

# Orchard Knolls Homeowners Association

March 13, 2025 • North Potomac, MD

RESERVE STUDY



Orchard Knolls Homeowners Association  
North Potomac, Maryland

Dear Board of Directors of Orchard Knolls Homeowners Association:

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Reserve Study* of Orchard Knolls Homeowners Association in North Potomac, Maryland and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, March 13, 2025.

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 Orchard Knolls Homeowners Association 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 March 31, 2025 by

*Reserve Advisors, LLC*

Visual Inspection and Report by: Zachary T. Fortune

Review by: Nicholas R. Julia, RS<sup>1</sup>

Alan M. Ebert, RS, PRA<sup>2</sup>, Director of Quality Assurance



1 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.

2 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>.



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# 1. RESERVE STUDY EXECUTIVE SUMMARY

**Client:** Orchard Knolls Homeowners Association (Orchard Knolls)

**Location:** North Potomac, Maryland

**Reference:** 192232

**Property Basics:** Orchard Knolls Homeowners Association is responsible for the common elements shared by 83 single family homes and 67 townhouse units. The community was built from 1989 to 1993.

**Reserve Components Identified:** Orchard Knolls uses multiple cost centers. We identify the following number of Reserve Components per cost center

- **General Expenditures:** 15 Reserve Components
- **Townhouse Expenditures:** 11 Reserve Components

**Inspection Date:** March 13, 2025. We conducted the original inspection on September 30, 2020.

**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.

- **General:** Our recommended Cash Flow Funding Plan recognizes these threshold funding years in 2034 due to the replacement of the timber retaining walls and in 2055 due to the replacement of the wood split rail fences.
- **Townhouse:** Our recommended Cash Flow Funding Plan recognizes these threshold funding years in 2032 due to the replacement of the timber retaining walls, in 2044 due to the repaving of the asphalt pavement streets and parking areas, and in 2055 due to the replacement of the light poles and fixtures.

## **Methodology:**

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
- 2.7% anticipated annual rate of return on invested reserves
- 3.0% future Inflation Rate for estimating Future Replacement Costs

**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:

- **General Priority Projects:**
  - Repairs to the asphalt pavement walking paths
  - Creek erosion remediation
  - Replacement of the smaller set of playground equipment west of the creek at the park area
- **Townhouse Priority Projects:**
  - Repairs to the asphalt pavement streets and parking areas
  - Replacement of the timber retaining walls excluding the wall near the gazebo



**General Cost Center**

**Unaudited Cash Status of Reserve Fund:**

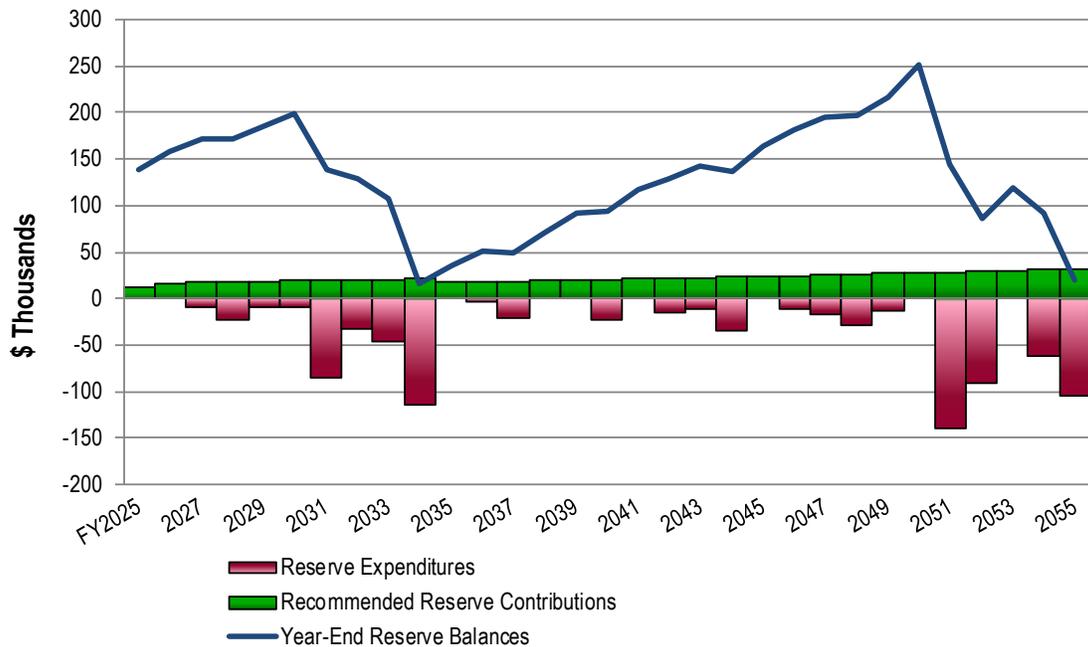
- \$122,434 as of January 1, 2025
- 2025 budgeted Reserve Contributions of \$12,000

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

- Increase Reserve Contributions to \$17,000 in 2026
- Inflationary increases from 2027 through 2034
- Decrease to \$17,800 by 2035 due to fully funding for replacement of the timber retaining walls
- Inflationary increases thereafter through 2055, the limit of this study's Cash Flow Analysis
- Initial adjustment of \$5,000 is equivalent to an increase of \$8.33 in the quarterly contributions per owner.

**Recommended Reserve Funding Table and Graph**

Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)
2026	17,000	158,855	2036	18,300	50,734	2046	24,600	180,992
2027	17,500	171,526	2037	18,800	49,483	2047	25,300	194,624
2028	18,000	171,304	2038	19,400	70,481	2048	26,100	197,218
2029	18,500	184,755	2039	20,000	92,654	2049	26,900	216,826
2030	19,100	199,055	2040	20,600	93,209	2050	27,700	250,754
2031	19,700	138,558	2041	21,200	117,212	2051	28,500	145,147
2032	20,300	129,100	2042	21,800	127,897	2052	29,400	86,572
2033	20,900	107,342	2043	22,500	143,284	2053	30,300	119,618
2034	21,500	16,349	2044	23,200	135,637	2054	31,200	92,371
2035	17,800	34,831	2045	23,900	163,522	2055	32,100	20,609





### Townhouse Cost Center

**Unaudited Cash Status of Reserve Fund:**

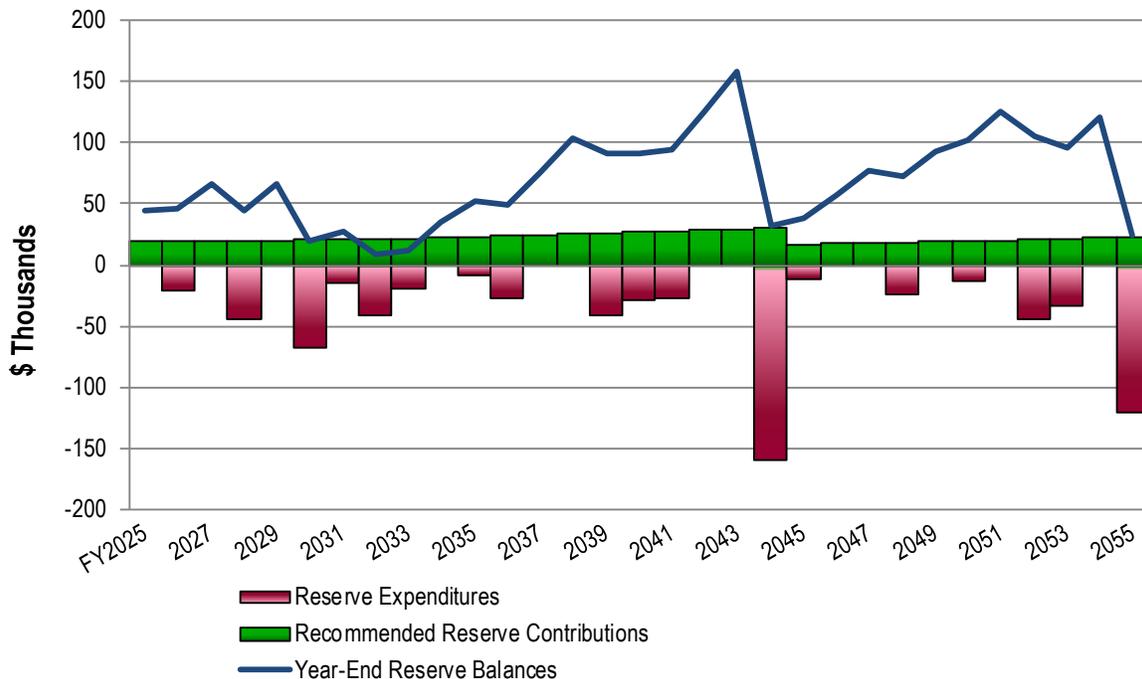
- \$24,215 as of January 1, 2025
- 2025 budgeted Reserve Contributions of \$20,000

