expenditures for the next 30 years in the **Reserve Expenditures** tables and include a **Five-Year Outlook** table following the **Reserve Funding Plan** in Section 3. We recommend the Association prioritize the following projects in the next five years based on the conditions identified:

- Repairs and waterproof coating applications to the concrete balconies
- Replacement of the aluminum railings at the balconies
- Replacement of a portion of the asphalt shingle roofs
- Inspections and repairs to the masonry façade
- Replacement of the common windows and doors
- Interior renovations at all the buildings except for building 91
- Replacement of the elevator controls and equipment

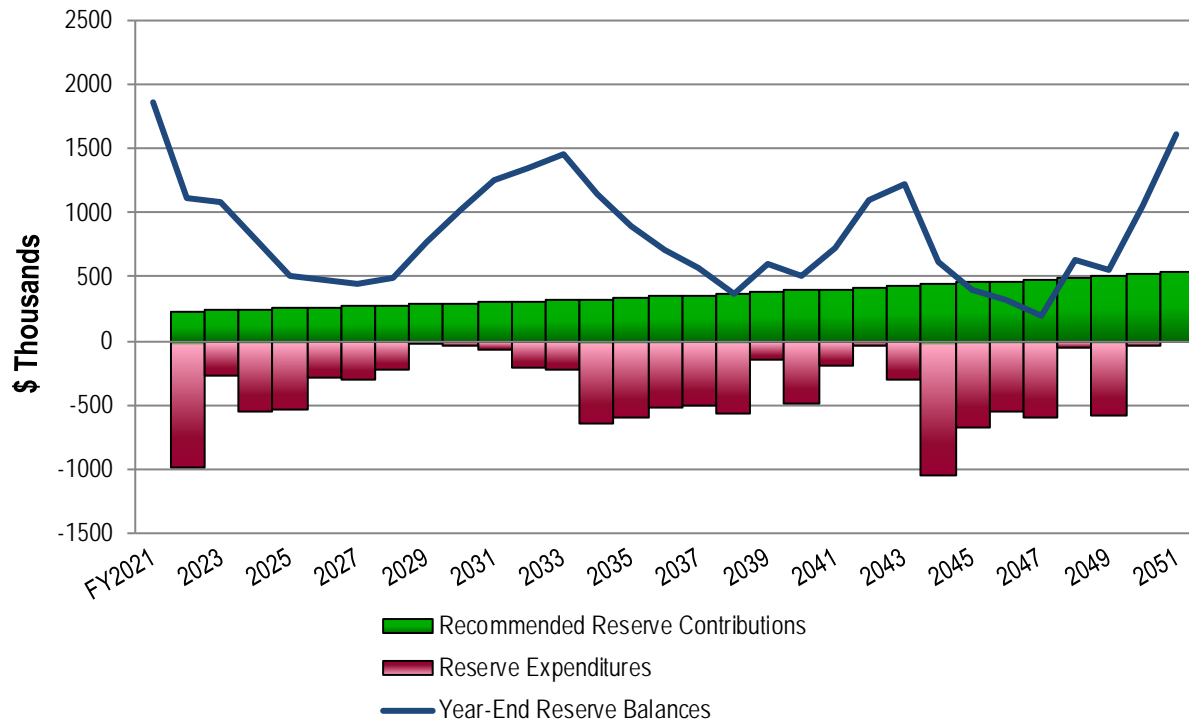


**Recommended Reserve Funding:** We recommend the following in order to achieve a stable and equitable Funding Plan:

- Increase to \$236,000 in 2023
- Inflationary increases through 2051, the limit of this study's Cash Flow Analysis
- Initial recommended adjustment in Reserve Contributions of \$17,087 represents an average monthly increase of \$6.78 per unit owner and about an one percent (1.1%) adjustment in the 2022 total Operating Budget of \$1,570,587.

**Mutual 19B**  
Recommended Reserve Funding Table and Graph

Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)
2022	218,913 (Budgeted)	1,109,157	2032	308,000	1,347,808	2042	413,900	1,091,059
2023	236,000	1,085,688	2033	317,200	1,446,776	2043	426,300	1,219,031
2024	243,100	781,342	2034	326,700	1,136,154	2044	439,100	619,887
2025	250,400	500,059	2035	336,500	888,140	2045	452,300	402,563
2026	257,900	476,922	2036	346,600	712,796	2046	465,900	312,620
2027	265,600	437,372	2037	357,000	568,783	2047	479,900	191,447
2028	273,600	495,801	2038	367,700	367,035	2048	494,300	636,212
2029	281,800	762,989	2039	378,700	604,417	2049	509,100	559,196
2030	290,300	1,014,474	2040	390,100	502,486	2050	524,400	1,057,420
2031	299,000	1,246,099	2041	401,800	716,367	2051	540,100	1,606,812





## 2. RESERVE STUDY REPORT

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Reserve Study* of

**Council of Unit Owners Mutual 19B Condominium of Rossmoor, Inc.**

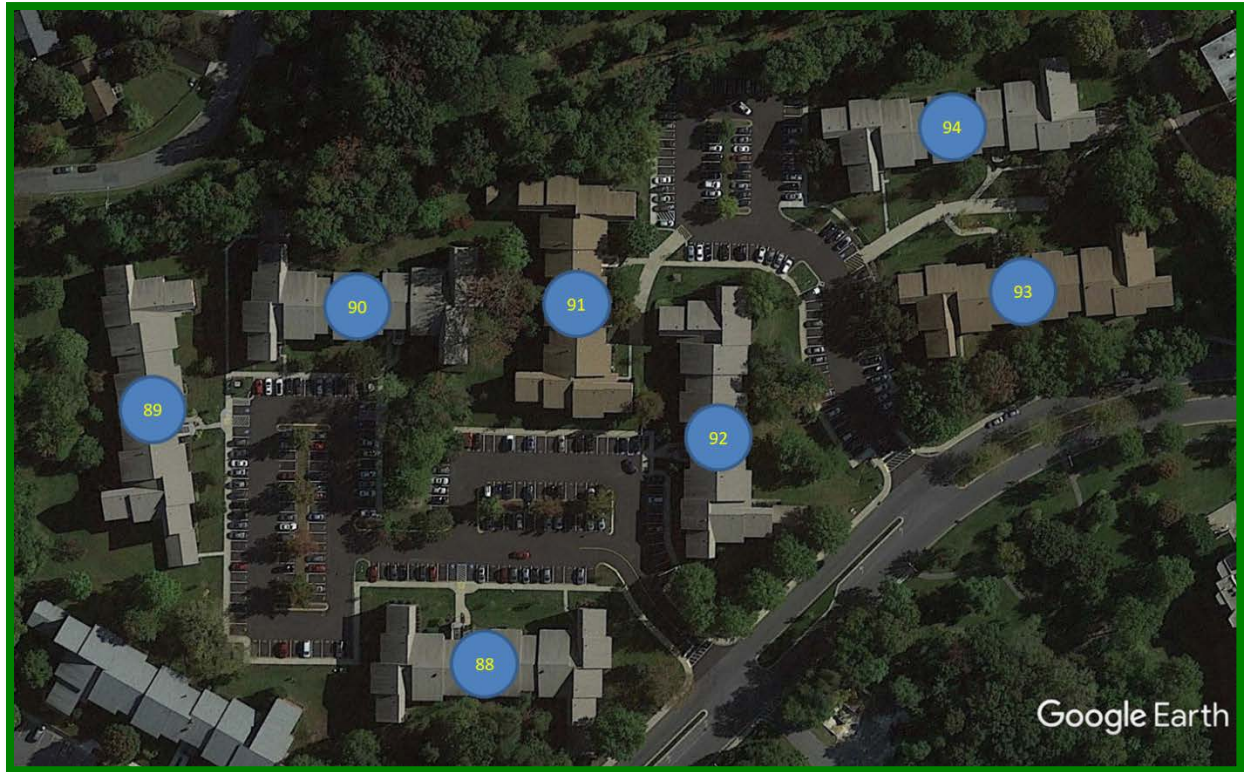
**Silver Spring, Maryland**

and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, October 19, 2021. We conducted previous inspections in 2015 and 2011.

We present our findings and recommendations in the following report sections and spreadsheets:

- **Identification of Property** - Segregates all property into several areas of responsibility for repair or replacement
- **Reserve Expenditures** - Identifies reserve components and related quantities, useful lives, remaining useful lives and future reserve expenditures during the next 30 years
- **Reserve Funding Plan** - Presents the recommended Reserve Contributions and year-end Reserve Balances for the next 30 years
- **Five-Year Outlook** - Identifies reserve components and anticipated reserve expenditures during the first five years
- **Reserve Component Detail** - Describes the reserve components, includes photographic documentation of the condition of various property elements, describes our recommendations for repairs or replacement, and includes detailed solutions and procedures for replacements for the benefit of current and future board members
- **Methodology** - Lists the national standards, methods and procedures used to develop the Reserve Study
- **Definitions** - Contains definitions of terms used in the Reserve Study, consistent with national standards
- **Professional Service Conditions** - Describes Assumptions and Professional Service Conditions
- **Credentials and Resources**

## IDENTIFICATION OF PROPERTY



Our investigation includes Reserve Components or property elements as set forth in your Declaration. The Expenditure tables in Section 3 list the elements contained in this study. Our analysis begins by segregating the property elements into several areas of responsibility for repair and replacement.

Our process of identification helps assure that future boards and the management team understand whether reserves, the operating budget or Unit Owners fund certain replacements and assists in preparation of the annual budget. We derive these segregated classes of property from our review of the information provided by the Association and through conversations with the Board. These classes of property include:

- Reserve Components
- Long-Lived Property Elements
- Operating Budget Funded Repairs and Replacements
- Property Maintained by Unit Owners
- Property Maintained by Leisure World

We advise the Board conduct an annual review of these classes of property to confirm its policy concerning the manner of funding, i.e., from reserves or the operating budget. The Reserve Study identifies Reserve Components as set forth in your Declaration or which were identified as part of your request for proposed services. Reserve Components are defined by CAI as property elements with:





- Mutual 19B responsibility
- Limited useful life expectancies
- Predictable remaining useful life expectancies
- Replacement cost above a minimum threshold

Long-Lived Property Elements may not have predictable Remaining Useful Lives or their replacement may occur beyond the 30-year scope of the study. The operating budget should fund infrequent repairs. Funding untimely or unexpected replacements from reserves will necessitate increases to Reserve Contributions. Periodic updates of this Reserve Study will help determine the merits of adjusting the Reserve Funding Plan. We identify the following Long-Lived Property Elements as excluded from the 30-year Reserve Expenditures at this time:

- Foundations
- Pipes, Sprinkler System, Building 91 (2021/2022)
- Soffit and Fascia, Building 91 (2021/2022)
- Structural Frames

The operating budget provides money for the repair and replacement of certain Reserve Components. The Association may develop independent criteria for use of operating and reserve funds. For purposes of calculating appropriate Reserve Contributions, we identify the following list of Operating Budget Funded Repairs and Replacements:

- General Maintenance to the Common Elements
- Expenditures less than \$6,000 (These relatively minor expenditures have a limited effect on the recommended Reserve Contributions.)
- Catch Basins, Landscape
- Fire Extinguishers
- Landscape
- Paint Finishes, Touch Up

- Signage



**Signage**

- Skylights, Repairs
- Unit Heaters
- Valves
- Other Repairs normally funded through the Operating Budget

Certain items have been designated as the responsibility of the unit owners to repair or replace at their cost. Property Maintained by Unit Owners, including items billed back to Unit Owners, relates to unit:

- Enclosed Balconies and Patios (Excluding Railing and Exterior Ledge)



**Enclosed balcony**

- Electrical Systems (Including Circuit Protection Panels)
- Heating, Ventilating and Air Conditioning (HVAC) Units
- Interiors
- Pipes (Within Units)
- Windows and Patio Doors

Certain items have been designated as the responsibility of Leisure World to repair or replace. Property Maintained by Leisure World relates to:

- Fence, Chain Link
- Light Poles and Fixtures, Parking Areas



**Parking areas light pole and fixture**

- Sidewalks, Leisure World Boulevard

### **3. RESERVE EXPENDITURES and FUNDING PLAN**

The tables following this introduction present:

#### **Reserve Expenditures**

- Line item numbers
- Total quantities
- Quantities replaced per phase (in a single year)
- Reserve component inventory
- Estimated first year of event (i.e., replacement, application, etc.)
- Life analysis showing
  - useful life
  - remaining useful life
- 2021 local cost of replacement
  - Per unit
  - Per phase
  - Replacement of total quantity
- Percentage of future expenditures anticipated during the next 30 years
- Schedule of estimated future costs for each reserve component including inflation

#### **Reserve Funding Plan**

- Reserves at the beginning of each year
- Total recommended reserve contributions
- Estimated interest earned from invested reserves
- Anticipated expenditures by year
- Anticipated reserves at year end

#### **Five-Year Outlook**

- Line item numbers
- Reserve component inventory of only the expenditures anticipated to occur within the first five years
- Schedule of estimated future costs for each reserve component anticipated to occur within the first five years

The purpose of a Reserve Study is to provide an opinion of reasonable annual Reserve Contributions. Prediction of exact timing and costs of minor Reserve Expenditures typically will not significantly affect the 30-year cash flow analysis. Adjustments to the times and/or costs of expenditures may not always result in an adjustment in the recommended Reserve Contributions.

