
CAPITAL RESERVE ANALYSIS
FOR
BIRCHWOOD
LAWRENCEVILLE, GEORGIA

PREPARED FOR:

BIRCHWOOD HOMEOWNERS ASSOCIATION, INC.
C/O HERITAGE PROPERTY MANAGEMENT SERVICES
500 SUGAR MILL ROAD, BUILDING B, SUITE 200
ATLANTA, GEORGIA 30350

PREPARED BY: ROBERT "NICKO" N. ROMEO, R.S.



3985 STEVE REYNOLDS BLVD.
BUILDING A
NORCROSS, GEORGIA 30093
(770) 923-1122 • (770) 923-0099 FAX



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I. CAPITAL RESERVE DETERMINATION

A. METHODOLOGY AND ASSUMPTIONS

A Capital Reserve Analysis is a report giving an estimate of the amount of money which must be put aside to replace or restore the common elements and building components that will require replacement before the community's use expires. Typically, the items included are limited to those with a useful life of 30 years or less.

The commonly accepted guidelines as established by governing statutes, the Community Associations Institute, and our engineering judgment and experience have been used as a basis for the reserve schedule in this report. The schedule, when implemented in conjunction with a well-planned preventive maintenance program, will provide adequate funds for the replacement of the community's common elements as they reach the end of their useful lives. In order to assure that this schedule remains current, a reassessment of the existing condition and replacement costs for each item is necessary at a regular interval as recommended within the report. Updating of the schedule, reduction of the useful lives, and inflation of the replacement costs may be executed with the benefit of re-inspection. The schedule must also be adjusted as common elements are added or modified.

It is important to note that a reserve item is a common element component which will require replacement on a recurring basis using a similar cost item. If an upgrade is necessitated due to a cost change or other extraordinary reason, the cost over and above the replacement cost is considered to be a capital improvement rather than a capital replacement. Capital improvements should not be funded from the reserves. After it has been upgraded, the item will then become part of the reserve schedule.

Method of Accounting

The Method used in the Capital Reserve Analysis is the "Cash Flow" Method and the funding plan utilized is the Baseline Funding. The goal of this funding method is to keep the reserve cash balance above zero. This means that while each individual component may not be fully funded, the reserve balance does not drop below zero during the projected period.

Level of Service

This reserve analysis was completed utilizing a Level I, Full-Service Study as defined under the National Reserve Standards that have been adopted by the Community Association Institute. The common component inventory was established based on information provided by the association's representative, field measurements and/or drawing take-offs. The Full-Service Study includes a review of the common property components and preparation of this report.

B. SUMMARY OF REPLACEMENT RESERVE NEEDS

1. TECHNICAL DEFINITIONS

This page is a summary of each of the different categories within the detailed schedule. It shows the total dollar amounts for each category and is based on the full funding of each item.

Following are descriptions of the different variables, which are shown on the reserve schedule in the order in which they appear.

Description

This column on the schedule lists all of the components for which we recommend that reserves be accumulated. The basis for the selection of these items includes:

- § Review of the governing documents regarding the common and limited common elements.
- § Review of all available maintenance contracts.
- § The type of component and its anticipated full useful life and condition.
- § A review of applicable statutes dealing with reserve requirements.

Quantity

The quantities which are used as a basis for this report are calculated from field measurements and drawings which have been supplied to Ray Engineering, Inc. Ray Engineering, Inc. has not made extensive as-built measurements, and the quantities used are based primarily on the reference materials provided.

Unit Cost

The construction and replacement costs used in this report are based primarily on the various publications written by the R.S. Means Company and construction related experience of Ray Engineering. The publications are listed in the Bibliography.

Reserve Requirements Present Dollars

This is calculated by multiplying the “quantity” by the “unit costs.”

Existing Reserve Fund

This is an allocation of the total existing reserve funds to the individual line items using a weighing factor which is based on the total “reserve requirement present dollars,” the “estimated remaining life,” and other factors. An existing balance was submitted to Ray Engineering, Inc. This balance was used in developing our Reserve Analysis.

Estimated Useful Life

The useful life values that are part of this report come from a variety of sources, some of which are listed in the Bibliography. In order to ensure that all items attain their anticipated useful lives, it is imperative that a well-planned maintenance schedule be adhered to. If an existing item is replaced with an upgraded product, the estimated remaining life has been listed for the new product.