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

- Stable contributions of \$20,000 from 2026 through 2029
- Inflationary increases from 2027 through 2029
- Stable contributions of \$21,800 in 2033
- Inflationary increases from 2030 through 2032
- Decrease to \$16,900 by 2045 due to fully funding for repaving of the asphalt pavement streets and parking areas
- Inflationary increases thereafter through 2055, the limit of this study's Cash Flow Analysis

**Recommended Reserve Funding Table and Graph**

Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)
2026	20,000	45,269	2036	23,900	49,058	2046	17,400	56,688
2027	20,000	66,761	2037	24,600	75,315	2047	17,900	76,360
2028	20,000	43,980	2038	25,300	102,990	2048	18,400	71,987
2029	20,000	65,437	2039	26,100	90,417	2049	19,000	93,187
2030	20,600	19,890	2040	26,900	90,484	2050	19,600	102,348
2031	21,200	27,391	2041	27,700	93,775	2051	20,200	125,584
2032	21,800	9,092	2042	28,500	125,192	2052	20,800	104,940
2033	21,800	12,430	2043	29,400	158,369	2053	21,400	95,144
2034	22,500	35,569	2044	30,300	31,453	2054	22,000	120,010
2035	23,200	51,558	2045	16,900	38,026	2055	22,700	24,288





## 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

### Orchard Knolls Homeowners Association

### North Potomac, Maryland

and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, March 13, 2025. We conducted the original inspection on September 30, 2020.

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 or which were identified as part of your request for proposed services. 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 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 Owners
- Property Maintained by Others

We advise the Board to 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. Reserve Components are defined by CAI as property elements with:

- Orchard Knolls responsibility
- Limited useful life expectancies
- Predictable remaining useful life expectancies
- Replacement cost above a minimum threshold

The following tables depict the items excluded from the Reserve Expenditure plan:

## Excluded Components

for  
**Orchard Knolls**  
**Homeowners Association**  
North Potomac, Maryland

<b>Operating Budget Components</b>
<p>Repairs normally funded through the Operating Budget and Expenditures less than \$2,500 (These relatively minor expenditures have a limited effect on the recommended Reserve Contributions.)</p> <p>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.</p>
<ul style="list-style-type: none"> <li>• Bridges and Steps, Interim Repairs, General</li> <li>• Catch Basins, Landscape, Townhouses</li> <li>• Fences, Chain Link, Atop Creek Concrete Culverts, Single Family Homes</li> <li>• Irrigation System, Controls and Maintenance, Single Family Homes</li> <li>• Landscape, Maintenance</li> <li>• Mailbox Station Kiosk, Wood, Townhouses</li> <li>• Paint Finishes, Touch Up</li> <li>• Pavers, Walkway to Gazebo, Resetting and Partial Replacements, Townhouses</li> <li>• Pipes, Subsurface Utilities, Townhouses</li> <li>• Playground Equipment, Interim Repairs and Mulch Replenishments, Single Family Homes</li> <li>• Signage, Interim Replacements, Townhouses</li> </ul>

<b>Long-Lived Components</b>		
<p>These elements may not have predictable Remaining Useful Lives or their replacement may occur beyond the scope of this 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.</p>	<b>Useful Life</b>	<b>Estimated Cost</b>
<ul style="list-style-type: none"> <li>• Benches, Stone<sup>1</sup></li> <li>• Electrical Systems, Common</li> <li>• Stormwater Management, Concrete Inlet/Outlet Structures</li> </ul>	<ul style="list-style-type: none"> <li>Indeterminate</li> <li>Indeterminate</li> <li>Indeterminate</li> </ul>	<ul style="list-style-type: none"> <li>N/A</li> <li>N/A</li> <li>N/A</li> </ul>
<p><sup>1</sup> Installed in 2000</p>		

<b>Owners Responsibility Components</b>
<p>Certain items have been designated as the responsibility of the Owners to repair or replace at their cost, including items billed back.</p>
<ul style="list-style-type: none"> <li>• Homes and Lots (Incl. Concrete Entrance Walks and Wood Privacy Fences at the Townhouses)</li> </ul>

## **Excluded Components**

for  
**Orchard Knolls**  
**Homeowners Association**  
North Potomac, Maryland

### **Montgomery County Responsibility Components**

Certain items have been designated as the responsibility of Montgomery County to repair or replace.

- Asphalt Pavement Street System, Single Family Homes
- Concrete Sidewalk, Single Family Homes
- Light Poles and Fixtures, Single Family Homes

### 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
- 2025 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**.



General

**RESERVE EXPENDITURES**

**Orchard Knolls  
Homeowners Association**  
North Potomac, 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 2041	17 2042	18 2043	19 2044	20 2045	21 2046	22 2047	23 2048	24 2049	25 2050	26 2051	27 2052	28 2053	29 2054	30 2055	
						Useful	Remaining	Unit (2025)	Per Phase (2025)	Total (2025)																	
4.020	730	730	Square Yards	Asphalt Pavement, Crack Repair and Patch, Walking Paths	2028	3 to 5	3	3.50	2,555	2,555	2.7%							5,043				5,675					
4.080	730	730	Square Yards	Asphalt Pavement, Total Replacement, Walking Paths	2044	15 to 20	19	27.00	19,710	19,710	3.8%				34,562												
4.122	330	330	Square Feet	Bridges and Steps, Composite Deck Boards and Wood Frames	2032	20 to 25	7	48.00	15,840	15,840	6.0%														35,185		
4.260	1,030	1,030	Linear Feet	Fences, Vinyl, Open Rail	2031	15 to 20	6	21.00	21,630	21,630	8.0%														46,647		
4.286	1,020	1,020	Linear Feet	Fences, Wood, Split Rail	2033	to 25	8	28.00	28,560	28,560	11.7%															69,323	
4.420	3	3	Zones	Irrigation System	2029	to 40+	4	2,900.00	8,700	8,700	1.1%																
4.500	1	1	Allowance	Landscape, Creek Erosion Remediation	2027	3 to 5	2	8,700.00	8,700	8,700	9.2%		14,380					16,670						19,325			
4.502	1	1	Allowance	Landscape, Partial Tree Replacements	2028	to 3	3	6,300.00	6,300	6,300	11.7%			10,725		11,720			12,807					13,994		15,292	
4.560	3	3	Each	Light Poles and Fixtures, Park Area	2030	to 25	5	2,850.00	8,550	8,550	3.4%															20,753	
4.658	1	1	Allowance	Playground Equipment, Park Area, East of Creek	2031	15 to 20	6	43,000.00	43,000	43,000	15.9%														92,733		
4.659	1	1	Allowance	Playground Equipment, Park Area, West of Creek	2028	15 to 20	3	12,000.00	12,000	12,000	4.1%							23,683									
4.660	1	1	Allowance	Playground Equipment, Townhouse Section, Northeast Corner	2034	15 to 20	9	26,000.00	26,000	26,000	10.5%															61,271	
4.760	890	890	Square Feet	Retaining Walls, Timber (Replace with Masonry)	2034	15 to 20	9	62.00	55,180	55,180	8.0%																
4.782	1	1	Allowance	Shed, Renovation	2040	25 to 30	15	5,600.00	5,600	5,600	1.0%																
4.800	1	1	Allowance	Signage, Entrance Monument, Renovation	2033	15 to 20	8	7,600.00	7,600	7,600	2.9%														16,882		
<b>Anticipated Expenditures, By Year (\$903,801 over 30 years)</b>												0	14,380	10,725	34,562	0	11,720	16,670	28,726	12,807	0	139,380	91,062	0	61,271	105,367	