Financial statements prepared by your association, by you or others might rely in part on information contained in this section. For your convenience, we have provided an electronic data file containing the tables of ***Reserve Expenditures*** and ***Reserve Funding Plan***.

## RESERVE EXPENDITURES

Council of Unit Owners Mutual 19B  
Condominium of Rossmoor, Inc.  
Silver Spring, Maryland

**Explanatory Notes:**

- 1) **3.0%** is the estimated Inflation Rate for estimating Future Replacement Costs.
- 2) FY2021 is Fiscal Year beginning January 1, 2021 and ending December 31, 2021.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$			Percentage of Future Expenditures	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036	
						Useful	Remaining	Unit (2021)	Per Phase (2021)	Total (2021)																		
<b>Exterior Building Elements</b>																												
1.060	3,300	3,300	Square Feet	Balconies, Concrete, Repairs and Waterproof Coating Applications	2025	8 to 12	4	18.00	59,400	59,400	2.5%					66,855											89,848	
1.105	1,600	1,600	Linear Feet	Balconies, Railings, Aluminum	2025	to 40	4	80.00	128,000	128,000	1.3%					144,065												
1.240	10,100	3,367	Linear Feet	Gutters and Downspouts, Aluminum, Phased	2045	to 30	24 to 26	12.00	40,400	121,200	2.2%																	
1.260	145	145	Each	Light Fixtures	2026	to 25	5	80.00	11,600	11,600	0.3%						13,448											
1.280	190	190	Squares	Roofs, Asphalt Shingles, Building 91	2041	15 to 20	20	560.00	106,400	106,400	1.7%																	
1.281	1,150	383	Squares	Roofs, Asphalt Shingles, Remaining, Phased	2025	15 to 20	4 to 6	560.00	214,665	644,000	18.5%					241,607	248,855	256,321										
1.580	7	7	Each	Skylights	2031	to 25	10	8,000.00	56,000	56,000	0.7%											75,259						
1.590	9,550	3,183	Square Feet	Soffit and Fascia, Aluminum, Remaining, Phased	2025	to 40	4 to 6	6.00	19,100	57,300	0.6%					21,497	22,142	22,806										
1.820	123,000	61,500	Square Feet	Walls, Masonry, Inspections and Repairs, Phased	2023	8 to 12	2 to 3	2.60	159,900	319,800	12.6%			169,638	174,727								227,979	234,819				
1.980	1,980	990	Square Feet	Windows and Doors, Common, Phased	2023	to 40	2 to 3	61.00	60,390	120,780	1.1%			64,068	65,990													
<b>Interior Building Elements</b>																												
2.100	7	7	Each	Elevator Cab Finishes	2028	to 25	7	22,000.00	154,000	154,000	1.7%																189,401	
2.198	2,110	2,110	Square Yards	Floor Coverings, Carpet, Hallways, Near Term	2024	8 to 12	3	51.00	107,610	107,610	1.0%				117,588													
2.200	2,460	2,460	Square Yards	Floor Coverings, Carpet, Hallways, Subsequent	2034	8 to 12	13	51.00	125,460	125,460	3.8%																184,242	
2.240	300	300	Square Yards	Floor Coverings, Tile, Hallways	2044	to 30	23	130.00	39,000	39,000	0.7%																	
2.558	257	257	Each	Light Fixtures, Hallways, Near Term	2024	to 20	3	150.00	38,550	38,550	0.4%				42,125													
2.560	300	300	Each	Light Fixtures, Hallways, Subsequent	2044	to 20	23	150.00	45,000	45,000	0.8%																	
2.700	210	210	Each	Mailboxes	2030	to 35	9	100.00	21,000	21,000	0.2%															27,400		
2.798	83,500	83,500	Square Feet	Paint Finishes, Hallways and Stairwells, Near Term	2024	8 to 12	3	1.40	116,900	116,900	1.1%				127,740													
2.800	97,400	97,400	Square Feet	Paint Finishes, Hallways and Stairwells, Subsequent	2034	8 to 12	13	1.40	136,360	136,360	4.1%																200,249	
<b>Building Services Elements</b>																												
3.070	7	2	Each	Air Handling and Condensing Units, Split Systems, Phased	2022	15 to 20	1 to 11	10,500.00	24,465	73,500	1.6%		25,199					29,212								33,865		
3.300	1	1	Allowance	Electrical System, Main Panels	2049	to 70+	28	243,000.00	243,000	243,000	4.9%																	
3.320	7	7	Each	Elevators, Hydraulic, Pumps and Controls	2022	to 35	1	105,000.00	735,000	735,000	6.7%		757,050															
3.330	7	7	Each	Elevators, Hydraulic, Cylinders	2022	to 45	1	28,000.00	196,000	196,000	1.8%		201,880															
3.555	1	1	Allowance	Life Safety System, Control Panels	2023	to 15	2	31,500.00	31,500	31,500	0.8%				33,418													
3.560	1	1	Allowance	Life Safety System, Emergency Devices	2032	to 25	11	107,500.00	107,500	107,500	1.3%															148,805		
3.583	7	7	Each	Operators, Automatic Doors	2025	to 15	4	5,500.00	38,500	38,500	1.0%					43,332												
3.605	210	53	Units	Pipes, Domestic Water and Waste, Phased	2035	to 80+	14 to 17	6,000.00	315,000	1,260,000	17.6%															476,466	490,760	
3.880	7	7	Each	Trash Chutes and Doors	2039	to 65	18	10,000.00	70,000	70,000	1.1%																	



## RESERVE EXPENDITURES

Council of Unit Owners Mutual 19B  
Condominium of Rossmoor, Inc.  
Silver Spring, Maryland

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$			Percentage of Future Expenditures	16 2037	17 2038	18 2039	19 2040	20 2041	21 2042	22 2043	23 2044	24 2045	25 2046	26 2047	27 2048	28 2049	29 2050	30 2051		
						Useful	Remaining	Unit (2021)	Per Phase (2021)	Total (2021)																		
<u>Exterior Building Elements</u>																												
1.060	3,300	3,300	Square Feet	Balconies, Concrete, Repairs and Waterproof Coating Applications	2025	8 to 12	4	18.00	59,400	59,400	2.5%															120,748		
1.105	1,600	1,600	Linear Feet	Balconies, Railings, Aluminum	2025	to 40	4	80.00	128,000	128,000	1.3%																	
1.240	10,100	3,367	Linear Feet	Gutters and Downspouts, Aluminum, Phased	2045	to 30	24 to 26	12.00	40,400	121,200	2.2%									82,125	84,589	87,126						
1.260	145	145	Each	Light Fixtures	2026	to 25	5	80.00	11,600	11,600	0.3%										24,288							
1.280	190	190	Squares	Roofs, Asphalt Shingles, Building 91	2041	15 to 20	20	560.00	106,400	106,400	1.7%				192,170													
1.281	1,150	383	Squares	Roofs, Asphalt Shingles, Remaining, Phased	2025	15 to 20	4 to 6	560.00	214,665	644,000	18.5%									436,369	449,460	462,944						
1.580	7	7	Each	Skylights	2031	to 25	10	8,000.00	56,000	56,000	0.7%																	
1.590	9,550	3,183	Square Feet	Soffit and Fascia, Aluminum, Remaining, Phased	2025	to 40	4 to 6	6.00	19,100	57,300	0.6%																	
1.820	123,000	61,500	Square Feet	Walls, Masonry, Inspections and Repairs, Phased	2023	8 to 12	2 to 3	2.60	159,900	319,800	12.6%							306,385	315,576									
1.980	1,980	990	Square Feet	Windows and Doors, Common, Phased	2023	to 40	2 to 3	61.00	60,390	120,780	1.1%																	
<u>Interior Building Elements</u>																												
2.100	7	7	Each	Elevator Cab Finishes	2028	to 25	7	22,000.00	154,000	154,000	1.7%																	
2.198	2,110	2,110	Square Yards	Floor Coverings, Carpet, Hallways, Near Term	2024	8 to 12	3	51.00	107,610	107,610	1.0%																	
2.200	2,460	2,460	Square Yards	Floor Coverings, Carpet, Hallways, Subsequent	2034	8 to 12	13	51.00	125,460	125,460	3.8%									247,606								
2.240	300	300	Square Yards	Floor Coverings, Tile, Hallways	2044	to 30	23	130.00	39,000	39,000	0.7%									76,970								
2.558	257	257	Each	Light Fixtures, Hallways, Near Term	2024	to 20	3	150.00	38,550	38,550	0.4%																	
2.560	300	300	Each	Light Fixtures, Hallways, Subsequent	2044	to 20	23	150.00	45,000	45,000	0.8%									88,811								
2.700	210	210	Each	Mailboxes	2030	to 35	9	100.00	21,000	21,000	0.2%																	
2.798	83,500	83,500	Square Feet	Paint Finishes, Hallways and Stairwells, Near Term	2024	8 to 12	3	1.40	116,900	116,900	1.1%																	
2.800	97,400	97,400	Square Feet	Paint Finishes, Hallways and Stairwells, Subsequent	2034	8 to 12	13	1.40	136,360	136,360	4.1%									269,118								
<u>Building Services Elements</u>																												
3.070	7	2	Each	Air Handling and Condensing Units, Split Systems, Phased	2022	15 to 20	1 to 11	10,500.00	24,465	73,500	1.6%						45,512								52,761			
3.300	1	1	Allowance	Electrical System, Main Panels	2049	to 70+	28	243,000.00	243,000	243,000	4.9%															555,966		
3.320	7	7	Each	Elevators, Hydraulic, Pumps and Controls	2022	to 35	1	105,000.00	735,000	735,000	6.7%																	
3.330	7	7	Each	Elevators, Hydraulic, Cylinders	2022	to 45	1	28,000.00	196,000	196,000	1.8%																	
3.555	1	1	Allowance	Life Safety System, Control Panels	2023	to 15	2	31,500.00	31,500	31,500	0.8%		52,065															
3.560	1	1	Allowance	Life Safety System, Emergency Devices	2032	to 25	11	107,500.00	107,500	107,500	1.3%																	
3.583	7	7	Each	Operators, Automatic Doors	2025	to 15	4	5,500.00	38,500	38,500	1.0%				67,510													
3.605	210	53	Units	Pipes, Domestic Water and Waste, Phased	2035	to 80+	14 to 17	6,000.00	315,000	1,260,000	17.6%	505,483	520,647															
3.880	7	7	Each	Trash Chutes and Doors	2039	to 65	18	10,000.00	70,000	70,000	1.1%			119,170														

## RESERVE EXPENDITURES

Council of Unit Owners Mutual 19B  
Condominium of Rossmoor, Inc.  
Silver Spring, Maryland

**Explanatory Notes:**

- 1) **3.0%** is the estimated Inflation Rate for estimating Future Replacement Costs.
- 2) FY2021 is Fiscal Year beginning January 1, 2021 and ending December 31, 2021.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$			Percentage of Future Expenditures	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026	6 2027	7 2028	8 2029	9 2030	10 2031	11 2032	12 2033	13 2034	14 2035	15 2036
						Useful	Remaining	Unit (2021)	Per Phase (2021)	Total (2021)																	
<b>Property Site Elements</b>																											
4.020	11,800	11,800	Square Yards	Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping	2024	3 to 5	3	2.00	23,600	23,600	2.0%			25,788				29,025				32,668					36,768
4.040	11,800	11,800	Square Yards	Asphalt Pavement, Mill and Overlay	2040	15 to 20	19	16.50	194,700	194,700	3.0%																
4.100	6	6	Each	Catch Basins, Inspections and Capital Repairs	2040	15 to 20	19	1,000.00	6,000	6,000	0.1%																
4.110	4,300	860	Linear Feet	Concrete Curbs and Gutters, Partial	2040	to 65	19 to 30+	35.00	30,100	150,500	0.5%																
4.130	32	4	Each	Concrete Patios, Partial	2025	to 65	4 to 30+	800.00	3,200	25,600	0.1%				3,602											4,840	
4.140	20,200	1,350	Square Feet	Concrete Sidewalks, Partial	2025	to 65	4 to 30+	10.00	13,500	202,000	1.2%				15,194						17,614					20,420	
4.560	8	8	Each	Light Poles and Fixtures	2034	to 25	13	2,300.00	18,400	18,400	0.2%														27,021		
4.650	1	1	Allowance	Pipes, Subsurface Utilities, Partial Replacements	2029	to 85+	8	15,000.00	15,000	15,000	0.7%									19,002							
<b>Anticipated Expenditures, By Year (\$11,316,995 over 30 years)</b>												0	984,129	267,124	553,958	536,152	284,445	308,339	218,426	19,002	45,014	75,259	215,338	227,979	646,331	591,574	527,528

## RESERVE EXPENDITURES

Council of Unit Owners Mutual 19B  
Condominium of Rossmoor, Inc.  
Silver Spring, Maryland