Estimated Remaining Life

The estimated remaining life is based on both the age of the component and the results of the field inspections conducted in January 2020.

Annual Reserve Funding

The reserve requirement present value was converted to the future value for the time in which each replacement will occur. A 3% compounded inflation rate has been assumed. The future value was then converted to an annual reserve fund value. The arithmetic calculations and formulas are indicated later in this report.

C. EXECUTIVE SUMMARY

Birchwood is a residential swim and tennis community located in Lawrenceville, Georgia. The community consists of 102 individual, single-family homes. It is the Consultant's understanding that the property is approximately 24 years old. The entrance to the property is located off Plantation Road in Lawrenceville, Georgia. The common elements generally consist of an amenity area parking lot, concrete curbs and gutters, sidewalks, common area landscaping, common area drainage, fencing, entry monuments and signage, a swimming pool, a playground, two tennis courts, a basketball court, a pool house, and irrigation.

The pool house is a one-story, wood-framed structure that is constructed over a basement which bears on a cast-in-place concrete slab-on-grade. The basement of the pool house contains the mechanical and pool equipment room. The main level contains an overhanging pavilion, Men's and Women's restrooms. The exterior finishes consist of painted wood siding, casting trim, soffit, and fascia with steel columns and railing. The roof is a moderately steep-sloped roof system with composition asphalt shingles.

This reserve analysis was completed utilizing the "full" level of service, which included the property review and preparation of this report. This Reserve Analysis is prepared for the fiscal year starting January 1, 2020. It is our understanding that the reserve account for the community has a balance of approximately \$1,221 with an annual contribution of \$1,324 for 2019. Based on our analysis and review of the property, the current annual contribution has been found to be grossly inadequate to provide for the future expenses as provided by this analysis. It is our recommendation that the annual contribution be increased to \$47,500 a year in 2020 and 2021. Once the main maintenance items are completed, a contribution of \$35,000 can be allotted for the remainder of the reserve. The annual contribution of \$47,500 is equivalent to an average contribution of \$465.69 per year, per residential home. For a review of the funding requirements for the next 20 years, please refer to the "Cost and Funding Recap" included as a part of this report.

D. REPLACEMENT RESERVE REQUIREMENTS

SCHEDULE I

Sitework

SCHEDULE II

Exterior/Interior Building Maintenance

SCHEDULE III

Electrical/Mechanical/Plumbing Maintenance

YEAR BY YEAR FUNDING RECAP - ALL ITEMS

COST AND FUNDING RECAP

ITEMIZED PROJECT COSTS BY YEAR

PROJECT NAME	BIRCHWOOD
INFLATION RATE	3.00%
YIELD ON RESERVE FUNDS	1.00%
BEGINNING YEAR OF FUNDING	2020
PLANNING HORIZON	20 yrs