# RESERVE FUNDING PLAN

## General

### CASH FLOW ANALYSIS

#### Orchard Knolls

#### Homeowners Association

#### North Potomac, Maryland

#### Individual Reserve Budgets & Cash Flows for the Next 30 Years

		FY2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Reserves at Beginning of Year	(Note 1)	122,434	137,902	158,855	171,526	171,304	184,755	199,055	138,558	129,100	107,342	16,349	34,831	50,734	49,483	70,481	92,654
Total Recommended Reserve Contributions	(Note 2)	12,000	17,000	17,500	18,000	18,500	19,100	19,700	20,300	20,900	21,500	17,800	18,300	18,800	19,400	20,000	20,600
Estimated Interest Earned, During Year	(Note 3)	3,468	3,953	4,401	4,567	4,743	5,112	4,497	3,565	3,149	1,648	682	1,140	1,335	1,598	2,173	2,476
Anticipated Expenditures, By Year		0	0	(9,230)	(22,789)	(9,792)	(9,912)	(84,694)	(33,323)	(45,806)	(114,142)	0	(3,537)	(21,386)	0	0	(22,520)
Anticipated Reserves at Year End		<u>\$137,902</u>	<u>\$158,855</u>	<u>\$171,526</u>	<u>\$171,304</u>	<u>\$184,755</u>	<u>\$199,055</u>	<u>\$138,558</u>	<u>\$129,100</u>	<u>\$107,342</u>	<u>\$16,349</u>	<u>\$34,831</u>	<u>\$50,734</u>	<u>\$49,483</u>	<u>\$70,481</u>	<u>\$92,654</u>	<u>\$93,209</u>
Predicted Reserves based on 2025 funding level of: \$12,000		137,902	153,787	160,747	154,153	160,553	167,004	97,838	78,869	46,735	(55,523)	(44,860)					

(NOTE 5)

(continued)

#### Individual Reserve Budgets & Cash Flows for the Next 30 Years, Continued

		2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
Reserves at Beginning of Year		93,209	117,212	127,897	143,284	135,637	163,522	180,992	194,624	197,218	216,826	250,754	145,147	86,572	119,618	92,371
Total Recommended Reserve Contributions		21,200	21,800	22,500	23,200	23,900	24,600	25,300	26,100	26,900	27,700	28,500	29,400	30,300	31,200	32,100
Estimated Interest Earned, During Year		2,803	3,265	3,612	3,715	3,985	4,589	5,003	5,219	5,515	6,228	5,273	3,087	2,746	2,824	1,505
Anticipated Expenditures, By Year		0	(14,380)	(10,725)	(34,562)	0	(11,720)	(16,670)	(28,726)	(12,807)	0	(139,380)	(91,062)	0	(61,271)	(105,367)
Anticipated Reserves at Year End		<u>\$117,212</u>	<u>\$127,897</u>	<u>\$143,284</u>	<u>\$135,637</u>	<u>\$163,522</u>	<u>\$180,992</u>	<u>\$194,624</u>	<u>\$197,218</u>	<u>\$216,826</u>	<u>\$250,754</u>	<u>\$145,147</u>	<u>\$86,572</u>	<u>\$119,618</u>	<u>\$92,371</u>	<u>\$20,609</u>

(NOTES 4&5)

#### Explanatory Notes:

- 1) Year 2025 starting reserves are as of January 1, 2025; FY2025 starts January 1, 2024 and ends December 31, 2024.
- 2) Reserve Contributions for 2025 are budgeted; 2026 is the first year of recommended contributions.
- 3) 2.7% is the estimated annual rate of return on invested reserves.
- 4) Accumulated year 2055 ending reserves consider the age, size, overall condition and complexity of the property.
- 5) Threshold Funding Years (reserve balance at critical point).

**General**  
**FIVE-YEAR OUTLOOK**

**Orchard Knolls**  
**Homeowners Association**  
North Potomac, Maryland

Line Item	Reserve Component Inventory	RUL = 0 FY2025	1 2026	2 2027	3 2028	4 2029	5 2030
4.020	Asphalt Pavement, Crack Repair and Patch, Walking Paths				2,792		
4.420	Irrigation System					9,792	
4.500	Landscape, Creek Erosion Remediation			9,230			
4.502	Landscape, Partial Tree Replacements				6,884		
4.560	Light Poles and Fixtures, Park Area						9,912
4.659	Playground Equipment, Park Area, West of Creek				13,113		
<b>Anticipated Expenditures, By Year (\$51,722 over 5 years)</b>		0	0	9,230	22,789	9,792	9,912

**Townhouse**  
**RESERVE EXPENDITURES**

**Orchard Knolls**  
**Homeowners Association**  
North Potomac, Maryland

**Explanatory Notes:**

- 1) **3.0%** is the estimated Inflation Rate for estimating Future Replacement Costs.
- 2) FY2025 is Fiscal Year beginning January 1, 2024 and ending December 31, 2024.

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 FY2025	1 2026	2 2027	3 2028	4 2029	5 2030	6 2031	7 2032	8 2033	9 2034	10 2035	11 2036	12 2037	13 2038	14 2039	15 2040
						Useful	Remaining	Unit (2025)	Per Phase (2025)	Total (2025)																	
4.021	4,180	4,180	Square Yards	Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping	2028	3 to 5	3	3.00	12,540	12,540	15.9%				13,703			15,423				17,358				19,537	
4.040	4,180	4,180	Square Yards	Asphalt Pavement, Mill and Overlay, Streets and Parking Areas	2044	15 to 20	19	20.00	83,600	83,600	19.6%																
4.110	3,200	200	Linear Feet	Concrete Curbs and Gutters, Partial	2028	to 65	3 to 30+	37.50	7,500	120,000	6.5%			8,195								10,382					
4.140	8,900	519	Square Feet	Concrete Sidewalks, Partial	2030	to 65	5 to 30+	12.00	6,230	106,800	8.7%					7,222						8,373				9,706	
4.360	1	1	Allowance	Gazebo	2039	20 to 25	14	21,000.00	21,000	21,000	4.3%														31,764		
4.561	11	11	Each	Light Poles and Fixtures	2030	to 25	5	2,850.00	31,350	31,350	15.0%						36,343										
4.600	6	6	Each	Mailbox Stations, Gazebo Area	2031	to 25	6	2,000.00	12,000	12,000	5.8%							14,329									
4.620	285	285	Square Feet	Pavers, Bluestone and Brick Masonry, Gazebo Area	2039	15 to 25	14	22.00	6,270	6,270	1.3%														9,484		
4.761	270	270	Square Feet	Retaining Wall, Timber, Near Gazebo Area (Replace with Masonry)	2041	15 to 20	16	62.00	16,740	16,740	3.6%																
4.762	1,320	330	Square Feet	Retaining Walls, Timber, Remaining Walls, Phased (Replace with Masonry)	2026	15 to 20	1 to 7	62.00	20,460	81,840	12.4%	21,074		22,357		23,719		25,163									
4.810	1	1	Allowance	Signage, Traffic Management	2033	15 to 20	8	14,800.00	14,800	14,800	7.0%								18,748								
<b>Anticipated Expenditures, By Year (\$747,253 over 30 years)</b>												0	21,074	0	44,255	0	67,284	14,329	40,586	18,748	0	8,373	27,740	0	0	41,248	29,243

Townhouse  
**RESERVE EXPENDITURES**

**Orchard Knolls  
Homeowners Association**  
North Potomac, 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	Years 2041 to 2055													
						Useful	Remaining	Unit (2025)	Per Phase (2025)	Total (2025)		16 2041	17 2042	18 2043	19 2044	20 2045	21 2046	22 2047	23 2048	24 2049	25 2050	26 2051	27 2052	28 2053	29 2054
4.021	4,180	4,180	Square Yards	Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping	2028	3 to 5	3	3.00	12,540	12,540	15.9%						24,749						27,855		
4.040	4,180	4,180	Square Yards	Asphalt Pavement, Mill and Overlay, Streets and Parking Areas	2044	15 to 20	19	20.00	83,600	83,600	19.6%				146,593										
4.110	3,200	200	Linear Feet	Concrete Curbs and Gutters, Partial	2028	to 65	3 to 30+	37.50	7,500	120,000	6.5%				13,151								16,660		
4.140	8,900	519	Square Feet	Concrete Sidewalks, Partial	2030	to 65	5 to 30+	12.00	6,230	106,800	8.7%				11,252								13,044		15,122
4.360	1	1	Allowance	Gazebo	2039	20 to 25	14	21,000.00	21,000	21,000	4.3%														
4.561	11	11	Each	Light Poles and Fixtures	2030	to 25	5	2,850.00	31,350	31,350	15.0%														76,095
4.600	6	6	Each	Mailbox Stations, Gazebo Area	2031	to 25	6	2,000.00	12,000	12,000	5.8%														29,127
4.620	285	285	Square Feet	Pavers, Bluestone and Brick Masonry, Gazebo Area	2039	15 to 25	14	22.00	6,270	6,270	1.3%														
4.761	270	270	Square Feet	Retaining Wall, Timber, Near Gazebo Area (Replace with Masonry)	2041	15 to 20	16	62.00	16,740	16,740	3.6%	26,863													
4.762	1,320	330	Square Feet	Retaining Walls, Timber, Remaining Walls, Phased (Replace with Masonry)	2026	15 to 20	1 to 7	62.00	20,460	81,840	12.4%														
4.810	1	1	Allowance	Signage, Traffic Management	2033	15 to 20	8	14,800.00	14,800	14,800	7.0%													33,861	
<b>Anticipated Expenditures, By Year (\$747,253 over 30 years)</b>											26,863	0	0	159,744	11,252	0	0	24,749	0	13,044	0	44,515	33,861	0	120,344