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$			Percentage of Future Expenditures	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
						Useful	Remaining	Unit (2021)	Per Phase (2021)	Total (2021)		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	
<b>Property Site Elements</b>																											
4.020	11,800	11,800	Square Yards	Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping	2024	3 to 5	3	2.00	23,600	23,600	2.0%								46,577				52,422				
4.040	11,800	11,800	Square Yards	Asphalt Pavement, Mill and Overlay	2040	15 to 20	19	16.50	194,700	194,700	3.0%				341,408												
4.100	6	6	Each	Catch Basins, Inspections and Capital Repairs	2040	15 to 20	19	1,000.00	6,000	6,000	0.1%				10,521												
4.110	4,300	860	Linear Feet	Concrete Curbs and Gutters, Partial	2040	to 65	19 to 30+	35.00	30,100	150,500	0.5%				52,781												
4.130	32	4	Each	Concrete Patios, Partial	2025	to 65	4 to 30+	800.00	3,200	25,600	0.1%								6,505								
4.140	20,200	1,350	Square Feet	Concrete Sidewalks, Partial	2025	to 65	4 to 30+	10.00	13,500	202,000	1.2%				23,672				27,443						31,814		
4.560	8	8	Each	Light Poles and Fixtures	2034	to 25	13	2,300.00	18,400	18,400	0.2%																
4.650	1	1	Allowance	Pipes, Subsurface Utilities, Partial Replacements	2029	to 85+	8	15,000.00	15,000	15,000	0.7%			25,536										34,319			
<b>Anticipated Expenditures, By Year (\$11,316,995 over 30 years)</b>												505,483	572,712	144,706	495,892	192,170	45,512	306,385	1,044,658	673,190	558,337	602,831	52,422	590,285	31,814	0	

## **RESERVE FUNDING PLAN**

**CASH FLOW ANALYSIS**  
**Council of Unit Owners Mutual 19B**  
**Condominium of Rossmoor, Inc.**

		Individual Reserve Budgets & Cash Flows for the Next 30 Years															
Silver Spring, Maryland		FY2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Reserves at Beginning of Year	<i>(Note 1)</i>	N/A	1,864,003	1,109,157	1,085,688	781,342	500,059	476,922	437,372	495,801	762,989	1,014,474	1,246,099	1,347,808	1,446,776	1,136,154	888,140
Total Recommended Reserve Contributions	<i>(Note 2)</i>	N/A	218,913	236,000	243,100	250,400	257,900	265,600	273,600	281,800	290,300	299,000	308,000	317,200	326,700	336,500	346,600
Estimated Interest Earned, During Year	<i>(Note 3)</i>	N/A	10,370	7,655	6,512	4,469	3,408	3,189	3,255	4,390	6,199	7,884	9,047	9,747	9,009	7,060	5,584
Anticipated Expenditures, By Year		N/A	(984,129)	(267,124)	(553,958)	(536,152)	(284,445)	(308,339)	(218,426)	(19,002)	(45,014)	(75,259)	(215,338)	(227,979)	(646,331)	(591,574)	(527,528)
Anticipated Reserves at Year End		<u>\$1,864,003</u>	<u>\$1,109,157</u>	<u>\$1,085,688</u>	<u>\$781,342</u>	<u>\$500,059</u>	<u>\$476,922</u>	<u>\$437,372</u>	<u>\$495,801</u>	<u>\$762,989</u>	<u>\$1,014,474</u>	<u>\$1,246,099</u>	<u>\$1,347,808</u>	<u>\$1,446,776</u>	<u>\$1,136,154</u>	<u>\$888,140</u>	<u>\$712,796</u>

(continued)

		Individual Reserve Budgets & Cash Flows for the Next 30 Years, Continued														
		2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051
Reserves at Beginning of Year		712,796	568,783	367,035	604,417	502,486	716,367	1,091,059	1,219,031	619,887	402,563	312,620	191,447	636,212	559,196	1,057,420
Total Recommended Reserve Contributions		357,000	367,700	378,700	390,100	401,800	413,900	426,300	439,100	452,300	465,900	479,900	494,300	509,100	524,400	540,100
Estimated Interest Earned, During Year		4,470	3,264	3,388	3,861	4,251	6,304	8,057	6,414	3,566	2,494	1,758	2,887	4,169	5,638	9,292
Anticipated Expenditures, By Year		(505,483)	(572,712)	(144,706)	(495,892)	(192,170)	(45,512)	(306,385)	(1,044,658)	(673,190)	(558,337)	(602,831)	(52,422)	(590,285)	(31,814)	0
Anticipated Reserves at Year End		<u>\$568,783</u>	<u>\$367,035</u>	<u>\$604,417</u>	<u>\$502,486</u>	<u>\$716,367</u>	<u>\$1,091,059</u>	<u>\$1,219,031</u>	<u>\$619,887</u>	<u>\$402,563</u>	<u>\$312,620</u>	<u>\$191,447</u>	<u>\$636,212</u>	<u>\$559,196</u>	<u>\$1,057,420</u>	<u>\$1,606,812</u>

*(NOTE 5)*

*(NOTE 4)*

**Explanatory Notes:**

- 1) Year 2021 ending reserves are projected by the Board as of January 1, 2022; FY2021 starts January 1, 2021 and ends December 31, 2021.
- 2) 2022 reserve contributions are budgeted; 2023 is the first year of recommended contributions.
- 3) 0.7% is the estimated annual rate of return on invested reserves
- 4) Accumulated year 2051 ending reserves consider the age, size, overall condition and complexity of the property.
- 5) Threshold Funding Year (reserve balance at critical point).

**FIVE-YEAR OUTLOOK****Council of Unit Owners Mutual 19B  
Condominium of Rossmoor, Inc.**

Silver Spring, Maryland

Line Item	Reserve Component Inventory	RUL = 0 FY2021	1 2022	2 2023	3 2024	4 2025	5 2026
<b><u>Exterior Building Elements</u></b>							
1.060	Balconies, Concrete, Repairs and Waterproof Coating Applications					66,855	
1.105	Balconies, Railings, Aluminum					144,065	
1.260	Light Fixtures						13,448
1.281	Roofs, Asphalt Shingles, Remaining, Phased					241,607	248,855
1.590	Soffit and Fascia, Aluminum, Remaining, Phased					21,497	22,142
1.820	Walls, Masonry, Inspections and Repairs, Phased			169,638	174,727		
1.980	Windows and Doors, Common, Phased			64,068	65,990		
<b><u>Interior Building Elements</u></b>							
2.198	Floor Coverings, Carpet, Hallways, Near Term				117,588		
2.558	Light Fixtures, Hallways, Near Term				42,125		
2.798	Paint Finishes, Hallways and Stairwells, Near Term				127,740		
<b><u>Building Services Elements</u></b>							
3.070	Air Handling and Condensing Units, Split Systems, Phased		25,199				
3.320	Elevators, Hydraulic, Pumps and Controls		757,050				
3.330	Elevators, Hydraulic, Cylinders		201,880				
3.555	Life Safety System, Control Panels			33,418			
3.583	Operators, Automatic Doors					43,332	
<b><u>Property Site Elements</u></b>							
4.020	Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping				25,788		
4.130	Concrete Patios, Partial					3,602	
4.140	Concrete Sidewalks, Partial					15,194	
4.650	Pipes, Subsurface Utilities, Partial Replacements						
<b>Anticipated Expenditures, By Year (\$11,316,995 over 30 years)</b>		<b>0</b>	<b>984,129</b>	<b>267,124</b>	<b>553,958</b>	<b>536,152</b>	<b>284,445</b>



## 4. RESERVE COMPONENT DETAIL

The Reserve Component Detail of this *Reserve Study* includes enhanced solutions and procedures for select significant components. This section describes the Reserve Components, documents specific problems and condition assessments, and may include detailed solutions and procedures for necessary capital repairs and replacements for the benefit of current and future board members. We advise the Board use this information to help define the scope and procedures for repair or replacement when soliciting bids or proposals from contractors. *However, the Report in whole or part is not and should not be used as a design specification or design engineering service.*

### Exterior Building Elements



Front elevation overview



Side elevation overview



Rear elevation overview

## Balconies, Concrete

---

**Line Item:** 1.060

**Quantity:** 55 concrete balconies comprising approximately 3,300 square feet of horizontal surface area. The balconies comprise reinforced concrete with a waterproof coating.

**History:** The Board reports minimal history of repairs

**Condition:** Good to fair overall with finish deterioration and carpets on balconies evident. As mentioned, we note carpet at the balconies. Carpet conceals concrete deterioration, retains water and inhibits drainage. Water trapped by the carpet can result in accelerated concrete deterioration. Therefore, we do not recommend the use of carpet on balcony surfaces.



**Concrete balcony overview**



**Finish deterioration**



**Carpet on balcony**

**Useful Life:** Capital repairs including a close-up visual inspection, patching of delaminated concrete, routing and filling of cracked concrete, and waterproof coating applications every 8- to 12-years.

**Component Detail Notes:** A waterproof coating application minimizes storm water penetration into the concrete and therefore minimizes future concrete deterioration. *Failure to maintain a waterproof coating on the balconies will result in increased concrete repairs and replacements as the balconies age.* Capital repairs may also include replacement of the caulked joint between the balcony and the building, and repair or replacement of the metal railings and railing fastener attachments as needed.

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Our cost includes the following activities per event:

- Partial depth replacement of up to one percent (1%) of the concrete topsides, edges and undersides
- Crack repairs as necessary
- Repairs to the railings as necessary
- Replacement of perimeter sealants as needed
- Application of a waterproof coating (Urethane based elastomeric)
- Paint applications to the undersides

## **Balconies, Railings, Aluminum**

---

**Line Item:** 1.105

**Quantity:** Approximately 1,600 linear feet of aluminum railing at the balconies

**History:** Mostly original with partial replacements as needed. A limited portion of railings at building 91 were replaced in 2021.

**Condition:** Fair overall with fade and finish deterioration evident





**Aluminum railings overview**



**Finish deterioration**

**Useful Life:** Up to 40 years

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## **Gutters and Downspouts, Aluminum**

---

**Line Item:** 1.240

**Quantity:** Approximately 10,100 linear feet of aluminum gutters and downspouts

**History:** The downspouts were replaced in 2018 and the gutters were repositioned at that time.

**Condition:** Good overall with isolated damage evident



**Gutter overview**



**Isolated gutter damage**

**Useful Life:** Up to 30 years

**Component Detail Notes:** The size of the gutter is determined by the roof's watershed area, a roof pitch factor and the rainfall intensity number of the Association's region. We recommend sloping gutters 1/16 inch per linear foot and providing fasteners a maximum of every three feet.

Downspouts can drain 100 square feet of roof area per one square inch of downspout cross sectional area. We recommend the use of downspout extensions and splash blocks at the downspout discharge to direct storm water away from the foundations.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Semi-annually:
  - Clean out debris and leaves that collect in the gutters
  - Repair and refasten any loose gutter fasteners
  - Repair and seal any leaking seams or end caps
  - Verify downspouts discharge away from foundations

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Light Fixtures

---

**Line Item:** 1.260

**Quantity:** Approximately 145 exterior wall mounted light fixtures

**History:** Unknown age

**Condition:** Fair overall with minor rust and finish deterioration evident





**Light fixture overview**



**Minor rust**

**Useful Life:** Up to 25 years

**Priority/Criticality:** Per Board discretion

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- As-needed:
  - Replace burned out bulbs at common fixtures as needed
  - Inspect and repair broken or dislodged fixtures
  - Ensure a waterproof seal between the fixture and building exists

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Roofs, Asphalt Shingles

---

**Line Items:** 1.280 and 1.281

**Quantity:** Approximately 1,340 *squares*<sup>1</sup> of asphalt shingle roofs comprising 190 square of asphalt shingles at building 91 and 1,150 squares of asphalt shingles at the remaining buildings.

**History:** The roof at building 91 was replaced in 2021. The roofs at the remaining buildings were replaced from 2010 through 2012.

**Condition:** The roof at building 91 is in good condition overall. The roofs at the remaining buildings are in good to fair condition with shingle lift, sheathing deflection and isolated missing shingles evident. The Board informs us of a history of leaks with recent repairs conducted.

<sup>1</sup> We quantify the roof area in squares where one square is equal to 100 square feet of surface area.



**Building 91 roof overview**



**Remaining roofs overview**



**Isolated missing shingles**



**Sheathing deflection**



**Shingle lift**



**Shingle lift**





**Shingle lift**

**Useful Life:** 15- to 20-years

**Component Detail Notes:** The existing roof assembly comprises the following:

- Laminate shingles (Building 91 only)
- Three tab shingles (Remaining roofs)
- Boston style ridge caps
- Rubber seal with metal base boot flashing at waste pipes
- Ridge and square hood box vents
- Metal drip edge

Insulation and ventilation are two major components of a sloped roof system. Together, proper insulation and ventilation help to control attic moisture and maintain an energy efficient building. Both insulation and ventilation prevent moisture buildup which can cause wood rot, mold and mildew growth, warp sheathing, deteriorate shingles, and eventually damage building interiors. Sufficient insulation helps to minimize the quantity of moisture that enters the attic spaces and adequate ventilation helps to remove any moisture that enters the attic spaces. These two roof system components also help to reduce the amount of energy that is required to heat and cool a building. Proper attic insulation minimizes heat gain and heat loss between the residential living spaces and attic spaces. This reduces energy consumption year-round. Proper attic ventilation removes excessive heat from attic spaces that can radiate into residential living spaces and cause air conditioners to work harder. Properly installed attic insulation and ventilation work together to maximize the useful life of sloped roof systems.