SCHEDULE Ia
BIRCHWOOD
SITWORK ITEMS - PRELIMINARY DATA

	Sitework Item Description	Units of Measure	Number of Units	Cost per Unit	Total Cost in Current Dollars	Estimated Useful Life	Estimated Remaining Life	Notes
1	Amenity Area Parking Lot - Sealcoat/Restripe/Repair	S.Y.	815	\$2.50	\$2,038	6	1	2
2	Amenity Area Parking Lot - 1-1/2" Overlay	S.Y.	815	\$24.50	\$19,968	20	5	2
3	Amenity Area Concrete - Repair/Replace Cracked, Settled Sections	Allow	1	\$2,500.00	\$2,500	6	0	3
4	Entry Monuments/Signage/Fencing - Repair/Clean/Tuck Point	Allow	1	\$2,000.00	\$2,000	8	1	4
5	Landscaping - Upgrade/Remove Trees, Shrubs/Trim	Allow	1	\$15,000.00	\$15,000	5	0	5
6	Drainage/Slope Erosion/Storm System - Repair/Maintain	Allow	1	\$5,000.00	\$5,000	7	1	6
7	Amenity Area Chain-Link Fence - Repair/Partial Replace/Paint	L.S.	1	\$3,000.00	\$3,000	8	1	7
8	Swimming Pool Surface - Resurface/Rep. Tiles	L.S.	1	\$25,000.00	\$25,000	10	1	8
9	Swimming Pool Deck - Repair/Seal Cracks	Allow	1	\$3,000.00	\$3,000	6	0	8
10	Swimming Pool Wood Deck - Partial Replacement/Repair	Allow	1	\$8,000.00	\$8,000	10	0	8
11	Swimming Pool Furniture - Partial Replacement	Allow	1	\$10,000.00	\$10,000	5	2	8
12	Swimming Pool Fence/Gate - Repair/Paint	Allow	1	\$3,000.00	\$3,000	8	0	8
13	Swimming Pool Cover - Replace	Allow	1	\$5,000.00	\$5,000	10	4	9
14	Tennis Courts 1 & 2 - Resurface (Crack Repair)	Ea.	2	\$3,250.00	\$6,500	7	1	9
15	Tennis Courts - Replace Surface/Fence	Ea.	2	\$35,000.00	\$70,000	25	8	9
16	Tennis Cts Fencing, Light Poles - Repair/Paint	Allow	1	\$5,000.00	\$5,000	10	3	9
17	Tennis Courts Equipment - Replace	Allow	1	\$1,000.00	\$1,000	7	2	9
18	Basketball Goal - Paint/Replace Board	L.S.	1	\$600.00	\$600	10	0	10
19	Basketball Court - Sealcoat/Restripe/Repair	S.Y.	200	\$2.50	\$500	6	0	10
20	Basketball Court - Replace Surface/Fence	Allow	1	\$6,000.00	\$6,000	20	0	10
21	Playground - Repair/Partial Replace Equipment	L.S.	1	\$500.00	\$500	6	5	11
22	Playground - Replace Equipment	L.S.	1	\$4,100.00	\$4,100	20	19	11
23	Playground - Replace Border	L.S.	1	\$2,500.00	\$2,500	30	0	11
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SCHEDULE 1b
BIRCHWOOD
SITework ITEMS - REPLACEMENT COST & FUNDING DATA

Sitetework Item Description	First Replacement			Second Replacement			Third Replacement			Fourth Replacement			Fifth Replacement		
	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced
1 Amenity Area Parking Lot - Sealcoat/Restripe/Repair	2021	2099	1049	2027	2506	418	2033	2992	499	2039	3573	595	2045		
2 Amenity Area Parking Lot - 1-1/2" Overlay	2025	23148	3858	2045			2065			2085			2105		
3 Amenity Area Concrete - Repair/Replace Cracked, Set	2020	2500	2500	2026	2985	498	2032	3564	594	2038	4256	709	2044		
4 Entry Monuments/Signage/Fencing - Repair/Clean/Tue	2021	2060	1030	2029	2610	326	2037	3306	413	2045			2053		
5 Landscaping - Upgrade/Remove Trees, Shrubs/Trim	2020	15000	15000	2025	17389	3478	2030	20159	4032	2035	23370	4674	2040		
6 Drainage/Slope Erosion/Storm System - Repair/Mainta	2021	5150	2575	2028	6334	905	2035	7790	1113	2042			2049		
7 Amenity Area Chain-Link Fence - Repair/Partial Repla	2021	3090	1545	2029	3914	489	2037	4959	620	2045			2053		
8 Swimming Pool Surface - Resurface/Rep. Tiles	2021	25750	12875	2031	34606	3461	2041			2051			2061		
9 Swimming Pool Deck - Repair/Seal Cracks	2020	3000	3000	2026	3582	597	2032	4277	713	2038	5107	851	2044		
10 Swimming Pool Wood Deck - Partial Replacement/Re	2020	8000	8000	2030	10751	1075	2040			2050			2060		
11 Swimming Pool Furniture - Partial Replacement	2022	10609	3536	2027	12299	2460	2032	14258	2852	2037	16528	3306	2042		
12 Swimming Pool Fence/Gate - Repair/Paint	2020	3000	3000	2028	3800	475	2036	4814	602	2044			2052		
13 Swimming Pool Cover - Replace	2024	5628	1126	2034	7563	756	2044			2054			2064		
14 Tennis Courts 1 & 2 - Resurface (Crack Repair)	2021	6695	3348	2028	8234	1176	2035	10127	1447	2042			2049		
15 Tennis Courts - Replace Surface/Fence	2028	88674	9853	2053			2078			2103			2128		
16 Tennis Cts Fencing, Light Poles - Repair/Paint	2023	5464	1366	2033	7343	734	2043			2053			2063		
17 Tennis Courts Equipment - Replace	2022	1061	354	2029	1305	186	2036	1605	229	2043			2050		
18 Basketball Goal - Paint/Replace Board	2020	600	600	2030	806	81	2040			2050			2060		
19 Basketball Court - Sealcoat/Restripe/Repair	2020	500	500	2026	597	100	2032	713	119	2038	851	142	2044		
20 Basketball Court - Replace Surface/Fence	2020	6000	6000	2040			2060			2080			2100		
21 Playground - Repair/Partial Replace Equipment	2025	580	97	2031	692	115	2037	826	138	2043			2049		
22 Playground - Replace Equipment	2039	7189	359	2059			2079			2099			2119		
23 Playground - Replace Border	2020	2500	2500	2050			2080			2110			2140		
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SCHEDULE IIa
BIRCHWOOD
EXTERIOR/INTERIOR BUILDING MAINTENANCE ITEMS
PRELIMINARY DATA