# RESERVE FUNDING PLAN

## Townhouse

### CASH FLOW ANALYSIS

#### Orchard Knolls

#### Homeowners Association

#### North Potomac, Maryland

Individual Reserve Budgets & Cash Flows for the Next 30 Years

		FY2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Reserves at Beginning of Year	(Note 1)	24,215	45,139	45,269	66,761	43,980	65,437	19,890	27,391	9,092	12,430	35,569	51,558	49,058	75,315	102,990	90,417
Total Recommended Reserve Contributions	(Note 2)	20,000	20,000	20,000	20,000	20,000	20,600	21,200	21,800	21,800	22,500	23,200	23,900	24,600	25,300	26,100	26,900
Estimated Interest Earned, During Year	(Note 3)	924	1,204	1,492	1,475	1,457	1,137	630	486	287	639	1,161	1,340	1,657	2,375	2,576	2,410
Anticipated Expenditures, By Year		0	(21,074)	0	(44,255)	0	(67,284)	(14,329)	(40,586)	(18,748)	0	(8,373)	(27,740)	0	0	(41,248)	(29,243)
Anticipated Reserves at Year End		\$45,139	\$45,269	\$66,761	\$43,980	\$65,437	\$19,890	\$27,391	\$9,092	\$12,430	\$35,569	\$51,558	\$49,058	\$75,315	\$102,990	\$90,417	\$90,484

(NOTE 5)

(continued)

Individual Reserve Budgets & Cash Flows for the Next 30 Years, Continued

		2041	2042	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	2054	2055
Reserves at Beginning of Year		90,484	93,775	125,192	158,369	31,453	38,026	56,688	76,360	71,987	93,187	102,348	125,584	104,940	95,144	120,010
Total Recommended Reserve Contributions		27,700	28,500	29,400	30,300	16,900	17,400	17,900	18,400	19,000	19,600	20,200	20,800	21,400	22,000	22,700
Estimated Interest Earned, During Year		2,454	2,917	3,777	2,528	925	1,262	1,772	1,976	2,200	2,605	3,036	3,071	2,665	2,866	1,922
Anticipated Expenditures, By Year		(26,863)	0	0	(159,744)	(11,252)	0	0	(24,749)	0	(13,044)	0	(44,515)	(33,861)	0	(120,344)
Anticipated Reserves at Year End		\$93,775	\$125,192	\$158,369	\$31,453	\$38,026	\$56,688	\$76,360	\$71,987	\$93,187	\$102,348	\$125,584	\$104,940	\$95,144	\$120,010	\$24,288

(NOTE 5)

(NOTES 4&5)

**Explanatory Notes:**

- 1) Year 2025 starting reserves are as of January 1, 2025; FY2025 starts January 1, 2024 and ends December 31, 2024.
- 2) Reserve Contributions for 2025 are budgeted; 2026 is the first year of recommended contributions.
- 3) 2.7% is the estimated annual rate of return on invested reserves.
- 4) Accumulated year 2055 ending reserves consider the age, size, overall condition and complexity of the property.
- 5) Threshold Funding Years (reserve balance at critical point).

Townhouse  
**FIVE-YEAR OUTLOOK**

**Orchard Knolls  
Homeowners Association**  
North Potomac, Maryland

Line Item	Reserve Component Inventory	RUL = 0 FY2025	1 2026	2 2027	3 2028	4 2029	5 2030
4.021	Asphalt Pavement, Crack Repair, Patch, Seal Coat and Striping				13,703		
4.110	Concrete Curbs and Gutters, Partial				8,195		
4.140	Concrete Sidewalks, Partial						7,222
4.561	Light Poles and Fixtures						36,343
4.762	Retaining Walls, Timber, Remaining Walls, Phased (Replace with Masonry)		21,074		22,357		23,719
<b>Anticipated Expenditures, By Year (\$132,614 over 5 years)</b>		0	21,074	0	44,255	0	67,284

## 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.*

### General Elements

#### Asphalt Pavement, Crack Repair and Patch, Walking Paths

---

**Line Item:** 4.020

**Quantity:** The Association maintains approximately 730 square yards of asphalt pavement walking paths throughout the community.

**History:** The asphalt pavement walking paths were repaved between 2022 and 2023

**Condition:** Good to fair overall condition with pavement cracks evident.

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

**Component Detail Notes:** Proposals should include mechanically routing and filling all cracks with hot emulsion. Crack repair minimizes the chance of the cracks transmitting through the pavement. Patch repairs are conducted at areas exhibiting settlement, potholes, or excessive cracking. These conditions typically occur near high traffic areas, catch basins, and pavement edges.

**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 five percent (5%) of the pavement.

#### Asphalt Pavement, Repaving, Walking Paths

---

**Line Item:** 4.080

**Quantity:** The Association maintains approximately 730 square yards of asphalt pavement walking paths throughout the community.

**History:** The asphalt pavement walking paths were repaved between 2022 and 2023

**Condition:** Good to fair overall condition with pavement cracks evident.



**Asphalt pavement walking path overview**



**Asphalt pavement walking path overview**



**Asphalt pavement walking path overview with pavement crack evident**



**Pavement cracks**

**Useful Life:** 15- to 20-years with the benefit of timely crack repairs and patching, and the need to maintain a safe pedestrian surface

**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.

## **Bridges and Steps, Composite Deck Boards and Wood Frames**

---

**Line Item:** 4.122

**Quantity:** The Association maintains two wood frame bridges with composite decking and wood railings at the walking paths and park area comprising approximately 330 square feet; this quantity also includes the composite steps located at the playground areas and Townhouses.

**History:** The composite decking was replaced approximately 20 years ago, and subsequent replacement history is unknown. The wood framing at the bridges and steps are unknown ages.

**Condition:** Good to fair overall condition



**Bridge overview**



**Bridge overview**



**Bridge overview**

**Useful Life:** 20- to 25-years with the benefit of interim maintenance funded through the operating budget.

**Component Detail Notes:** The composition of composite materials used in the construction of bridges typically includes a combination of wood waste material, plastic

and recycled materials. These composite materials are low maintenance and do not split, cup or splinter. Composite materials do not require periodic stain or sealer applications.

Composite bridge materials are not structural components and therefore require traditional framing members, such as wood or metal. In addition, some manufacturers require closer spacing of framing components to minimize sagging. In addition to the added cost of framing, composite bridge deck materials can cost up to twice as much as natural wood.

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

- Annually:
  - Inspect to identify and correct any unsafe conditions
  - Secure loose fasteners and replace deteriorated fasteners
  - Check railing stability and fasteners
  - Clean as necessary

**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.

## Fences, Vinyl, Open Rail

---

**Line Item:** 4.260

**Quantity:** Approximately 1,030 linear feet comprise the vinyl open rail fences at the community entrance and along Route 28.

**History:** Unknown ages

**Condition:** Good to fair overall condition with missing caps and damage evident.



**Vinyl fence overview**



**Vinyl fence overview**



**Missing cap**



**Cap damage**

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

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

- Annually:
  - Inspect and repair loose panels, and damage
  - Repair leaning sections and clear vegetation from fence areas which could cause damage
  - Periodically clean vinyl fence as needed

**Priority/Criticality:** Per Board discretion

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

## **Fences, Wood, Split Rail**

---

**Line Item:** 4.286

**Quantity:** Approximately 1,020 linear feet of wood split rail fencing throughout the community.

**History:** Unknown ages. The Association has replaced rails throughout the past as needed.

**Condition:** Good to fair overall with replaced rails evident.



**Wood split rail fence overview**



**Wood split rail fence overview**



**Replaced rails**



**Replaced rails**

**Useful Life:** Up to 25 years

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

- Annually:
  - Inspect and repair loose sections, and damage
  - Repair leaning sections and clear vegetation from fence areas which could cause damage

**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 anticipate periodic partial replacements funded through the operating budget due to the non-uniform nature of wood deterioration.