In addition to moisture control and energy conservation, proper attic insulation and ventilation are essential components to prevent the formation of ice dams. Ice dams occur when warm air accumulates at the peak of an attic while the roof eaves remain cold. Warm air from the attic melts the snow at the ridge of the roof and the water runs down the slope of the roof. At the cold roof eaves, the water refreezes and forms a buildup of snow and ice. This buildup often traps water that can prematurely deteriorate asphalt shingles and ultimately seep under the shingles and cause water damage to the roof deck and building interiors. Proper insulation minimizes the amount of heat that enters attic spaces in the winter and adequate ventilation helps to remove any heat that enters the

attic spaces. Together, these components prevent ice dams with a cold roof deck that melts snow and ice evenly.

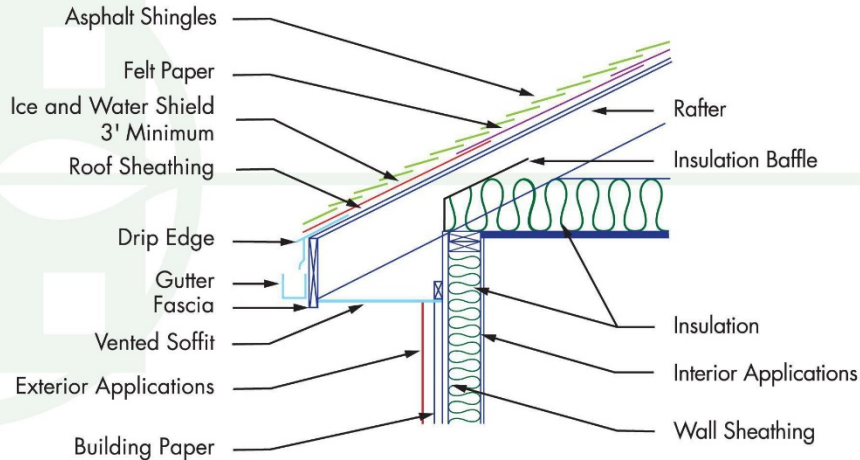
The vents should be clear of debris and not blocked from above by attic insulation. If the soffit vents are blocked from above, installation of polystyrene vent spaces or baffles between the roof joists at these locations can ensure proper ventilation.

Certain characteristics of condition govern the times of replacement. Replacement of an asphalt shingle roof becomes necessary when there are multiple or recurring leaks and when the shingles begin to cup, curl and lift. These conditions are indications that the asphalt shingle roof is near the end of its useful life. Even if the shingles are largely watertight, the infiltration of water in one area can lead to permanent damage to the underlying roof sheathing. This type of deterioration requires replacement of saturated sections of sheathing and greatly increases the cost of roof replacement. Roof leaks may occur from interrelated roof system components, i.e., flashings. Therefore, the warranty period, if any, on the asphalt shingles, may exceed the useful life of the roof system.

Warranties are an indication of product quality and are not a product guarantee. Asphalt shingle product warranties vary from 20- to 50-years and beyond. However, the scope is usually limited to only the material cost of the shingles as caused by manufacturing defects. Warranties may cover defects such as thermal splitting, granule loss, cupping, and curling. Labor cost is rarely included in the remedy so if roof materials fail, the labor to tear off and install new shingles is extra. Other limitations of warranties are exclusions for "incidental and consequential" damages resulting from age, hurricanes, hail storms, ice dams, severe winds, tornadoes, earthquakes, etc. There are some warranties which offer no dollar limit for replacement at an additional cost (effectively an insurance policy) but again these warranties also have limits and may not cover all damages other than a product defect. We recommend a review of the manufacturers' warranties as part of the evaluation of competing proposals to replace a roof system. This evaluation should identify the current costs of remedy if the roof were to fail in the near future. A comparison of the costs of remedy to the total replacement cost will assist in judging the merits of the warranties.

The following cross-sectional schematic illustrates a typical asphalt shingle roof system although it may not reflect the actual configuration at Mutual 19B:

## ROOF SCHEMATIC



© Reserve Advisors

Contractors use one of two methods for replacement of sloped roofs, either an overlayment or a tear-off. Overlayment is the application of new shingles over an existing roof. However, there are many disadvantages to overlayment including hidden defects of the underlying roof system, absorption of more heat resulting in accelerated deterioration of the new and old shingles, and an uneven visual appearance. Therefore, we recommend only the tear-off method of replacement. The tear-off method of replacement includes removal of the existing shingles, flashings if required and underlayments.

The Association should plan to coordinate the replacement of gutters and downspouts with the adjacent roofs. This will result in the most economical unit price and minimize the possibility of damage to other roof components as compared to separate replacements.

***Preventative Maintenance Notes:*** We recommend the Association maintain a service and inspection contract with a qualified professional and record all documentation of repairs conducted. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Record any areas of water infiltration, flashing deterioration, damage or loose shingles
  - Inspect for ice dams and implement repairs as needed if issues are reoccurring
  - Trim tree branches that are near or in contact with roof
- As-needed:

- Ensure proper ventilation and verify vents are clear of debris and not blocked from attic insulation

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Skylights

---

**Line Item:** 1.580

**Quantity:** Seven each at the entrances to the buildings

**History:** Varied unknown ages with repairs conducted three- to five-years ago

**Condition:** Good to fair overall



**Useful Life:** Up to 25 years

**Component Detail Notes:** Skylights have considerably shorter lives when compared to windows and doors of similar construction due to an increased exposure to weather elements. Snow drifts and wind driven rains cause excessive wear to the seals and frames. Failed seals or glass are common occurrences as the skylights age and approach the end of their useful lives.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect and repair flashing damage and perimeter sealant
  - Verify no signs of water infiltration or frame damage



**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Soffit and Fascia, Aluminum

---

**Line Item:** 1.590

**Quantity:** Approximately 9,550 square feet of aluminum soffits and fascia at the buildings except for building 91

**History:** Mostly original with repairs and replacement conducted as needed. The soffit and fascia at building 91 was replaced in 2021/2022.

**Condition:** Good to fair overall with finish deterioration evident



**Aluminum soffit overview**



**Finish deterioration**

**Useful Life:** Up to 40 years

**Component Detail Notes:** Consideration of appearance largely governs the decision to replace the aluminum soffits and fascia, in whole or partially, prior to the end of their useful life. Maintenance and partial replacements of the soffits and fascia may extend the useful life. Normal deterioration mainly relates to fading of the exterior finish from exposure to sunlight, weathering and air pollutants. The lack of replacement pieces matching the color and profile of the existing soffits and fascia may result in the need for a premature replacement.

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Walls, Masonry

---

**Line Item:** 1.820

**Quantity:** Approximately 123,000 square feet of the exterior walls

**History:** No reported history of repairs

**Condition:** Fair overall with cracks, mortar deterioration, sealant deterioration, lintel rust, efflorescence and spalling evident.



**Masonry overview**



**Efflorescence and sealant deterioration at building 94**



**Efflorescence at building 94**



**Sealant deterioration at building 93**

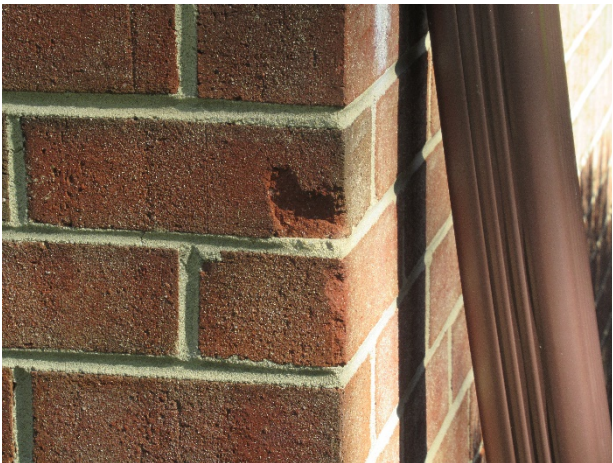




**Lintel rust and mortar deterioration at building 93**



**Masonry and mortar cracks at building 92**



**Masonry spall at building 92**



**Sealant cracks at building 92**



**Masonry cracks and mortar deterioration at building 90**



**Efflorescence and mortar deterioration at building 90**





**Mortar deterioration at building 89**



**Efflorescence and mortar deterioration at building 88**



**Masonry crack at building 88**



**Sealant crack at building 88**



**Crack at Building 93**

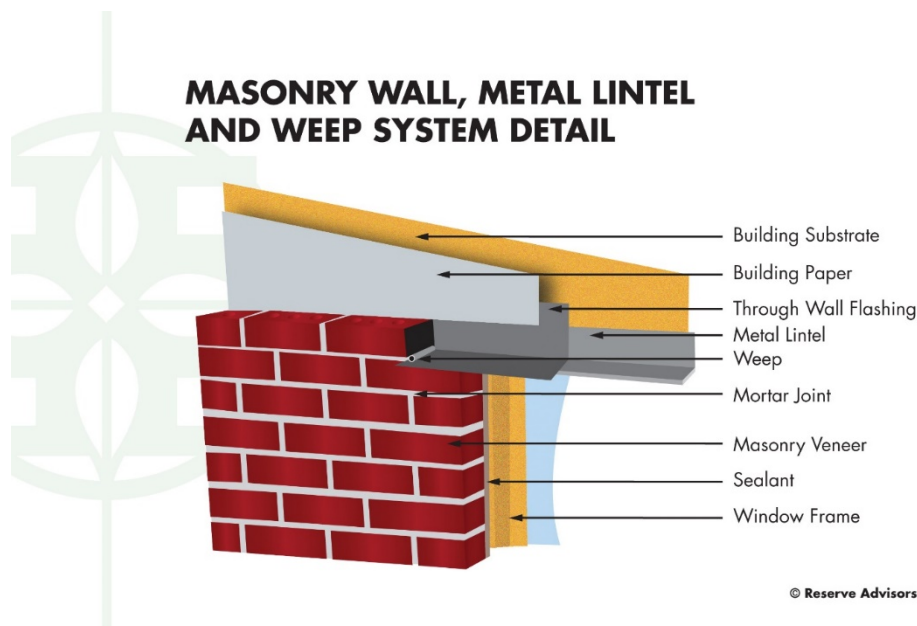
***Useful Life:*** We advise a complete inspection of the masonry and related masonry repairs every 8- to 12-years to forestall deterioration.

**Component Detail Notes:** Common types of masonry deterioration include efflorescence, spalling, joint deterioration and cracking. The primary cause of efflorescence, cracks and face spall is water infiltration; therefore, prevention of water infiltration is the principal concern for the maintenance of masonry applications.

Repointing is a process of raking and cutting out defective mortar to a depth of not less than 1/2 inch nor more than 3/4 inch and replacing it with new mortar. Face grouting is the process of placing mortar over top of the existing mortar. We advise against face grouting because the existing, often deteriorated mortar does not provide a solid base for the new mortar. New mortar spalls at face grouted areas will likely occur. One purpose of a mortar joint is to protect the masonry by relieving stresses within the wall caused by expansion, contraction, moisture migration and settlement. Repointed mortar joints are more effective if the mortar is softer and more permeable than the masonry units, and no harder or less permeable than the existing mortar. The masonry contractor should address these issues within the proposed scope of work.

We recommend an inspection, repair and replacement of the steel lintels. Lintels are structural supports or beams above windows and doors. Fatigued lintels also allow the direct penetration of storm water into the wall assembly. These inspections should locate areas of rust on the lintels and cracks or other structural damage to the walls around lintels. The contractor should remove any areas of rust, prime and paint these lintels. Paint protects and maximizes the remaining useful life of the lintels and therefore the exterior wall systems. Structural damage can eventually lead to costly replacements of lintels and surrounding wall systems. The following diagram details a typical metal lintel and weep system and may not reflect the actual configuration at Mutual 19B:

The contractor should remove any areas of rust, prime and paint exposed shelf angles at windows. The following diagram details a typical metal lintel and weep system, however, this detail is similar to construction at shelf angles and may not reflect the actual configuration at Mutual 19B:





**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Our cost includes the following activities:

- Complete inspection of the masonry
- Repointing of up to five percent (5%) of the masonry
- Replacement of a limited amount of the masonry (The exact amount of area in need of replacement will be discretionary based on the actual future conditions and the desired appearance.)
- Replacement/flashing installation at up to two percent (2%) of the metal lintels
- Paint applications to the metal lintels (approximately 5,310 linear feet)
- Replacement of up to fifty percent (50%) of the sealants at the window and door

## Windows and Doors

---

**Line Item:** 1.980

**Quantity:** 1,980 square feet of common windows and doors

**History:** Original

**Condition:** Fair overall with reports of unsatisfactory door operation and wear evident



**Common door overview**



**Common windows and door overview**

**Useful Life:** Up to 40 years

**Component Detail Notes:** Properly designed window and door assemblies anticipate the penetration of some storm water beyond the gaskets. This infiltrated storm water collects in an internal drainage system and drains, or exits, the frames through weep holes. These weep holes can become clogged with dirt or if a sealant is applied, resulting in trapped storm water. However, as window frames, gaskets and sealants deteriorate,

leaks into the interior can result. The windows and doors will eventually need replacement or major capital repairs to prevent water infiltration and damage from wind driven rain.