	Exterior/Interior Building Maintenance Item Description	Units of Measure	Number of Units	Cost per Unit	Total Cost in Current Dollars	Estimated Useful Life	Estimated Remaining Life	Notes
1	Pool House Roof - Replace	Sq.	22	\$400.00	\$8,800	25	4	12
2	Pool House Exterior Finishes - Repair/Paint/Seal/Caulk	Allow	1	\$4,000.00	\$4,000	8	3	12
3	Pool House Bathrooms - Repair/Paint	Ea.	2	\$300.00	\$600	12	1	12
4	Pool House Bathrooms - Upgrade	Ea.	2	\$4,000.00	\$8,000	20	5	12
5	Pool House Furniture - Partial Replacement	Allow	1	\$3,000.00	\$3,000	15	2	12
6	Pool House Balcony/Railing/Stairs - Repair/Stain/Paint	Allow	1	\$5,000.00	\$5,000	10	0	12
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SCHEDULE IIB
BIRCHWOOD
EXTERIOR/INTERIOR BUILDING MAINTENANCE ITEMS - REPLACEMENT COST & FUNDING DATA

	Exterior/Interior Building Maintenance Item Description	First Replacement			Second Replacement			Third Replacement			Fourth Replacement			Fifth Replacement		
		Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced
1	Pool House Roof - Replace	2024	9904	1981	2049			2074			2099			2124		
2	Pool House Exterior Finishes - Repair/Paint/Seal/Caulk	2023	4371	1093	2031	5537	692	2039	7014	877	2047			2055		
3	Pool House Bathrooms - Repair/Paint	2021	618	309	2033	881	73	2045			2057			2069		
4	Pool House Bathrooms - Upgrade	2025	9274	1546	2045			2065			2085			2105		
5	Pool House Furniture - Partial Replacement	2022	3183	1061	2037	4959	331	2052			2067			2082		
6	Pool House Balcony/Railing/Stairs - Repair/Stain/Paint	2020	5000	5000	2030	6720	672	2040			2050			2060		
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SCHEDULE IIIa
BIRCHWOOD
ELECTRICAL/MECHANICAL/PLUMBING ITEMS - PRELIMINARY DATA

	Electrical Mechanical Item Description	Units of Measure	Number of Units	Cost per Unit	Total Cost in Current Dollars	Estimated Useful Life	Estimated Remaining Life	Notes
1	Swimming Pool Equipment - Replace Pumps/Motors	Allow	1	\$3,000.00	\$3,000	8	2	8
2	Swimming Pool Filtration System - Replace Filters	Allow	1	\$2,000.00	\$2,000	8	2	8
3	Pool House Electrical Fixtures - Partial Repl.	Allow	1	\$1,500.00	\$1,500	8	3	12
4	Pool House Plumbing & Fixtures - Partial Repl.	Allow	1	\$1,500.00	\$1,500	8	3	12
5	Pool House Water Heater - Replace	L.S.	1	\$5,000.00	\$5,000	12	3	12
6	Pool House Drinking Fountain - Replace	L.S.	1	\$1,750.00	\$1,750	15	4	12
7	Security System - Upgrade	Allow	1	\$1,000.00	\$1,000	8	2	13
8	Common Area Accent Lighting - Repair/Partial Replace Fixtures	Allow	1	\$1,500.00	\$1,500	7	1	14
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SCHEDULE IIIb
BIRCHWOOD
ELECTRICAL/MECHANICAL/PLUMBING ITEMS - REPLACEMENT COST & FUNDING DATA