## **Irrigation System**

---

**Line Item:** 4.420

**Quantity:** Approximately three zones serve the median and landscaped areas at the community entrance.

**History:** Original

**Condition:** No deficiencies reported. The Association informs us the irrigation system has not been operated in some time but may begin utilizing it again in the near term.

**Useful Life:** Up to and sometimes beyond 40 years

**Component Detail Notes:** Irrigation systems typically include the following components:

- Electronic controls (timer)
- Impact rotors
- Network of supply pipes
- Pop-up heads
- Valves

Orchard Knolls should anticipate interim and partial replacements of the system network supply pipes and other components as normal maintenance to maximize the useful life of the irrigation system. The Association should fund these ongoing seasonal repairs through the operating budget.

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

- Semi-annually:
  - Conduct seasonal repairs which include valve repairs, controller repairs, partial head replacements and pipe repairs
  - Blow out irrigation water lines and drain building exterior faucets each fall if applicable

**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.

## Landscape

---

**Line Items:** 4.500 and 4.502

**Component Detail Notes:** The Association contains a large quantity of trees, shrubbery and other landscape elements. Replacement of these elements is an ongoing need. Many associations budget for these replacements as normal maintenance. Other associations fund ongoing replacements from reserves. Large amounts of landscape may need replacement due to disease, drought or other forces of nature. If the cost of removal and replacement is substantial, funding from reserves is logical. The Association may also desire to periodically update the appearance of the community through major improvements to the landscape.

Additionally, the Association is responsible for erosion control remediation at areas of the creek that impact the common elements such as the walking paths, bridges, and playground areas. We note areas of erosion throughout the stream.



**Creek erosion**



**Creek erosion**

**Useful Life:** At the request of the Board, we include a landscape allowance for partial tree replacements every three years. We recommend budgeting for creek erosion remediation every three-to five-years.

**Priority/Criticality:** Per Board discretion

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

## Light Poles and Fixtures

---

**Line Item:** 4.560

**Quantity:** The General Reserves are responsible for three light poles and fixtures located at the park area.

**History:** Unknown ages

**Condition:** Good to fair overall condition



**Light pole and fixture at park area**



**Light pole and fixture at park area**

**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.

## **Playground Equipment**

---

**Line Items:** 4.658 - 4.660

**Quantity:** The Association maintains three sets of playground equipment at the community. One playground is located at the northeast corner of the Townhouses, and two are located at the park area on opposite sides of the creek.

**History:** The playground equipment at the northeast corner of the townhouses and the set of playground equipment at the park area east of the creek were replaced approximately 15 years ago. The smaller set of playground equipment at the park area on the west side of the creek is likely original.

**Condition:** The playground at the park area on the west side of the creek is in fair overall condition and the larger playgrounds located at the park area on the east side of the creek and at the northeast corner of the townhouses are in good to fair overall condition with rust and finish deterioration evident.



**Playground equipment at the park area on the west side of the creek**



**Playground equipment at the park area on the east side of the creek**



**Playground equipment at the northeast corner of the townhouses**



**Playground equipment rust and finish deterioration**



**Playground equipment rust**



**Finish deterioration**



**Playground equipment rust**



**Finish deterioration**



**Fastener rust**



**Finish deterioration**

**Useful Life:** 15- to 20-years with the benefit of interim repairs and partial replacements funded through the operating budget.

**Component Detail Notes:** Safety is the major purpose for maintaining playground equipment. We recommend an annual inspection of the playground equipment to identify and repair as normal maintenance loose connections and fasteners or damaged elements. We suggest the Association learn more about the specific requirements of playground equipment at [PlaygroundSafety.org](http://PlaygroundSafety.org). We recommend the use of a specialist for the design or replacement of the playground equipment environment.

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

- Annually:
  - Inspect and repair loose connections and fasteners or damaged elements
  - Inspect for safety hazards and adequate coverage of ground surface cover

**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 include an allowance in the unit cost for replacement of the safety surface and border.

## Retaining Walls, Timber

---

**Line Item:** 4.760

**Quantity:** Approximately 890 square feet comprise the timber retaining walls behind 12010 BlackBerry terrace and at 15630 Blackberry Drive.

**History:** Unknown ages. The wall at 15630 Blackberry Drive appears to have been repaired since the previous study in 2020.

**Condition:** Good to fair overall condition with minor wood rot evident.



Retaining wall behind 12010 BlackBerry terrace



Retaining wall at 15630 Blackberry Drive



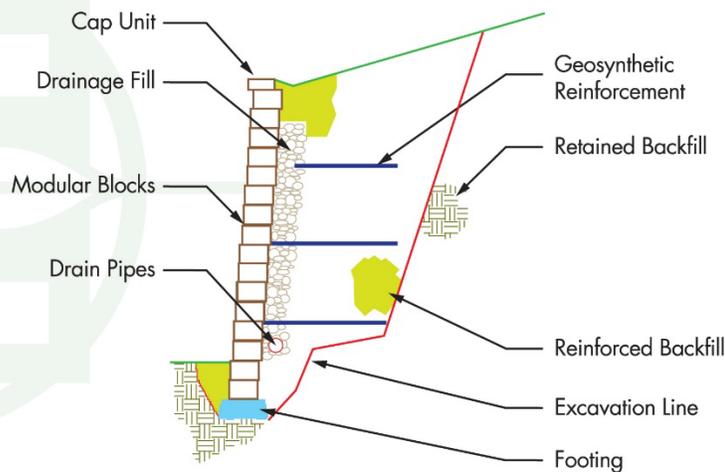
Wood rot at wall behind 12010 BlackBerry terrace

**Useful Life:** 15- to 20-years for timber retaining walls

**Component Detail Notes:** We advise Orchard Knolls replace with a modular, interlocking dry-set masonry retaining wall system. The cost of dry-set masonry retaining walls is similar to the cost of timber walls. However, dry-set masonry retaining walls offer a longer useful life of up to 35 years and lower total maintenance costs.

The following schematic depicts the typical components of a retaining wall system although it may not reflect the actual configuration at Orchard Knolls:

## MASONRY RETAINING WALL DETAIL



© Reserve Advisors

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

- Annually:
  - Inspect and repair leaning sections or damaged areas
  - Inspect and repair erosion at the wall base and backside

**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.

## Shed, Renovation

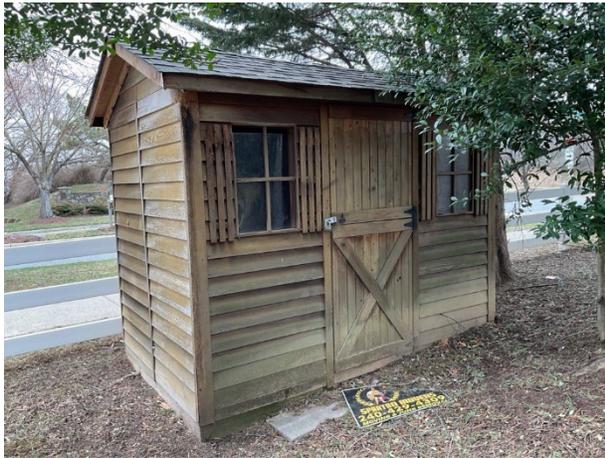
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**Line Item:** 4.782

**Quantity:** The Association maintains one shed near the entrance of the community comprising wood siding and an asphalt shingle roof.

**History:** Mostly original. The roof appears to have been replaced since the previous study in 2020.

**Condition:** Good to fair overall condition



**Shed overview**



**Asphalt shingle roof**

**Useful Life:** We recommend renovations every 25- to 30-years with the benefit of interim repairs funded through the operating budget.

**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 replacement of the siding, roof, windows and doors.

## Signage, Entrance Monument, Renovation

---

**Line Item:** 4.800

**Quantity:** The entrance monument signage includes the following elements:

- Stone structure
- Concrete signage
- Light fixtures
- Landscaping

**History:** Original. Exact repair history is unknown.

**Condition:** Good to fair overall condition with missing stones evident



**Entrance monument overview**



**Missing stone**

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

**Component Detail Notes:** Community signage contributes to the overall aesthetic appearance of the property to owners and potential buyers. Renovation or replacement of community signs is often predicated upon the desire to "update" the perceived identity of the community rather than for utilitarian concerns. Therefore, the specific times for replacement or renovation are discretionary.