The thermal efficiencies of the window and door assemblies are affected by their design and construction components. These components include glazings, thickness of air space between glazings, low-conductivity gas, tinted coatings, low-e coatings and thermal barriers. The Association should thoroughly investigate these component options at the time of replacement. Some manufacturers may include these components as part of the standard product and other manufacturers may consider these components as options for an additional cost. Mutual 19B should review the specifications provided by the manufacturers to understand the thermal design and construction components of the proposed assemblies.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect and repair loose weather stripping and/or lock damage
  - Inspect for broken glass and damaged screens
  - Record instances of water infiltration, trapped moisture or leaks
- As-needed:
  - Verify weep holes are unobstructed and not blocked with dirt or sealant
  - Replace damaged or deteriorated sliding glass rollers

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Interior Building Elements

### Elevator Cab Finishes

---

**Line Item:** 2.100

**Quantity:** Seven elevators; the cab finishes consist of:

- Carpet floor coverings
- Laminate wall coverings
- Acrylic ceiling finishes

**History:** The carpet was replaced in 2014, the remaining finishes are original.

**Condition:** Good to fair overall



**Elevator cab finishes  
overview**

**Useful Life:** Up to 20 years

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We recommend the Association funds interim replacement of the carpet floor coverings through the operating budget.

## **Floor Coverings, Carpet, Hallways**

---

**Line Items:** 2.198 and 2.200

**Quantity:** Approximately 2,460 square yards at the hallways (Contractor measurements will vary from the actual floor area due to standard roll lengths, patterns and installation waste.)

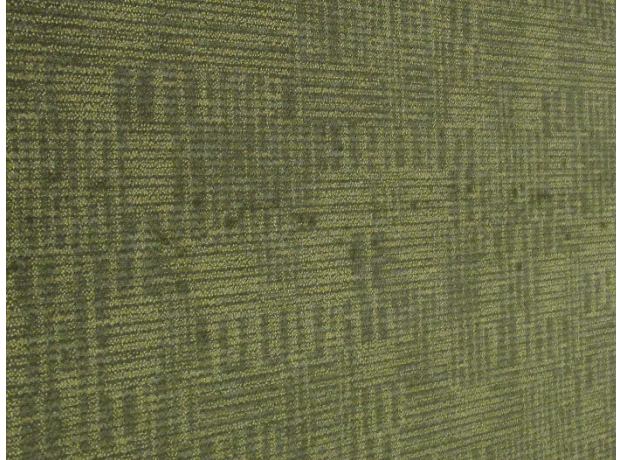
**History:** All the carpet was replaced in 2014 with the carpet in building 91 replaced in 2021/2022.

**Condition:** Fair overall with stains evident





**Carpet floor coverings overview**



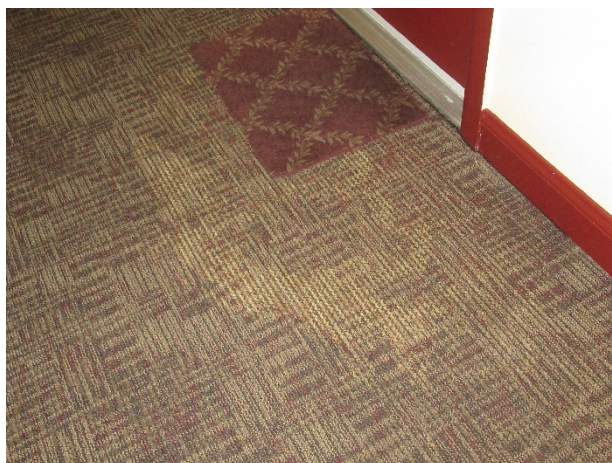
**Stains**



**Stains**



**Stains**



**Stains**

**Useful Life:** 8- to 12-years

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Due to the varied age in carpet, we recommend the Association budget for near term replacement of all the carpet except for building 91 during the initial near term event. Subsequent replacement events should include replacement of all the carpet.

## **Floor Coverings, Tile, Hallways**

---

**Line Item:** 2.240

**Quantity:** Approximately 300 square yards at the hallways and common areas

**History:** Replaced in 2014

**Condition:** Good overall



**Floor coverings**

**Useful Life:** Up to 30 years although replacement of tile is often based on discretionary redecorating prior to the tile reaching the end of its useful life.

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. The Association should fund regrouting of the tiles through the operating budget if necessary.



## Light Fixtures, Hallways

---

**Line Item:** 2.558 and 2.260

**Quantity:** Approximately 300 interior wall mounted light fixtures located throughout the hallways

**History:** Replaced in 2005 with the light fixtures at building 91 replaced in 2021/2022.

**Condition:** Reported satisfactory. Good to fair overall with finish deterioration



Light fixture overview



Finish deterioration and burnt out bulb

**Useful Life:** Up to 30 years

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Due to the varied age in the light fixtures, we recommend the Association budget for near term replacement of all the light fixtures except for building 91 during the initial near term event. Subsequent replacement events should include replacement of all the light fixtures.

## Mailboxes

---

**Line Item:** 2.700

**Quantity:** 210 unit mailboxes

**History:** Original

**Condition:** Reported satisfactory overall



**Mailboxes overview**

**Useful Life:** Up to 35 years

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## **Paint Finishes, Hallways and Stairwells**

---

**Line Items:** 2.798 and 2.800

**Quantity:** Approximately 97,400 square feet on walls and ceilings at the hallways, stairwells

**History:** Painted in 2014 with the paint finishes at building 91 conducted in 2021/2022.

**Condition:** Fair overall with scuff marks and damage evident



**Paint finishes overview**



**Scuff mark**





**Scuff mark**



**Damage**



**Scuff mark and damage**



**Damage**



**Scuff mark**

**Useful Life:** 8- to 12-years

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Due to the varied age in the paint finishes, we recommend the Association budget for near term paint finishes at every building except for building 91 during the initial near term event. Subsequent paint finish application events should include paint finishes applications at every building.

## Building Services Elements

### Air Handling and Condensing Units, Split Systems

---

**Line Item:** 3.070

**Quantity:** Seven air handling units for the building common areas

**History:** Varied ages from 2001 through 2017

**Conditions:** Reported satisfactory without operational deficiencies



**Air handling unit overview**

**Useful Life:** 15- to 20-years

**Component Detail Notes:** The Association may choose to rebuild an air handling unit prior to complete replacement. However, this activity becomes less desirable as air handling units age due to the scarcity of parts. We regard interim replacement of belts, motors and filters as normal maintenance and base our estimates on complete replacements.

**Preventative Maintenance Notes:** We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:



- Semi-annually:
  - Lubricate motors and bearings
  - Change or clean air filters as needed
  - Inspect base pan, cabinet and clear obstructions as necessary
- Annually:
  - Clean drain pans, clean fan assembly, inspect fan drive system and controls
  - Inspect and clean accessible ductwork as needed
  - Check fan belt alignment and tension

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## Electrical System

---

**Line Item:** 3.300

**History:** Primarily original to construction.

**Condition:** Reported satisfactory



**Electrical panel overview**

**Useful Life:** Up to and sometimes beyond 70 years

**Component Detail Notes:** We give a brief overview of electrical system components in the following sections of this narrative.

*Primary Switchgear* - The primary switchgear is located where the electric supply comes into the building. Switchgear can include associated controls, regulating, metering and protective devices, and is used for the transmission, distribution and conversion of electric power for use within the building. Switchgear components

have a useful life of up to and sometimes beyond 70 years. Replacement is often determined by a desired upgrade of the entire electrical system.

*Transformer* - A transformer is an electric device with two or more coupled windings used to convert a power supply from one voltage to another voltage. Transformers within a building lower the supplied electrical voltage to a level that can be utilized by the building's equipment and unit owners. Transformers do not utilize mechanical components and therefore have a long useful life. However, the Association should anticipate periodic replacement of a limited quantity of transformers.

*Distribution Panel* - The distribution panel is an electric switchboard or panel used to control, energize or turn off electricity in total or for individual circuits. The panel also distributes electricity to individual and controllable circuits. One or more distribution panels may exist and further distribute electricity to individual panel boards for each unit. The distribution panel is enclosed in a box and contains circuit breakers, fuses and switches. Distribution panels have a useful life of up to and sometimes beyond 70 years.

*Circuit Protection* - Once electricity is distributed throughout the building and is at a usable voltage level, the electricity is divided into circuits. Each circuit requires circuit protection. Circuit protection is necessary to prevent injury and fires, and minimize damage to electrical components and disturbances to the electrical system. Abnormalities in the circuit can include overloads, short circuits and surges. Circuit protection devices are commonly referred to as circuit breakers and fuses. For the protection of the circuits in the units and common areas, we recommend the use of only circuit breakers as they are safer than fuses. However, the use of fuses is common for equipment like emergency systems and individual items of equipment. Fuses with a low capacity rating can easily be replaced with fuses of a higher rating resulting in an unprotected, overloaded and unsafe circuit. The circuit protection panels have a useful life of up to and sometimes beyond 70 years.

*Conductors* - Conductors are the electrical wires that convey electricity to the units, light fixtures, receptacles and appliances. Conductors in typical high and low capacity circuits are copper, as is reported the case at Mutual 19B. Copper conductors have an indefinite useful life.

*Conductor Insulation and Conduit* - Conductor insulation provides protection against the transfer of electricity. Conductor insulation can eventually become brittle and damaged from rodents or heat from many years of service. Conductor conduit is a pipe or tube used to enclose insulated electric wires to protect them from damage. Steel conductor conduit, although galvanized, will eventually rust if used in damp conditions. The useful life of conductor insulation and conduit is indeterminate.

***Preventative Maintenance Notes:*** We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the

Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect system for signs of electrical overheating, deterioration, and/or panel corrosion
  - Clean and vacuum exterior and interior switchboards
- Five-Year Cycles:
  - Check power meters, lamps, indicators, and transformers for deficiencies
  - Inspect wiring, relays, power supply units, and timers
  - Verify surge protection is intact
- As-needed:
  - Test outlets and ground-fault circuit interrupters (GFCI's) for faulty components
  - Examine the insulation at switchgears for signs of deterioration or cracking
  - Ensure all conductors are clean and dry with no moisture build-up
  - Check and inspect for loose wire connections
  - Clean and clear dust and debris away from system components
  - Check for flickering or dimming light fixtures as these could indicate a short in the wiring, arcing, or an over-extension of the electrical system
  - Conduct thermal image scanning if system experiences numerous or consistent outages
  - Keep an accurate record of all repairs to the electrical system

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We recommend the Association budget to replace the main switchgear, distribution and circuit protection panels. Updates of this Reserve Study will consider possible changes in the scope and times of component replacements based on the conditions, including the need for replacement of the wires.

We recommend the Association conduct thermoscans of the distribution panels and circuit protection panels, and inspections of the transformers for any indications of arcing, burning or overheating on a regular basis, funded through the operating budget. Verification of the integrity of all connection points minimizes the potential for arcing and fires.



## Elevators, Hydraulic

---

**Line Items:** 3.320 and 3.330

**Quantity:** Seven hydraulic passenger elevators

**History:** A portion of the components for the elevators in buildings 88, 89 and 90 were replaced in approximately 2001. The components for the remaining elevators are reported original.

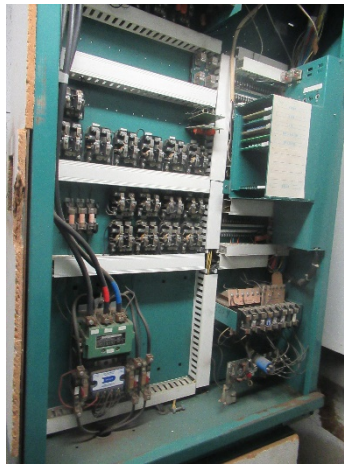
**Condition:** Reported in unsatisfactory condition



**Elevator controls, 2001 replacement**



**Elevator controls, original**



**Elevator controls, original**

**Useful Life:** Pumps and controls have a useful life of up to 35 years. Cylinders have a useful life of up to 45 years.

**Component Detail Notes:** Major components in a hydraulic elevator system include the pump, controls, cylinder, fluid reservoir and a valve between the cylinder and reservoir. Once activated by the elevator controls, the pump forces hydraulic fluid from the reservoir

into the cylinder. The piston within the cylinder rises lifting the elevator cab. The elevator cab lowers at a controlled rate when the controls open the valve.