	Electrical Mechanical Item Description	First Replacement			Second Replacement			Third Replacement			Fourth Replacement			Fifth Replacement		
		Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced	Yr Replaced	Adjusted Cost if Inflation is 3.00%	Annual Funding Thru Yr Replaced
1	Swimming Pool Equipment - Replace Pumps/Motors	2022	3183	1061	2030	4032	504	2038	5107	638	2046			2054		
2	Swimming Pool Filtration System - Replace Filters	2022	2122	707	2030	2688	336	2038	3405	426	2046			2054		
3	Pool House Electrical Fixtures - Partial Repl.	2023	1639	410	2031	2076	260	2039	2630	329	2047			2055		
4	Pool House Plumbing & Fixtures - Partial Repl.	2023	1639	410	2031	2076	260	2039	2630	329	2047			2055		
5	Pool House Water Heater - Replace	2023	5464	1366	2035	7790	649	2047			2059			2071		
6	Pool House Drinking Fountain - Replace	2024	1970	394	2039	3069	205	2054			2069			2084		
7	Security System - Upgrade	2022	1061	354	2030	1344	168	2038	1702	213	2046			2054		
8	Common Area Accent Lighting - Repair/Partial Repl	2021	1545	773	2028	1900	271	2035	2337	334	2042			2049		
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BIRCHWOOD
COST & FUNDING RECAP

Year	Annual Funds	Future Expenses	Net Accumulated Funds
Current Funds			\$1,221
2020	\$47,500	\$46,100	\$2,633
2021	\$47,500	\$47,007	\$3,153
2022	\$35,000	\$21,218	\$16,966
2023	\$35,000	\$18,576	\$33,560
2024	\$35,000	\$17,502	\$51,394
2025	\$35,000	\$50,391	\$36,517
2026	\$35,000	\$7,164	\$64,718
2027	\$35,000	\$14,805	\$85,560
2028	\$35,000	\$108,942	\$12,474
2029	\$35,000	\$7,829	\$39,770
2030	\$35,000	\$46,500	\$28,668
2031	\$35,000	\$44,988	\$18,967
2032	\$35,000	\$22,812	\$31,345
2033	\$35,000	\$11,216	\$55,442
2034	\$35,000	\$7,563	\$83,434
2035	\$35,000	\$51,413	\$67,855
2036	\$35,000	\$6,419	\$97,115
2037	\$35,000	\$30,578	\$102,508
2038	\$35,000	\$20,429	\$118,104
2039	\$35,000	\$26,105	\$128,180