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

- Annually:
  - Inspect and repair damage, vandalism and loose components
  - Verify lighting is working properly
  - Touch-up paint finish applications if applicable

**Priority/Criticality:** Per Board discretion

**Expenditure Detail Notes:** Expenditure timing and costs are depicted in the **Reserve Expenditures** table in Section 3. Our cost for renovation includes repairs to the masonry and replacement of the remaining components listed above.

## Townhouse Elements

### Asphalt Pavement, Repaving and Repairs

---

**Line Items:** 4.021 and 4.040

**Quantity:** Approximately 4,180 square yards comprise the streets and parking areas at the townhouses including Cherry Blossom Lane and Cherry Blossom Court.

**History:** The streets and parking areas were repaved in 2024.

**Condition:** Good overall condition



Asphalt pavement street overview



Asphalt pavement street overview



Asphalt pavement street overview



Asphalt pavement street overview

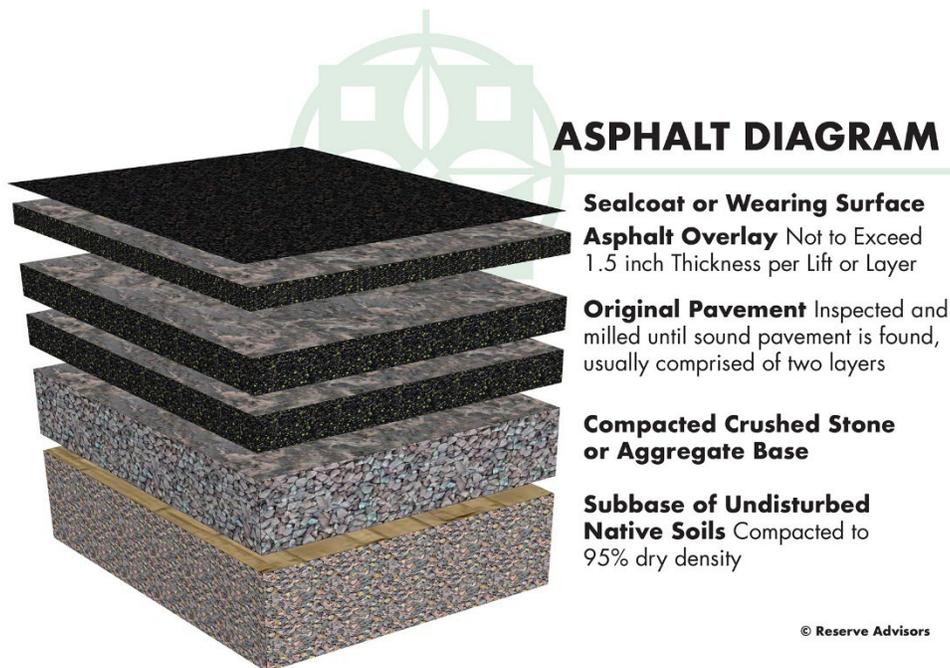
**Useful Life:** 15- to 20-years with the benefit of crack repair, patch, seal coat, and striping events every three- to five-years

**Component Detail Notes:** Proposals should include mechanically routing and filling all cracks with hot emulsion. Repairs should also include patching at areas exhibiting settlement, potholes, or excessive cracking. 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. These activities minimize the damaging effects of vehicle fluids, maintain a uniform and positive appearance, and maximize the useful life of the pavement.

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 Orchard Knolls:



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 of repaving at Orchard Knolls.

**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 ten percent (10%) and repairs to the catch basins.

## **Concrete Curbs and Gutters**

---

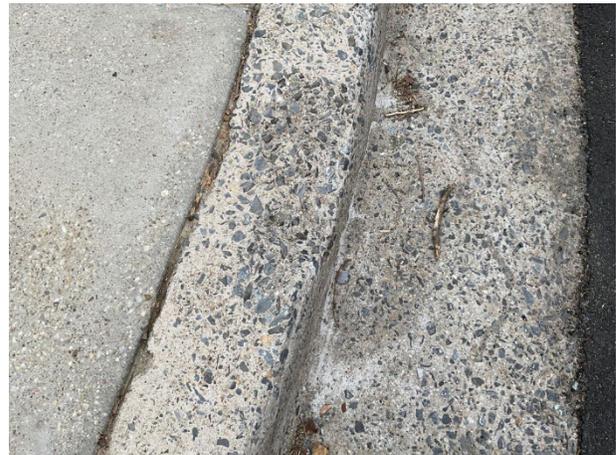
**Line Item:** 4.110

**Quantity:** Approximately 3,200 linear feet at the Townhouse streets and parking areas

**Condition:** Good to fair overall condition with spalls, scaling and minor settlement evident.



**Concrete curb and gutter**



**Concrete curb spall and scaling**



**Concrete curb scaling and minor settlement**

**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 800 linear feet of curbs and gutters, or twenty-five percent (25%) of the total, will require replacement during the next 30 years.

## **Concrete Sidewalks**

---

**Line Item:** 4.140

**Quantity:** Approximately 8,900 square feet at the townhouses. This quantity excludes the entrance walks as these are the responsibility of the unit owners to maintain

**History:** The Association replaced portions of the sidewalks within the last five years.

**Condition:** Good to fair overall with replaced sections and cracks evident.



**Concrete sidewalk overview**



**Replaced sections**



**Replaced section**



**Concrete sidewalk crack**



**Concrete sidewalk 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 3,115 square feet of concrete sidewalks, or thirty-five percent (35%) of the total, will require replacement during the next 30 years.

## Gazebo

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**Line Item:** 4.360

**Quantity:** One wood frame gazebo with a wood shake roof is located at the Townhouses

**History:** Unknown age. The Association informs us the roof was replaced in 2021.

**Condition:** Good to fair overall condition with organic growth evident



Gazebo overview with organic growth evident on roof



Wood shake roof



**Gazebo roof decking**

**Useful Life:** 20- to 25-years with periodic maintenance funded through the operating budget.

**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 budget for paint applications and repairs through the operating budget.

## **Light Poles and Fixtures**

---

**Line Item:** 4.561

**Quantity:** 11 fiberglass poles with light fixtures throughout the townhouses

**History:** Approximately 20 years old

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



**Light pole and fixture**



**Finish deterioration**

**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.

## Mailbox Stations, Gazebo Area

---

**Line Item:** 4.600

**Quantity:** Six mailbox stations in one kiosk located at the gazebo.

**History:** Unknown ages

**Condition:** Good to fair overall condition



**Mailbox stations**

**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 damage, vandalism, and finish deterioration
  - Verify posts are anchored properly

**Priority/Criticality:** Per Board discretion

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

## **Pavers, Bluestone**

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**Line Item:** 4.620

**Quantity:** Approximately 285 square feet of bluestone pavers at the gazebo

**History:** Original

**Condition:** Good to fair overall condition



**Bluestone pavers at gazebo**

**Useful Life:** 15- to 25-years

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

- Annually:
  - Inspect and repair settlement, trip hazards and paver spalls
  - Re-set and/or reseal damaged pavers as necessary
  - Periodically clean and remove overgrown vegetation 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. We suggest the Association conduct interim repairs of minor areas of pavers as normal maintenance, funded from the operating budget. We recommend replacement in coordination with replacement of the gazebo.

## Retaining Walls, Timber

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**Line Items:** 4.761 and 4.762

**Quantity:** The Townhouses maintain a timber retaining wall comprising approximately 270 square feet near the gazebo as well as approximately 1,320 square feet of timber retaining walls throughout the remainder of the townhouses.

**History:** Unknown and likely varying ages. A portion of the retaining walls near the gazebo appear to have been replaced since the previous study in 2020.

**Condition:** Ranging in condition from good to poor overall. The wall near the gazebo is in good overall condition and the remaining timber walls are mainly in fair to poor overall condition with displaced boards, weathered wood, organic growth, wood rot and wood deterioration evident.