**Preventative Maintenance Notes:** We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. We also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the unit's age, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Ongoing:
  - Maintain a maintenance contract with a qualified professional for the elevator(s) and follow the manufacturer's specific recommended maintenance plan adhering to local, state, and/or federal inspection guidelines
- As-needed:
  - Keep an accurate log of all repairs and inspection dates
  - Inspect and adjust misaligned door operators
  - Check for oil leaks or stains near the pump housing and confirm oil levels are adequate
  - Clear and remove any items located in the elevator machine room(s) not associated with the elevator components (These rooms should never be used for storage)
  - Lubricate the hydraulic cylinders
  - Inspect electrical components for signs of overheating or failure
  - Inspect spring buffers in elevator pit for signs of corrosion or loose attachments
  - Ensure air temperature and humidity of machine/pump housing room meets the designated specified range for proper operation
  - Ensure all call buttons are in working condition
  - Check elevator cabs for leveling accuracy to prevent tripping hazards

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We anticipate the following hydraulic elevator system components will require replacement:

- Cab control panel
- Door operator
- Hallway panels/buttons
- Microprocessor based controller
- Pump (Power Unit) (HP-HP)

These costs may vary based on the desired scope of the actual replacements, changes in technology and requirements of local codes or ordinances at the actual times of replacements. However, we judge our estimated costs sufficient to budget appropriate reserves at this time. The Association should require the contractor to verify that elevator

component replacements include all of the necessary features for the latest in elevator code compliance.

## Life Safety System

---

**Line Items:** 3.555 and 3.560

**Quantity:** The life safety system at Mutual 19B includes the following components:

- Seven control panels
- Emergency light fixtures
- Exit light fixtures
- Detectors
- Pull stations
- Audio/Visual fixtures
- Wiring

**History:** Most of the emergency light fixtures were replaced from 2016 through 2021. The remaining life safety system components are original.

**Conditions:** Reported satisfactory



Control panel overview



Life safety components overview





**Life safety components overview**

**Useful Life:** Up to 25 years for the devices and up to 15 years for the control panel

**Preventative Maintenance Notes:** We recommend the Association obtain and adhere to the manufacturer's recommended maintenance plan. In accordance with *NFPA 72* (National Fire Alarm and Signaling Code) we also recommend the Association maintain a maintenance contract with a qualified professional. The required preventative maintenance may vary in frequency and scope based on the age of the components, operational condition, or changes in technology. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Semi-annually:
  - Inspect and test all components and devices, including, but not limited to, control panels, annunciators, detectors, audio/visual fixtures, signal transmitters and magnetic door holders
  - Test backup batteries
- As-needed:
  - Ensure clear line of access to components such as pull stations
  - Ensure detectors are properly positioned and clean of debris

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Changes in technology or building codes may make a replacement desirable prior to the end of the functional life. Our estimate of future cost considers only that amount necessary to duplicate the same functionality. Local codes or ordinances at the actual time of replacement may require a betterment as compared to the existing system. A betterment could result in a higher, but at this time unknown, cost of replacement.

## **Operators, Automatic Doors**

---

**Line Item:** 3.583

**Quantity:** Seven each

**History:** Unknown, with switches were replaced in 2020

**Condition:** Reported satisfactory



**Automatic door operators overview**

**Useful Life:** Up to 15 years

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.

## **Pipes**

---

**Line Item:** 3.605

**Quantity:** We estimate that each unit shares domestic water plumbing pipes for both the kitchen and bathroom with the adjacent unit.

**History and Condition:**

- Domestic Water, Supply and Return – Original and reported in satisfactory condition
- Sanitary Waste Disposal and Vent – Original and reported in satisfactory condition

**Component Detail Notes:** The Association is responsible for maintenance and replacement of the piping systems arranged in vertical and horizontal segments. These pipes comprise the following:

- Domestic cold water
- Vent plumbing fixtures
- Sanitary waste disposal

The exact locations and conditions of the pipes were not ascertained due to the nature of their location and the non-invasive nature of our inspection. We comment on the respective quantities and conditions of the piping systems in the following sections of this narrative.

**Domestic Water** - Copper piping is the predominant type of pipe used in new construction for domestic water piping. With low mineral content in the water, the useful life of copper domestic water pipes is up to and sometimes beyond 80 years. However, there is recent evidence that copper piping prematurely develops pinhole leaks.

In the event that numerous pinhole leaks develop or occur throughout the system of pipes, Mutual 19B should also consider “in-place” pipe restoration technology. This process includes drying, sandblasting away interior pipe occlusions and applying an epoxy lining to the interior surfaces of the pipes. Future updates of this study will consider the possibility of the pipe restoration process in lieu of pipe replacement at Mutual 19B. Restoration technology can extend the useful life of a pipe system thus avoiding a system pipe replacement.

**Sanitary Waste Disposal and Vent** - The cast iron pipes typically deteriorate from the inside out as a result of sewer gases, condensation and rust.

**Valves** - The piping systems include various valves. Identification of a typical useful life and remaining useful life for individual valves is difficult. Associations typically replace valves on an as needed basis in our experience.

**Preventative Maintenance Notes:** The required preventative maintenance may vary in frequency and scope based on the building’s age and demands of the piping systems. We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Quarterly:
  - Inspect all visible piping for corrosion and leaks, including common areas or areas immediately surrounding pipes such as insulation, ceiling tiles or the floor for moisture, water accumulation, mold or mildew
- Annually:
  - Verify system pressure is sufficient
  - Check accessible valves for proper operation
  - Test backflow prevention devices
  - Inspect and obtain certification for pressure relief valves
  - Test drain line flow rates
  - Mechanically or chemically clean sewer lines as needed

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer



**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Our cost assumes replacement of all pipes located within each wall opening, associated branch piping, fittings and minimal interior finishes. However, the cost does not include temporary housing for affected residents, pipes within the units or significant interior finishes.

The Association budgets an amount in the annual operating budget for minor pipe repairs and replacements. We recommend the Association continue to fund interim pipe replacements, prior to more aggregate replacements identified in the following paragraphs, from the operating budget. We also recommend the Association contract for an invasive investigation of the condition of the piping system prior to beginning more aggregate replacements, funded through the operating budget.

An invasive analysis of the piping systems will provide various replacement options. Replacement of the systems as an aggregate event will likely require the use of special assessments or loans to fund the replacements.

Although it is likely that the times of replacement and extent of repair costs may vary from the budgetary allowance, Mutual 19B could budget sufficient reserves for the beginning of these pipe replacements and have the opportunity to adjust its future reserves up or down to meet any changes to these budgetary estimates. Updates of this Reserve Study would incorporate changes to budgetary costs through a continued historical analysis of the rate of deterioration and actual pipe replacements to budget sufficient reserves.

We recommend the Association budget for replacement of the following items through the operating budget:

- Replacement of valves on an as-needed basis
- Minor pipe repairs and replacements
- invasive investigation of the condition of the piping system prior to beginning more aggregate replacements
- Rodding of waste pipes

## **Trash Chute and Doors**

---

**Line Item:** 3.880

**Quantity:** Seven trash chutes with doors; one at each building

**History:** Original with partial door replacements

**Condition:** Reported satisfactory



**Trash chute overview**

**Useful Life:** Up to 65 years.

**Component Detail Notes:** Damaged doors or poor door operation will result in a decreased useful life. The Association should fund interim repairs and partial replacements of the doors through the operating budget.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Weekly:
  - Clean doors and latches
  - In accordance with *NFPA 82* and fire code, ensure all trash chute doors self-latch and self-close
- Monthly:
  - Check operation of discharge door
  - Inspect fusible link and replace if necessary
  - If applicable, inspect, reinforce and/or replace discharge elbow
- Quarterly:
  - If applicable, check vent cap for damage and tighten fasteners
- Semi-annually:
  - Lubricate and/or replace doors, hinges and latches
  - Clear obstructions, clean and scrape trash chute and doors. The frequency of this activity may vary based upon occupancy and usage rates. This activity may also be based upon limitation of unwanted odors, prevention of harmful bacteria, pest infiltration and debris removal to further prevent fire hazards.

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.



## Property Site Elements

### Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping

**Line Item:** 4.020

**Quantity:** Approximately 11,800 square yards of asphalt pavement

**History:** The asphalt pavement was repaved in 2020

**Condition:** Good overall

**Useful Life:** Three- to five-years

**Component Detail Notes:** Proposals for seal coat applications should include crack repairs and patching. The contractor should only apply seal coat applications after repairs are completed. A seal coat does not bridge or close cracks; therefore, unrepaired cracks render the seal coat applications useless.

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Our cost includes an allowance for crack repairs and patching of up to two percent (2%) of the pavement.

### Asphalt Pavement

**Line Item:** 4.040

**Quantity:** Approximately 11,800 square yards of asphalt pavement

**History:** The asphalt pavement was repaved in 2020

**Condition:** Good overall with vehicular fluid stains evident





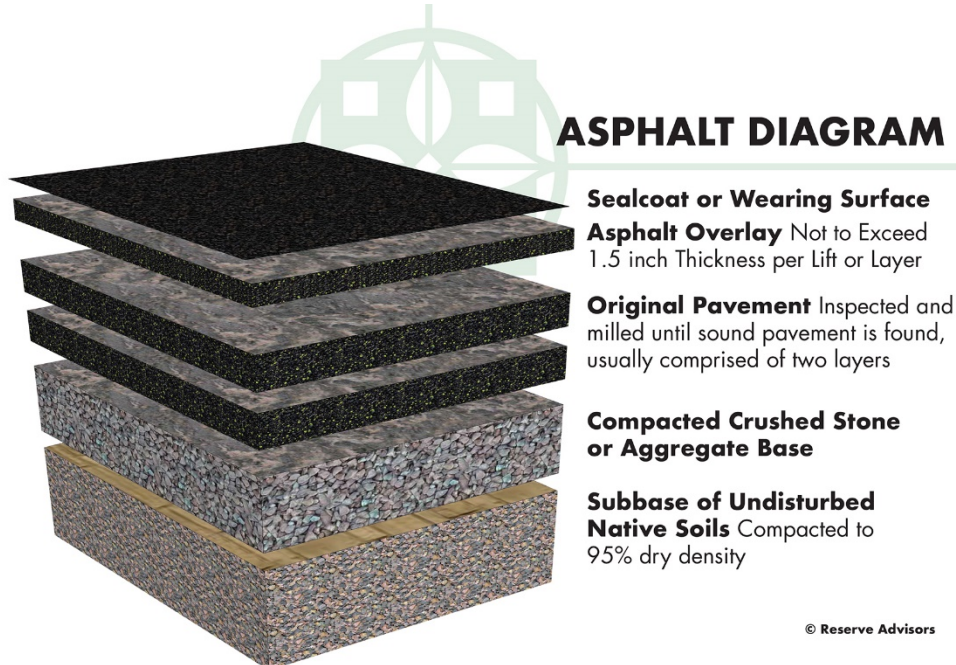
**Asphalt pavement overview**



**Asphalt pavement overview**

**Useful Life:** 15- to 20-years with the benefit of timely crack repairs and patching every three- to five-years

**Component Detail Notes:** The initial installation of asphalt uses at least two lifts, or two separate applications of asphalt, over the base course. The first lift is the binder course. The second lift is the wearing course. The wearing course comprises a finer aggregate for a smoother more watertight finish. The following diagram depicts the typical components although it may not reflect the actual configuration at Mutual 19B:



The manner of repaving is either a mill and overlay or total replacement. A mill and overlay is a method of repaving where cracked, worn and failed pavement is mechanically removed or milled until sound pavement is found. A new layer of asphalt is overlaid atop the remaining base course of pavement. Total replacement includes the removal of all

existing asphalt down to the base course of aggregate and native soil followed by the application of two or more new lifts of asphalt. We recommend mill and overlayment on asphalt pavement that exhibits normal deterioration and wear. We recommend total replacement of asphalt pavement that exhibits severe deterioration, inadequate drainage, pavement that has been overlaid multiple times in the past or where the configuration makes overlayment not possible. Based on the apparent visual condition and configuration of the asphalt pavement, we recommend the mill and overlay method for repaving at Mutual 19B.

Proposals for seal coat applications should include crack repairs and patching. The contractor should only apply seal coat applications after repairs are completed. A seal coat does not bridge or close cracks, therefore, unrepaired cracks render the seal coat applications useless.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect for settlement, large cracks and trip hazards, and ensure proper drainage
  - Repair areas which could cause vehicular damage such as potholes
- As needed:
  - Perform crack repairs and patching

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Our cost includes an allowance for crack repairs and patching of up to two percent (2%) of the pavement. Our cost for milling and overlayment includes area patching of up to twenty percent (20%).

## Catch Basins

---

**Line Item:** 4.100

**Quantity:** Six catch basins<sup>2</sup>

**History:** Original with repairs as needed

**Condition:** Good overall

<sup>2</sup> We utilize the terminology catch basin to refer to all storm water collection structures including curb inlets.



**Catch basin overview**



**Catch basin overview**

**Useful Life:** The useful life of catch basins is up to 65 years. However, achieving this useful life usually requires interim capital repairs or partial replacements every 15- to 20-years.

**Component Detail Notes:** Erosion causes settlement around the collar of catch basins. Left unrepaired, the entire catch basin will shift and need replacement.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect and repair any settlement and collar cracks
  - Ensure proper drainage and inlets are free of debris
  - If property drainage is not adequate in heavy rainfall events, typically bi-annual cleaning of the catch basins is recommended

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We recommend the Association plan for inspections and capital repairs to the catch basins in conjunction with repaving.