BIRCHWOOD
ITEMIZED PROJECTED COSTS BY YEAR

<i>Year</i>	<i>Item</i>	<i>Cost</i>
Grand Total		\$607,555
2020 Total		\$46,100
2020	Amenity Area Concrete - Repair/Replace Cracked, Settled S	\$2,500
2020	Basketball Court - Replace Surface/Fence	\$6,000
2020	Basketball Court - Sealcoat/Restripe/Repair	\$500
2020	Basketball Goal - Paint/Replace Board	\$600
2020	Landscaping - Upgrade/Remove Trees, Shrubs/Trim	\$15,000
2020	Playground - Replace Border	\$2,500
2020	Pool House Balcony/Railing/Stairs - Repair/Stain/Paint	\$5,000
2020	Swimming Pool Deck - Repair/Seal Cracks	\$3,000
2020	Swimming Pool Fence/Gate - Repair/Paint	\$3,000
2020	Swimming Pool Wood Deck - Partial Replacement/Repair	\$8,000
2021 Total		\$47,007
2021	Amenity Area Chain-Link Fence - Repair/Partial Replace/Pai	\$3,090
2021	Amenity Area Parking Lot - Sealcoat/Restripe/Repair	\$2,099
2021	Common Area Accent Lighting - Repair/Partial Replace Fixtu	\$1,545
2021	Drainage/Slope Erosion/Storm System - Repair/Maintain	\$5,150
2021	Entry Monuments/Signage/Fencing - Repair/Clean/Tuck Poir	\$2,060
2021	Pool House Bathrooms - Repair/Paint	\$618
2021	Swimming Pool Surface - Resurface/Rep. Tiles	\$25,750
2021	Tennis Courts 1 & 2 - Resurface (Crack Repair)	\$6,695
2022 Total		\$21,218
2022	Pool House Furniture - Partial Replacement	\$3,183
2022	Security System - Upgrade	\$1,061
2022	Swimming Pool Equipment - Replace Pumps/Motors	\$3,183
2022	Swimming Pool Filtration System - Replace Filters	\$2,122
2022	Swimming Pool Furniture - Partial Replacement	\$10,609
2022	Tennis Courts Equipment - Replace	\$1,061
2023 Total		\$18,576
2023	Pool House Electrical Fixtures - Partial Repl.	\$1,639
2023	Pool House Exterior Finishes - Repair/Paint/Seal/Caulk	\$4,371
2023	Pool House Plumbing & Fixtures - Partial Repl.	\$1,639
2023	Pool House Water Heater - Replace	\$5,464
2023	Tennis Cts Fencing, Light Poles - Repair/Paint	\$5,464
2024 Total		\$17,502
2024	Pool House Drinking Fountain - Replace	\$1,970
2024	Pool House Roof - Replace	\$9,904
2024	Swimming Pool Cover - Replace	\$5,628
2025 Total		\$50,391
2025	Amenity Area Parking Lot - 1-1/2" Overlay	\$23,148
2025	Landscaping - Upgrade/Remove Trees, Shrubs/Trim	\$17,389
2025	Playground - Repair/Partial Replace Equipment	\$580
2025	Pool House Bathrooms - Upgrade	\$9,274
2026 Total		\$7,164
2026	Amenity Area Concrete - Repair/Replace Cracked, Settled S	\$2,985
2026	Basketball Court - Sealcoat/Restripe/Repair	\$597
2026	Swimming Pool Deck - Repair/Seal Cracks	\$3,582

2027 Total	\$14,805
2027 Amenity Area Parking Lot - Sealcoat/Restripe/Repair	\$2,506
2027 Swimming Pool Furniture - Partial Replacement	\$12,299
2028 Total	\$108,942
2028 Common Area Accent Lighting - Repair/Partial Replace Fixtu	\$1,900
2028 Drainage/Slope Erosion/Storm System - Repair/Maintain	\$6,334
2028 Swimming Pool Fence/Gate - Repair/Paint	\$3,800
2028 Tennis Courts - Replace Surface/Fence	\$88,674
2028 Tennis Courts 1 & 2 - Resurface (Crack Repair)	\$8,234
2029 Total	\$7,829
2029 Amenity Area Chain-Link Fence - Repair/Partial Replace/Pai	\$3,914
2029 Entry Monuments/Signage/Fencing - Repair/Clean/Tuck Poir	\$2,610
2029 Tennis Courts Equipment - Replace	\$1,305
2030 Total	\$46,500
2030 Basketball Goal - Paint/Replace Board	\$806
2030 Landscaping - Upgrade/Remove Trees, Shrubs/Trim	\$20,159
2030 Pool House Balcony/Railing/Stairs - Repair/Stain/Paint	\$6,720
2030 Security System - Upgrade	\$1,344
2030 Swimming Pool Equipment - Replace Pumps/Motors	\$4,032
2030 Swimming Pool Filtration System - Replace Filters	\$2,688
2030 Swimming Pool Wood Deck - Partial Replacement/Repair	\$10,751
2031 Total	\$44,988
2031 Playground - Repair/Partial Replace Equipment	\$692
2031 Pool House Electrical Fixtures - Partial Repl.	\$2,076
2031 Pool House Exterior Finishes - Repair/Paint/Seal/Caulk	\$5,537
2031 Pool House Plumbing & Fixtures - Partial Repl.	\$2,076
2031 Swimming Pool Surface - Resurface/Rep. Tiles	\$34,606
2032 Total	\$22,812
2032 Amenity Area Concrete - Repair/Replace Cracked, Settled S	\$3,564
2032 Basketball Court - Sealcoat/Restripe/Repair	\$713
2032 Swimming Pool Deck - Repair/Seal Cracks	\$4,277
2032 Swimming Pool Furniture - Partial Replacement	\$14,258
2033 Total	\$11,216
2033 Amenity Area Parking Lot - Sealcoat/Restripe/Repair	\$2,992
2033 Pool House Bathrooms - Repair/Paint	\$881
2033 Tennis Cts Fencing, Light Poles - Repair/Paint	\$7,343
2034 Total	\$7,563
2034 Swimming Pool Cover - Replace	\$7,563
2035 Total	\$51,413
2035 Common Area Accent Lighting - Repair/Partial Replace Fixtu	\$2,337
2035 Drainage/Slope Erosion/Storm System - Repair/Maintain	\$7,790
2035 Landscaping - Upgrade/Remove Trees, Shrubs/Trim	\$23,370
2035 Pool House Water Heater - Replace	\$7,790
2035 Tennis Courts 1 & 2 - Resurface (Crack Repair)	\$10,127
2036 Total	\$6,419
2036 Swimming Pool Fence/Gate - Repair/Paint	\$4,814
2036 Tennis Courts Equipment - Replace	\$1,605
2037 Total	\$30,578
2037 Amenity Area Chain-Link Fence - Repair/Partial Replace/Pai	\$4,959