**Retaining wall near gazebo in good to fair overall condition**



**Displaced board at wall near gazebo**



**Townhouse retaining wall in fair to poor overall condition**



**Wood cracks and deterioration**



**Weathered wood**



**Weathered townhouse retaining wall overview**



**Wood deterioration**



**Wood deterioration**



**Wood rot**



**Organic growth**



**Weathered wood and organic growth**

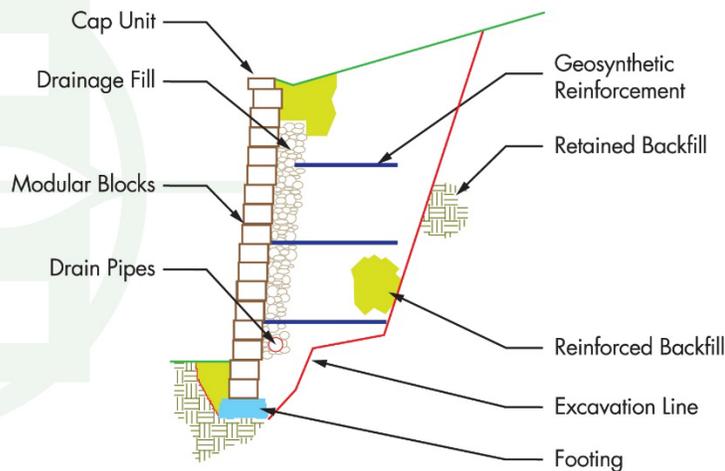


**Townhouse retaining wall overview**

**Useful Life:** 15- to 20-years for timber retaining walls

**Component Detail Notes:** We advise Orchard Knolls replace with a modular, interlocking dry-set masonry retaining wall system. The cost of dry-set masonry retaining walls is similar to the cost of timber walls. However, dry-set masonry retaining walls offer a longer useful life of up to 35 years and lower total maintenance costs. The following schematic depicts the typical components of a retaining wall system although it may not reflect the actual configuration at Orchard Knolls:

## MASONRY RETAINING WALL DETAIL



© Reserve Advisors

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

- Annually:
  - Inspect and repair leaning sections or damaged areas
  - Inspect and repair erosion at the wall base and backside

**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.

## Signage, Traffic Management

---

**Line Item:** 4.810

**Quantity:** The Townhouses maintains the traffic management signage at Cherry Blossom Lane and Cherry Blossom Court

**History:** Various ages; a small portion of the signs were replaced in 2020, and the fire lane signs were replaced approximately 17 years ago

**Condition:** Good to fair overall condition



Traffic management signage



Traffic management signage

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

**Component Detail Notes:** The community signs contribute to the overall aesthetic appearance of the property to owners and potential buyers. Replacement of community signs is often predicated upon the desire to "update" the perceived identity of the community rather than for utilitarian concerns. Therefore, the specific time for replacement of the signs is discretionary.

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



- Annually:
  - Inspect and repair damage, vandalism and loose components
  - Verify lighting is working properly if applicable
  - Touch-up paint finish applications if applicable

**Priority/Criticality:** Per Board discretion

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

## **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 every 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.

Orchard Knolls 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 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 North Potomac, Maryland at an annual inflation rate<sup>3</sup>. Isolated or regional

<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.

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

- The past and current maintenance practices of Orchard Knolls 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.

**ZACHARY T. FORTUNE**  
**Engineer, Northeast Region**  
**Responsible Advisor**

**CURRENT CLIENT SERVICES**

Zachary Fortune, a Mechanical Engineer, is an Advisor for Reserve Advisors. Mr. Fortune 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 Zachary Fortune demonstrating the breadth of experiential knowledge of community associations in construction and related systems.

**West Broad Village Property Owners Association** – Located in Glen Allen, Virginia, this community consists of both residential and commercial entities. Residents at this community have access to two ponds, a pool, parking garages with elevators, a playground and a walking trail through a beautiful common park and patio areas with pergolas.

**Dorsey Hall Professional Park Condominium** – Located in Ellicott City, Maryland, this property was originally constructed in 1989 and includes 10 buildings which house 115 commercial units. Each building contains two common lobbies each accented with tile flooring and a staircase directing customers to the second story units. This professional park provides its community with access to dentists, law firms, healthcare centers, financial consulting and home remodeling.

**Ellipse Common Area** – Located in Chantilly, Virginia, this property will be home to 400 units upon completion of construction. The common area enjoyed by these residents consists of a gazebo, two ponds, two monuments, and a relaxing park area furnished with benches.

**Fox Mill Station Condominiums** – Located in Fairfax, Virginia, this community serves its residents with a clubhouse, a pool with a pool house, a playground and a private car wash. The 15 buildings were constructed in two phases, one in 1998 and one in 2005. The property also features patios equipped with grills and picnic tables, pergolas and walking paths throughout the community.

**The Residences at Lake Elkhorn** – Located in Columbia, Maryland, this townhome association is comprised of three buildings that house 62 units. These buildings are constructed with both fiber cement and wood siding with masonry and concrete facades as well. Concrete staircases supported by a metal pan leads residents from the ground level to the second and third story units. The site also features a large deck with a gazebo where residents can sit at picnic tables and benches and look out over the lake.

**East Colony Square Homeowners Association** – Located in Suitland-Silver Hill, Maryland, this community is comprised of 185 units in 29 buildings. This expansive community enjoys tennis and basketball courts, a pond, three playgrounds, and a walking path through the park.

**PRIOR RELEVANT EXPERIENCE**

Before joining Reserve Advisors, LLC, Mr. Fortune attended the University of Pittsburgh where he attained his Bachelor of Science degree in Mechanical Engineering. His rigorous coursework focused on using problem solving to understand mechanical systems and principles. Additionally, Mr. Fortune has worked full time at Philips where he developed and analyzed hardware and algorithm interactions in hospital grade respirators and Continuous Positive Airway Pressure (CPAP) devices.

**EDUCATION**

University of Pittsburgh - B.S. Mechanical Engineering

**NICHOLAS R. JULIA, RS**  
**Regional Engineering Manager, Northeast Region**

**CURRENT CLIENT SERVICES**

Nicholas R. Julia, a Civil Engineer, is an Advisor for Reserve Advisors, LLC. Mr. Julia is responsible for the inspection and analysis of the condition of clients' property, 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 Analysis and Capital Replacement Forecast services and the preparation of Reserve Study Reports for condominiums, townhomes and homeowner associations. Nicholas Julia often serves as Quality Assurance Reviewer for all types of developments to ensure our reports maintain the level of quality which is expected of our firm.



The following is a partial list of clients served by Nicholas Julia demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

**One Park Crest Condominium** is an upscale 19-story high rise building located in McLean, Virginia just outside of Washington, D.C. Residents enjoy an 18<sup>th</sup> floor club room and outdoor pool. The building also contains an exercise room, library, professionally decorated lobby and underground parking.

**The Maryland Club** is an exclusive club located in the heart of Baltimore, Maryland. The elegant white marble main building dates back to 1892. The club contains squash courts, a banquet area, a dining hall, and a professional kitchen amongst many other amenities.

**Town of St. Michaels**, a scenic town located on the Eastern Shore of Maryland. The town includes an administrative building, police station, public works garage and offices, and a historic log cabin. The municipality also maintains the asphalt pavement streets throughout the town, multiple parks, two water towers and a complex arsenic removal water treatment system.

**One Loudoun Neighborhood Association** is an upscale planned unit development comprising townhomes and single family homes located in Ashburn, Virginia. The property includes a high-end clubhouse with over 12,000 square feet of interior space including a gymnasium and yoga studio. The property also includes walking trails, multiple playgrounds, a tennis court, sports court, and a pool.

**3883 Connecticut Avenue Condominium** is a 10-story midrise located in Washington, D.C. The building was constructed in 2002 and contains luxurious amenities including an elevated outdoor pool on the 8<sup>th</sup> floor, party room, exercise facility and an underground parking garage.

**Lake Petersburg Association** This man-made lake community of 380 single family homes is located in Petersburg, Illinois. Components of the property include a community boat launch, dock, three tennis courts, a basketball court, two maintenance buildings, an office, and vehicular equipment. The Association also maintains an earthen dam on the far side of the lake.

**PRIOR RELEVANT EXPERIENCE**

Before joining Reserve Advisors, Mr. Julia attended Marquette University in Milwaukee, Wisconsin where he attained his Bachelor of Science degree in Civil Engineering. His studies focused on transportation engineering and construction management engineering.