## Concrete Curbs and Gutters

---

**Line Item:** 4.110

**Quantity:** Approximately 4,300 linear feet of concrete curbs and gutters

**Condition:** Good overall with isolated concrete spall





**Concrete curbs and gutters overview**



**Isolated concrete spall**

**Useful Life:** Up to 65 years although interim deterioration of areas is common

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect and repair major cracks, spalls and trip hazards
  - Mark with orange safety paint prior to replacement or repair
  - Repair or perform concrete leveling in areas in immediate need of repair or possible safety hazard

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We estimate that up to 860 linear feet of curbs and gutters, or twenty percent (20%) of the total, will require replacement during the next 30 years.

## **Concrete Patios**

---

**Line Item:** 4.130

**Quantity:** 32 total, average of 60 square feet each

**Condition:** Good to fair overall condition with carpets on patios and cracks evident. As mentioned, we note carpet at the patios. Carpet conceals concrete deterioration, retains water and inhibits drainage. Water trapped by the carpet can result in accelerated concrete deterioration. Therefore, we do not recommend the use of carpet on patio surfaces.





**Concrete patio overview**



**Carpet on balcony**



**Patio crack**

**Useful Life:** Up to 65 years although interim deterioration of areas is common

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect and repair major cracks, spalls and trip hazards
  - Mark with orange safety paint prior to replacement or repair
  - Repair or perform concrete leveling in areas in immediate need of repair or possible safety hazard

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We recommend the Association plan for replacement of up to 12 patios, or approximately thirty-eight percent (37.5%) of the total, during the next 30 years.



## Concrete Sidewalks

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**Line Item:** 4.140

**Quantity:** Approximately 20,200 square feet of concrete sidewalks

**Condition:** Good to fair overall with cracks, concrete scaling and isolated concrete undermining evident



**Concrete sidewalk overview**



**Concrete scaling**



**Concrete scaling and crack**



**Concrete sidewalk crack**





**Concrete sidewalk crack**



**Concrete sidewalk scaling**



**Concrete sidewalk undermining**

**Useful Life:** Up to 65 years although interim deterioration of areas is common

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- Annually:
  - Inspect and repair major cracks, spalls and trip hazards
  - Mark with orange safety paint prior to replacement or repair
  - Repair or perform concrete leveling in areas in immediate need of repair or possible safety hazard

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. We estimate that up to 8,100 square feet of concrete sidewalks, or approximately forty percent (40.1%) of the total, will require replacement during the next 30 years.

## Light Poles and Fixtures

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**Line Item:** 4.560

**Quantity:** Eight poles with light fixtures

**History:** Replaced in 2012 with one pole and fixture installed in recently

**Condition:** Good to fair overall with isolated lean evident



**Light pole and fixture overview – Note: lean**

**Useful Life:** Up to 25 years

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- As-needed:
  - Inspect and repair broken or dislodged fixtures, and leaning or damaged poles
  - Replaced burned out bulbs as needed

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3.



## **Pipes, Subsurface Utilities**

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**Line Item:** 4.650

**Condition:** Reported satisfactory

**Useful Life:** Up to and likely beyond 85 years

**Component Detail Notes:** The Association maintains the subsurface utility pipes throughout the property. The exact amounts and locations of the subsurface utility pipes were not ascertained due to the nature of the underground construction and the non-invasive nature of the inspection.

**Preventative Maintenance Notes:** We note the following select recommended preventative maintenance activities to maximize the remaining useful life:

- As-needed:
  - Video inspect waste pipes for breaks and damaged piping
  - Monitor for water and gas leaks through pressure losses and present odors
  - Partially replace damaged section of pipes

**Priority/Criticality:** Defer only upon opinion of independent professional or engineer

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. At this time we do not anticipate replacement of continuous lengths of subsurface utility pipes. Rather we recommend the Association budget for repairs to isolated occurrences of breached utilities. Although it is likely that the times of replacement and extent of repair costs may vary from the budgetary allowance, Mutual 19B could budget sufficient reserves for these utility repairs and have the opportunity to adjust its future reserves up or down to meet any changes to these budgetary estimates. Updates of this Reserve Study would incorporate changes to budgetary costs through a continued historical analysis of the rate of deterioration and actual repairs to budget sufficient reserves.

## Reserve Study Update

An ongoing review by the Board and an Update of this Reserve Study are necessary to ensure an equitable funding plan since a Reserve Study is a snapshot in time. Many variables change after the study is conducted that may result in significant overfunding or underfunding the reserve account. Variables that may affect the Reserve Funding Plan include, but are not limited to:

- Deferred or accelerated capital projects based on Board discretion
- Changes in the interest rates on reserve investments
- Changes in the *local* construction inflation rate
- Additions and deletions to the Reserve Component Inventory
- The presence or absence of maintenance programs
- Unusually mild or extreme weather conditions
- Technological advancements

Periodic updates incorporate these variable changes since the last Reserve Study or Update. We recommend the Board budget for an Update to this Reserve Study in two- to three-years. Budgeting for an Update demonstrates the Board's objective to continue fulfilling its fiduciary responsibility to maintain the commonly owned property and to fund reserves appropriately.

## 5.METHODOLOGY

Reserves for replacement are the amounts of money required for future expenditures to repair or replace Reserve Components that wear out before the entire facility or project wears out. Reserving funds for future repair or replacement of the Reserve Components is also one of the most reliable ways of protecting the value of the property's infrastructure and marketability.

Mutual 19B can fund capital repairs and replacements in any combination of the following:

1. Increases in the operating budget during years when the shortages occur
2. Loans using borrowed capital for major replacement projects
3. Level monthly reserve assessments annually adjusted upward for inflation to increase reserves to fund the expected major future expenditures
4. Special assessments

We do not advocate special assessments or loans unless near term circumstances dictate otherwise. Although loans provide a gradual method of funding a replacement, the costs are higher than if the Association were to accumulate reserves ahead of the actual replacement. Interest earnings on reserves also accumulate in this process of saving or reserving for future replacements, thereby defraying the amount of gradual reserve collections. We advocate the third method of *Level Monthly Reserve Assessments* with relatively minor annual adjustments. The method ensures that Unit Owners pay their "fair share" of the weathering and aging of the commonly owned property each year. Level reserve assessments preserve the property and enhance the resale value of the homes.

This Reserve Study is in compliance with and exceeds the National standards<sup>1</sup> set forth by the Association of Professional Reserve Analysts (APRA) fulfilling the requirements of a "Level II Reserve Study Update." These standards require a Reserve Component to have a "predictable remaining Useful Life." Estimating Remaining Useful Lives and Reserve Expenditures beyond 30 years is often indeterminate. Long-Lived Property Elements are necessarily excluded from this analysis. We considered the following factors in our analysis:

- The Cash Flow Method to compute, project and illustrate the 30-year Reserve Funding Plan
- Local<sup>2</sup> costs of material, equipment and labor
- Current and future costs of replacement for the Reserve Components
- Costs of demolition as part of the cost of replacement
- Local economic conditions and a historical perspective to arrive at our estimate of long-term future inflation for construction costs in Silver Spring, Maryland at an annual inflation rate<sup>3</sup>. Isolated or regional markets of

<sup>1</sup> Identified in the APRA "Standards - Terms and Definitions" and the CAI "Terms and Definitions".

<sup>2</sup> See Credentials for additional information on our use of published sources of cost data.

<sup>3</sup> Derived from Marshall & Swift, historical costs and the Bureau of Labor Statistics.

greater construction (development) activity may experience slightly greater rates of inflation for both construction materials and labor.

- The past and current maintenance practices of Mutual 19B and their effects on remaining useful lives
- Financial information provided by the Association pertaining to the cash status of the reserve fund and budgeted reserve contribution
- The anticipated effects of appreciation of the reserves over time in accord with a return or yield on investment of your cash equivalent assets. (We did not consider the costs, if any, of Federal and State Taxes on income derived from interest and/or dividend income).
- The Funding Plan excludes necessary operating budget expenditures. It is our understanding that future operating budgets will provide for the ongoing normal maintenance of Reserve Components.

Updates to this Reserve Study will continue to monitor historical facts and trends concerning the external market conditions.





## 6. CREDENTIALS

### HISTORY AND DEPTH OF SERVICE

**Founded in 1991**, Reserve Advisors is the leading provider of reserve studies, insurance appraisals, developer turnover transition studies, expert witness services, and other engineering consulting services. Clients include community associations, resort properties, hotels, clubs, non-profit organizations, apartment building owners, religious and educational institutions, and office/commercial building owners in 48 states, Canada and throughout the world.

The **architectural engineering consulting firm** was formed to take a leadership role in helping fiduciaries, boards, and property managers manage their property like a business with a long-range master plan known as a Reserve Study.

Reserve Advisors employs the **largest staff of Reserve Specialists** with bachelor's degrees in engineering dedicated to Reserve Study services. Our founders are also founders of Community Associations Institute's (CAI) Reserve Committee that developed national standards for reserve study providers. One of our founders is a Past President of the Association of Professional Reserve Analysts (APRA). Our vast experience with a variety of building types and ages, on-site examination and historical analyses are keys to determining accurate remaining useful life estimates of building components.

**No Conflict of Interest** - As consulting specialists, our **independent opinion** eliminates any real or perceived conflict of interest because we do not conduct or manage capital projects.

### TOTAL STAFF INVOLVEMENT

Several staff members participate in each assignment. The responsible advisor involves the staff through a Team Review, exclusive to Reserve Advisors, and by utilizing the experience of other staff members, each of whom has served hundreds of clients. We conduct Team Reviews, an internal quality assurance review of each assignment, including: the inspection; building component costing; lifing; and technical report phases of the assignment. Due to our extensive experience with building components, we do not have a need to utilize subcontractors.

### OUR GOAL

To help our clients fulfill their fiduciary responsibilities to maintain property in good condition.

### VAST EXPERIENCE WITH A VARIETY OF BUILDINGS

Reserve Advisors has conducted reserve studies for a multitude of different communities and building types. We've analyzed thousands of buildings, from as small as a 3,500-square foot day care center to a 2,600,000-square foot 98-story highrise. We also routinely inspect buildings with various types of mechanical systems such as simple electric heat, to complex systems with air handlers, chillers, boilers, elevators, and life safety and security systems.

We're familiar with all types of building exteriors as well. Our well-versed staff regularly identifies optimal repair and replacement solutions for such building exterior surfaces such as adobe, brick, stone, concrete, stucco, EIFS, wood products, stained glass and aluminum siding, and window wall systems.

### OLD TO NEW

Reserve Advisors' experience includes ornate and vintage buildings as well as modern structures. Our specialists are no strangers to older buildings. We're accustomed to addressing the unique challenges posed by buildings that date to the 1800's. We recognize and consider the methods of construction employed into our analysis. We recommend appropriate replacement programs that apply cost effective technologies while maintaining a building's character and appeal.

**STEPHEN E. BRESKI, RS**  
**Director of Product Development**  
**Responsible Advisor**

**CURRENT CLIENT SERVICES**

Stephen E. Breski, a Senior Civil Engineer, is an Advisor for Reserve Advisors. Mr. Breski is responsible for the inspection and analysis of the condition of clients' properties, and recommending engineering solutions to prolong the lives of the components. He also forecasts capital expenditures for the repair and/or replacement of the property components and prepares technical reports on assignments. He is responsible for conducting Life Cycle Cost Analyses and Capital Replacement Forecast services and the preparation of Reserve Study Reports for condominiums, townhomes, planned unit developments and homeowner associations.



The following is a partial list of clients served by Stephen Breski demonstrating the breadth of experiential knowledge of community associations in construction and related systems.

**30 Park Place** - Located in downtown Manhattan in New York City, this 82-story luxury tower offers 157 private residences and 189 hotel guest suites. The building was designed by renowned architect Robert A.M. Stern and is operated by the Four Seasons staff. On the 37<sup>th</sup> floor the residences enjoy their private amenity area complete with a fitness center and film screening room. The hotel includes a spa and indoor swimming pool.

**Merion Golf Club** - Located in the suburbs of Philadelphia, PA, this club was founded in 1865 as the Merion Cricket Club. Later, the Merion Cricket Club founded the Merion Golf Club in 1896 and has been an iconic golf club since. Merion Golf Club's East Course is consistently ranked as one of the top golf courses and has hosted five U.S. Opens featuring champions Ben Hogan (1950), Lee Trevino and his playoff victory over Jack Nicklaus (1971) and, most recently, Justin Rose (2013).

**Saint Sophia Greek Orthodox Cathedral** - Located in Northwest Washington, D.C., the cornerstone of this cathedral was laid by President Dwight D. Eisenhower in 1956. A second building was constructed in addition to the cathedral in 2004. This building, known as the Education and Activities Center, includes classrooms and a library.

**Big Bass Lake Community Association, Inc.** - Located in Gouldsboro, Pennsylvania, this community features three dams which provide the 1,655 single family homes with over 850,000 square yards of surface area for boating and recreation. Residents enjoy a clubhouse, a recreational center, a ski hill, docks, recreational courts, beaches and playgrounds. The Association also maintains an administration building, maintenance shop, sales office and library.

**Woodmont Country Club** - This exclusive club was established more than 100 years ago. The elegant design of Woodmont's Clubhouse, incorporates several dining venues, a grand ballroom and an expansive fitness and wellness center. The clubhouse overlooks Woodmont's two premiere golf courses, swimming complex and 22 *Har-Tru* tennis courts.