2037 Entry Monuments/Signage/Fencing - Repair/Clean/Tuck Poir	\$3,306
2037 Playground - Repair/Partial Replace Equipment	\$826
2037 Pool House Furniture - Partial Replacement	\$4,959
2037 Swimming Pool Furniture - Partial Replacement	\$16,528
2038 Total	\$20,429
2038 Amenity Area Concrete - Repair/Replace Cracked, Settled S	\$4,256
2038 Basketball Court - Sealcoat/Restripe/Repair	\$851
2038 Security System - Upgrade	\$1,702
2038 Swimming Pool Deck - Repair/Seal Cracks	\$5,107
2038 Swimming Pool Equipment - Replace Pumps/Motors	\$5,107
2038 Swimming Pool Filtration System - Replace Filters	\$3,405
2039 Total	\$26,105
2039 Amenity Area Parking Lot - Sealcoat/Restripe/Repair	\$3,573
2039 Playground - Replace Equipment	\$7,189
2039 Pool House Drinking Fountain - Replace	\$3,069
2039 Pool House Electrical Fixtures - Partial Repl.	\$2,630
2039 Pool House Exterior Finishes - Repair/Paint/Seal/Caulk	\$7,014
2039 Pool House Plumbing & Fixtures - Partial Repl.	\$2,630

E. NOTES

The accompanying notes are an integral part of the reserve schedule contained in this report. When reviewing the schedule, please be sure to read all notes pertaining to a particular line item. This will provide the most complete explanation of each line item and will provide any clarification where necessary.

1. These items were found to be in good condition and well maintained. The useful life reflects the age and overall condition of the respective item.
2. **Parking Lot** – The parking lot at the amenity area appears to consist of a graded aggregate base, asphalt base course, and asphalt surface course. From our review, the asphalt pavement appeared to be in fair condition and experiencing normal wear and tear for the age of the asphalt. It should be noted that we did observe multiple linear and “alligatored” cracks at sections of the asphalt (reference photographs 1 & 2).

In order to prolong the useful life of the asphalt pavement, we recommend that the cracks be filled, and the pavement be sealcoated and striped every six to eight years. The useful life of asphalt pavement is approximately 20 years, after which, a new layer of asphalt should be installed. Prior to overlay, any settled areas should be removed, the base then re-compacted, and a new layer of asphalt course installed. It is recommended that a budget be allocated for the resurfacing of the asphalt with a 1-1/2" overlay every 20 years. We recommend that the asphalt surface be inspected approximately every ten years to determine if the condition of asphalt is adequate and if the useful life can be prolonged.