**EDUCATION**

Marquette University - B.S. Civil Engineering

**PROFESSIONAL AFFILIATIONS / DESIGNATIONS**

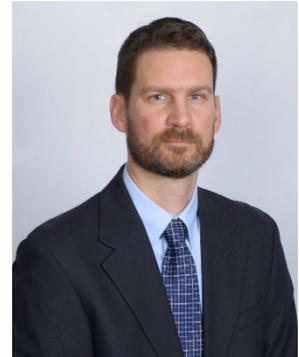
Engineer in Training (E.I.T.) – Washington D.C.  
Reserve Specialist (RS) - Community Association Institute

**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 Orchard Knolls 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) Orchard Knolls 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 subject property. The purpose of our energy benchmarking services is to track, collect and summarize the subject property's energy consumption over time for your use in comparison with other buildings of similar size and establishing a performance baseline for your planning of long-term energy efficiency goals.

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. Our energy benchmarking services with respect to the subject property is limited to collecting energy and utility data and summarizing such data in the form of an Energy Star Portfolio Manager Report or any other similar report, and hereby expressly excludes any recommendations with respect to the results of such energy benchmarking services or the accuracy of the energy information obtained from utility companies and other third-party sources with respect to the subject property. The reserve report and any energy benchmarking report (i.e., any Energy Star Portfolio Manager Report) (including any subsequent revisions thereto pursuant to the terms hereof, collectively, the "Report") are based upon a "snapshot in time" at the moment of inspection. RA may note visible physical defects in the Report. The inspection is made by employees generally familiar with real estate and building construction. Except to the extent readily apparent to RA, RA cannot and shall not opine on the structural integrity of or other physical defects in the property under any circumstances. Without limitation to the foregoing, RA cannot and shall not opine on, nor is RA responsible for, the property's conformity to specific governmental code requirements for fire, building, earthquake, occupancy or otherwise.

RA is not responsible for conditions that have changed between the time of inspection and the issuance of the Report. RA does not provide invasive testing on any mechanical systems that provide energy to the property, nor can RA opine on any system components that are not easily accessible during the inspection. 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 vapor, water, oil, gas, coal, or other subsurface mineral and use rights or such hidden conditions, and RA assumes no responsibility for any such conditions. The Report contains opinions of estimated replacement costs or deferred maintenance expenses and remaining useful lives, which are neither a guarantee of the actual costs or expenses of replacement or deferred maintenance nor a guarantee of remaining useful lives of any property element.

RA assumes, without independent verification, the accuracy of all data provided to it. Except to the extent resulting from RA's willful misconduct in connection with the performance of its obligations under this agreement, you agree to indemnify, defend, and hold RA and its affiliates, officers, managers, employees, agents, successors and assigns (each, an "RA Party") harmless from and against (and promptly reimburse each RA Party for) any and all losses, claims, actions, demands, judgments, orders, damages, expenses or liabilities, including, without limitation, reasonable attorneys' fees, asserted against or to which any RA Party may become subject in connection with this engagement, including, without limitation, as a result of any false, misleading or incomplete information which RA relied upon that was 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 or to whom you provided the Report. NOTWITHSTANDING ANY OTHER PROVISION HEREIN TO THE CONTRARY, THE AGGREGATE LIABILITY (IF ANY) OF RA WITH RESPECT TO THIS AGREEMENT AND RA'S OBLIGATIONS HEREUNDER IS LIMITED TO THE AMOUNT OF THE FEES ACTUALLY RECEIVED BY RA FROM YOU FOR THE SERVICES AND REPORT PERFORMED BY RA UNDER THIS AGREEMENT, WHETHER ARISING IN CONTRACT, TORT (INCLUDING NEGLIGENCE), STRICT LIABILITY OR OTHERWISE. YOUR REMEDIES SET FORTH HEREIN ARE EXCLUSIVE AND ARE YOUR SOLE REMEDIES FOR ANY FAILURE OF RA TO COMPLY WITH ITS OBLIGATIONS HEREUNDER OR OTHERWISE. RA SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, CONSEQUENTIAL, PUNITIVE OR EXEMPLARY DAMAGES OF ANY KIND, INCLUDING, BUT NOT LIMITED TO, ANY LOST PROFITS AND LOST SAVINGS, LOSS OF USE OR INTERRUPTION OF BUSINESS, HOWEVER CAUSED, WHETHER ARISING IN CONTRACT, TORT (INCLUDING NEGLIGENCE), BREACH OF WARRANTY, STRICT LIABILITY OR OTHERWISE, EVEN IF RA HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. IN NO EVENT WILL RA BE LIABLE FOR THE COST OF PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES. RA DISCLAIMS ALL REPRESENTATIONS AND WARRANTIES WHATSOEVER, EXPRESS OR IMPLIED OR OF ANY NATURE, WITH REGARD TO THE SERVICES AND THE REPORT, INCLUDING, WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

**Report** - RA will complete the services in accordance with the Proposal. The Report represents a valid opinion of RA's findings and recommendations with respect to the reserve study and is deemed complete. RA will consider any additional information made available to RA within 6 months of issuing the Report and issue a revised Report based on such additional information if a timely request for a revised Report is made by you. 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. RA reserves the right to, and you acknowledge and agree that RA may, use any data provided by you in connection with the services, or gathered as a result of providing such services, including in connection with creating and issuing any Report, in a de-identified and aggregated form for RA's business purposes.

**Your Obligations** - You agree to provide us access to the subject property for an 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. Additionally, you agree to provide historical replacement schedules, utility bills and historical energy usage files that RA requests and deems necessary to complete the energy benchmarking services, and you agree to provide any utility release(s) reasonably requested by RA permitting RA to obtain any such data and/or information from any utility representative or other third party. 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 the Report is limited to only the purpose stated herein. You acknowledge that RA is the exclusive owner of all intellectual property rights in and relating to the Report. You hereby acknowledge that any use or reliance by you on the Report for any unauthorized purpose is at your own risk and that you will be liable for the consequences of any unauthorized use or distribution of the Report. Use or possession of the Report by any unauthorized third party is prohibited. 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 the Report in its entirety to the following third parties: members of your organization (including your directors, officers, tenants and prospective purchasers), your accountants, attorneys, financial institutions and property managers who need to review the information contained herein, and any other third party who has a right to inspect the Report under applicable law including, but not limited to, any government entity or agency, or any utility companies. Without the written consent of RA, you shall not disclose the Report to any other third party. By engaging our services, you agree that the Report contains intellectual property developed (and owned solely) by RA and agree that you will not reproduce or distribute the Report **to any party that conducts reserve studies without the written consent of RA**.

RA will include (and you hereby agree that RA may include) your name in our client lists. RA reserves the right to use (and you hereby agree that RA may 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** - If reserve study and energy benchmarking services are performed by RA, then the retainer payment is due upon execution of this agreement and prior to the inspection by RA, and any balance is due net 30 days from the Report shipment date. If only energy benchmarking services are performed by RA, then the retainer payment is due upon execution of this agreement and any balance is due net 30 days from the Report shipment date. In any case, any balance remaining 30 days after delivery of the Report shall accrue an interest charge of 1.5% per month. Unless this agreement is earlier terminated by RA in the event you breach or otherwise fail to comply with your obligations under this agreement, RA's obligations under this agreement shall commence on the date you execute and deliver this agreement and terminate on the date that is 6 months from the date of delivery of the Report by RA. Notwithstanding anything herein to the contrary, each provision that by its context and nature should survive the expiration or early termination of this agreement shall so survive, including, without limitation, any provisions with respect to payment, intellectual property rights, limitations of liability and governing law. We reserve the right to limit or decline refunds in our sole discretion. Refunds vary based on the applicable facts and circumstances.

**Miscellaneous** – Neither party shall be liable for any failures or delays in performance due to fire, flood, strike or other labor difficulty, act of God, act of any governmental authority, riot, embargo, fuel or energy shortage, pandemic, wrecks or delays in transportation, or due to any other cause beyond such party's reasonable control; provided, however, that you shall not be relieved from your obligations to make any payment(s) to RA as and when due hereunder. In the event of a delay in performance due to any such cause, the time for completion or date of delivery will be extended by a period of time reasonably necessary to overcome the effect of such delay. You may not assign or otherwise transfer this agreement, in whole or in part, without the prior written consent of RA. RA may freely assign or otherwise transfer this agreement, in whole or in part, without your prior consent. This agreement shall be governed by the laws of the State of Wisconsin without regard to any principles of conflicts of law that would apply the laws of another jurisdiction. Any dispute with respect to this agreement shall be exclusively venued in Milwaukee County Circuit Court or in the United States District Court for the Eastern District of Wisconsin. Each party hereto agrees and hereby waives the right to a trial by jury in any action, proceeding or claim brought by or on behalf of the parties hereto with respect to any matter related to this agreement.