**PRIOR RELEVANT EXPERIENCE**

Before joining Reserve Advisors, Mr. Breski worked for a private construction management company in Pittsburgh, Pennsylvania, where he was working as a cost estimator. Prior to working as an estimator, Mr. Breski also worked for the nation's largest provider of wireless infrastructure, where he assisted in the structural analysis of cell phone towers. Mr. Breski attended the Swanson School of Engineering at the University of Pittsburgh where he attained his Bachelor of Science degree in Civil and Environmental Engineering. His studies focused on structural engineering.

**EDUCATION**

University of Pittsburgh - B.S. Civil and Environmental Engineering

**PROFESSIONAL AFFILIATIONS**

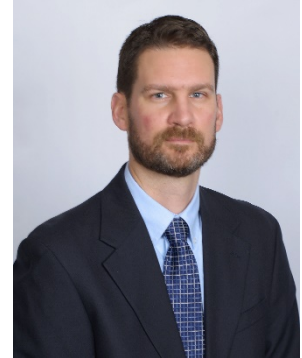
*Reserve Specialist (RS) – Community Association Institute*  
*Engineer in Training (E.I.T.) – State of Maryland*

**ALAN M. EBERT, P.E., PRA, RS**  
**Director of Quality Assurance**

**CURRENT CLIENT SERVICES**

Alan M. Ebert, a Professional Engineer, is the Director of Quality Assurance for Reserve Advisors. Mr. Ebert is responsible for the management, review and quality assurance of reserve studies. In this role, he assumes the responsibility of stringent report review analysis to assure report accuracy and the best solution for Reserve Advisors' clients.

Mr. Ebert has been involved with thousands of Reserve Study assignments. The following is a partial list of clients served by Alan Ebert demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.



**Brownsville Winter Haven** Located in Brownsville, Texas, this unique homeowners association contains 525 units. The Association maintains three pools and pool houses, a community and management office, landscape and maintenance equipment, and nine irrigation canals with associated infrastructure.

**Rosemont Condominiums** This unique condominium is located in Alexandria, Virginia and dates to the 1940's. The two mid-rise buildings utilize decorative stone and brick masonry. The development features common interior spaces, multi-level wood balconies and common asphalt parking areas.

**Stillwater Homeowners Association** Located in Naperville, Illinois, Stillwater Homeowners Association maintains four tennis courts, an Olympic sized pool and an upscale ballroom with commercial-grade kitchen. The community also maintains three storm water retention ponds and a detention basin.

**Birchfield Community Services Association** This extensive Association comprises seven separate parcels which include 505 townhome and single family homes. This Community Services Association is located in Mt. Laurel, New Jersey. Three lakes, a pool, a clubhouse and management office, wood carports, aluminum siding, and asphalt shingle roofs are a few of the elements maintained by the Association.

**Oakridge Manor Condominium Association** Located in Londonderry, New Hampshire, this Association includes 104 units at 13 buildings. In addition to extensive roads and parking areas, the Association maintains a large septic system and significant concrete retaining walls.

**Memorial Lofts Homeowners Association** This upscale high rise is located in Houston, Texas. The 20 luxury units include large balconies and decorative interior hallways. The 10-story building utilizes a painted stucco facade and TPO roof, while an on-grade garage serves residents and guests.

**PRIOR RELEVANT EXPERIENCE**

Mr. Ebert earned his Bachelor of Science degree in Geological Engineering from the University of Wisconsin-Madison. His relevant course work includes foundations, retaining walls, and slope stability. Before joining Reserve Advisors, Mr. Ebert was an oilfield engineer and tested and evaluated hundreds of oil and gas wells throughout North America.

**EDUCATION**

University of Wisconsin-Madison - B.S. Geological Engineering

**PROFESSIONAL AFFILIATIONS/DESIGNATIONS**

*Professional Engineering License* – Wisconsin, North Carolina, Illinois, Colorado

*Reserve Specialist (RS)* - Community Associations Institute

*Professional Reserve Analyst (PRA)* - Association of Professional Reserve Analysts



## RESOURCES

Reserve Advisors utilizes numerous resources of national and local data to conduct its Professional Services. A concise list of several of these resources follows:

**Association of Construction Inspectors**, (ACI) the largest professional organization for those involved in construction inspection and construction project management. ACI is also the leading association providing standards, guidelines, regulations, education, training, and professional recognition in a field that has quickly become important procedure for both residential and commercial construction, found on the web at [www.iami.org](http://www.iami.org).

**American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc.**, (ASHRAE) the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., devoted to the arts and sciences of heating, ventilation, air conditioning and refrigeration; recognized as the foremost, authoritative, timely and responsive source of technical and educational information, standards and guidelines, found on the web at [www.ashrae.org](http://www.ashrae.org). Reserve Advisors actively participates in its local chapter and holds individual memberships.

**Community Associations Institute**, (CAI) America's leading advocate for responsible communities noted as the only national organization dedicated to fostering vibrant, responsive, competent community associations. Their mission is to assist community associations in promoting harmony, community, and responsible leadership.

**Marshall & Swift / Boeckh**, (MS/B) the worldwide provider of building cost data, co-sourcing solutions, and estimating technology for the property and casualty insurance industry found on the web at [www.marshallswift.com](http://www.marshallswift.com).

**R.S. Means CostWorks**, North America's leading supplier of construction cost information. As a member of the Construction Market Data Group, Means provides accurate and up-to-date cost information that helps owners, developers, architects, engineers, contractors and others to carefully and precisely project and control the cost of both new building construction and renovation projects found on the web at [www.rsmeans.com](http://www.rsmeans.com).

Reserve Advisors' library of numerous periodicals relating to reserve studies, condition analyses, chapter community associations, and historical costs from thousands of capital repair and replacement projects, and product literature from manufacturers of building products and building systems.



## 7. DEFINITIONS

Definitions are derived from the standards set forth by the Community Associations Institute (CAI) representing America's 305,000 condominium and homeowners associations and cooperatives, and the Association of Professional Reserve Analysts, setting the standards of care for reserve study practitioners.

**Cash Flow Method** - A method of calculating Reserve Contributions where contributions to the reserve fund are designed to offset the variable annual expenditures from the reserve fund. Different Reserve Funding Plans are tested against the anticipated schedule of reserve expenses until the desired funding goal is achieved.

**Component Method** - A method of developing a Reserve Funding Plan with the total contribution is based on the sum of the contributions for individual components.

**Current Cost of Replacement** - That amount required today derived from the quantity of a *Reserve Component* and its unit cost to replace or repair a Reserve Component using the most current technology and construction materials, duplicating the productive utility of the existing property at current *local* market prices for *materials, labor* and manufactured equipment, contractors' overhead, profit and fees, but without provisions for building permits, overtime, bonuses for labor or premiums for material and equipment. We include removal and disposal costs where applicable.

**Fully Funded Balance** - The Reserve balance that is in direct proportion to the fraction of life "used up" of the current Repair or Replacement cost similar to Total Accrued Depreciation.

**Funding Goal (Threshold)** - The stated purpose of this Reserve Study is to determine the adequate, not excessive, minimal threshold reserve balances.

**Future Cost of Replacement** - *Reserve Expenditure* derived from the inflated current cost of replacement or current cost of replacement as defined above, with consideration given to the effects of inflation on local market rates for materials, labor and equipment.

**Long-Lived Property Component** - Property component of Mutual 19B responsibility not likely to require capital repair or replacement during the next 30 years with an unpredictable remaining Useful Life beyond the next 30 years.

**Percent Funded** - The ratio, at a particular point of time (typically the beginning of the Fiscal Year), of the actual (or projected) Reserve Balance to the Fully Funded Balance, expressed as a percentage.

**Remaining Useful Life** - The estimated remaining functional or useful time in years of a *Reserve Component* based on its age, condition and maintenance.

**Reserve Component** - Property elements with: 1) Mutual 19B responsibility; 2) limited Useful Life expectancies; 3) predictable Remaining Useful Life expectancies; and 4) a replacement cost above a minimum threshold.

**Reserve Component Inventory** - Line Items in *Reserve Expenditures* that identify a *Reserve Component*.

**Reserve Contribution** - An amount of money set aside or *Reserve Assessment* contributed to a *Reserve Fund* for future *Reserve Expenditures* to repair or replace *Reserve Components*.

**Reserve Expenditure** - Future Cost of Replacement of a Reserve Component.

**Reserve Fund Status** - The accumulated amount of reserves in dollars at a given point in time, i.e., at year end.

**Reserve Funding Plan** - The portion of the Reserve Study identifying the *Cash Flow Analysis* and containing the recommended Reserve Contributions and projected annual expenditures, interest earned and reserve balances.

**Reserve Study** - A budget planning tool that identifies the current status of the reserve fund and a stable and equitable Funding Plan to offset the anticipated future major common area expenditures.

**Useful Life** - The anticipated total time in years that a *Reserve Component* is expected to serve its intended function in its present application or installation.



## 8. PROFESSIONAL SERVICE CONDITIONS

**Our Services** - Reserve Advisors, LLC (RA) performs its services as an independent contractor in accordance with our professional practice standards and its compensation is not contingent upon our conclusions. The purpose of our reserve study is to provide a budget planning tool that identifies the current status of the reserve fund, and an opinion recommending an annual funding plan to create reserves for anticipated future replacement expenditures of the property.

Our inspection and analysis of the subject property is limited to visual observations, is noninvasive and is not meant to nor does it include investigation into statutory, regulatory or code compliance. RA inspects sloped roofs from the ground and inspects flat roofs where safe access (stairs or ladder permanently attached to the structure) is available. The report is based upon a "snapshot in time" at the moment of inspection. RA may note visible physical defects in our report. The inspection is made by employees generally familiar with real estate and building construction but in the absence of invasive testing RA cannot opine on, nor is RA responsible for, the structural integrity of the property including its conformity to specific governmental code requirements for fire, building, earthquake, and occupancy, or any physical defects that were not readily apparent during the inspection.

RA is not responsible for conditions that have changed between the time of inspection and the issuance of the report. RA does not investigate, nor assume any responsibility for any existence or impact of any hazardous materials, such as asbestos, urea-formaldehyde foam insulation, other chemicals, toxic wastes, environmental mold or other potentially hazardous materials or structural defects that are latent or hidden defects which may or may not be present on or within the property. RA does not make any soil analysis or geological study as part of its services; nor does RA investigate water, oil, gas, coal, or other subsurface mineral and use rights or such hidden conditions. RA assumes no responsibility for any such conditions. The Report contains opinions of estimated costs and remaining useful lives which are neither a guarantee of the actual costs of replacement nor a guarantee of remaining useful lives of any property element.

RA assumes, without independent verification, the accuracy of all data provided to it. You agree to indemnify and hold RA harmless against and from any and all losses, claims, actions, damages, expenses or liabilities, including reasonable attorneys' fees, to which we may become subject in connection with this engagement, because of any false, misleading or incomplete information which we have relied upon supplied by you or others under your direction, or which may result from any improper use or reliance on the Report by you or third parties under your control or direction. Your obligation for indemnification and reimbursement shall extend to any director, officer, employee, affiliate, or agent of RA. Liability of RA and its employees, affiliates, and agents for errors and omissions, if any, in this work is limited to the amount of its compensation for the work performed in this engagement.

**Report** - RA completes the services in accordance with the Proposal. The Report represents a valid opinion of RA's findings and recommendations and is deemed complete. RA, however, considers any additional information made available to us within 6 months of issuing the Report if a timely request for a revised Report is made. RA retains the right to withhold a revised Report if payment for services was not tendered in a timely manner. All information received by RA and all files, work papers or documents developed by RA during the course of the engagement shall remain the property of RA and may be used for whatever purpose it sees fit.

**Your Obligations** - You agree to provide us access to the subject property for an on-site visual inspection. You agree to provide RA all available, historical and budgetary information, the governing documents, and other information that we request and deem necessary to complete the Report. You agree to pay actual attorneys' fees and any other costs incurred to collect on any unpaid balance for RA's services.

**Use of Our Report and Your Name** - Use of this Report is limited to only the purpose stated herein. You hereby acknowledge that any use or reliance by you on the Report for any unauthorized purpose is at your own risk and you shall hold RA harmless from any consequences of such use. Use by any unauthorized third party is unlawful. The Report in whole or in part **is not and cannot be used as a design specification for design engineering purposes or as an appraisal.** You may show our Report in its entirety to the following third parties: members of your organization, your accountant, attorney, financial institution and property manager who need to review the information contained herein. Without the written consent of RA, you shall not disclose the Report to any other third party. The Report contains intellectual property developed by RA and **shall not be reproduced or distributed to any party that conducts reserve studies without the written consent of RA.**

RA will include your name in our client lists. RA reserves the right to use property information to obtain estimates of replacement costs, useful life of property elements or otherwise as RA, in its sole discretion, deems appropriate.

**Payment Terms, Due Dates and Interest Charges** - Retainer payment is due upon authorization and prior to inspection. The balance is due net 30 days from the report shipment date. Any balance remaining 30 days after delivery of the Report shall accrue an interest charge of 1.5% per month. Any litigation necessary to collect an unpaid balance shall be venued in Milwaukee County Circuit Court for the State of Wisconsin.