3. **Amenity Area Concrete** – There is a section of concrete that continues off of the amenity area parking lot into the amenity area connecting to the pool house, pool, and basketball court. From our review, the concrete appeared to be in poor condition with multiple large linear cracks and settled sections of concrete (reference photographs 3 & 4). The cracks and settlement appear to be the result of poorly compacted soils when the concrete was installed and possibly poor drainage.

Any sections of concrete that are settling should be monitored, and if they continue to settle, these sections should be replaced. We have provided a budget for the replacement of damaged, deteriorated, or settled sections of the concrete at the property. The budgets are provided every six years and the funding can be used when necessary, during the estimated useful life. The budgets are not for complete replacement of the concrete, only replacement of the sections that become trip hazards or safety concerns. Any vertical displacement at cracks that could potentially represent a trip hazard and liability should be replaced.

4. **Entry Monuments/Signage/Fencing** – The entry monuments and signage are located at the entrance to the property. The monuments consist of a brick veneer monument with painted inset signage. Along the sides of the monument are painted wood, ranch-style fencing. From our review, the entry monuments and signage appeared to be in generally good condition. We observed mildew and efflorescence at the brick monuments and should be pressure washed (reference photograph 5). The adjacent wood fencing was in fair condition; however, some of the horizontal members are rotating off the joist hangers and should be repaired (reference photograph 6).

Any mildew growth on the monuments and grout joints may be power washed as part of regular maintenance for a better appearance. It is recommended that \$2,000 be allocated for the repair, cleaning, and tuck pointing of the entry monuments, signage, and entry fencing approximately every eight years.

5. **Landscaping** - The landscaping at the common areas consists of small and large trees, shrubs, and common landscaped areas. From our review, the common area landscaping appeared to be in fair condition; however, we observed multiple exposed roots and sections of the basketball court that are being uprooted by the trees (reference photographs 7 & 8). If the trees and roots are not removed, the trees can continue to impact the structural integrity of nearby structures and materials. The appearance of the community is very subjective, as is the allocation of funds for the upgrade of the landscape materials. From our experience with similar communities, upgrading of the community landscaping is typically done every five years.

A budget of \$15,000 has been allocated for the replacement of any uprooting,

damaged or diseased shrubs and trees, trimming of trees, and upgrading of the landscaping every five years. This is not designed for yearly or routine landscaping or annual flower installation. All trees that are located within 10' of a structure should be removed or monitored to prevent any damage.

6. **Drainage** - The drainage at the property generally consists of surface flow to drain inlets and grassed swales located at the common landscaped areas. From our review, the overall drainage at the amenity area appeared to be functioning fairly; however, we did observe areas where there is dead grass, exposed soil, ponding water, and minor erosion as a result of poor drainage (reference photographs 9-11). Remediation of the erosion is necessary in order to prevent further erosion and damage to the surrounding landscape or structures. All drainage structures should be cleared to allow for proper water flow.

All areas that appear to have poor drainage, it is recommended that swales and river rock be installed to improve the surface flow of water, as needed. It should be noted that it is possible to install French drains in landscaped areas to further improve the drainage. A budget of \$5,000 has been allotted for the maintenance and repair of the stormwater drainage every seven years. The budget for the drainage may decrease over time as a result of proper maintenance.

7. **Amenity Area Fencing** – The amenity area fencing at the property consists of a perimeter, painted chain link fence. From our review, the fence was in poor condition with chipped paint and damaged sections of the fence observed (reference photograph 12). It should be noted that the chain link fencing is not a structural member and is for aesthetic purposes only.

It is recommended that \$3,000 be allotted for the repair, painting, and partial replacement of the amenity area fencing approximately every eight years.

8. **Swimming Pool/Deck/Equipment** - The swimming pool consists of an in-ground concrete pool with plaster finish. The pool deck consists of a concrete slab-on-grade and is surrounded by a pre-finished metal picket fence. Along the perimeter of the pool deck is a wood-framed deck. From our review, we observed the following conditions at the swimming pool area:

- The pool deck is exhibiting normal linear cracks typical caused by expansion and contraction of the concrete; however, it is recommended that these cracks be sealed and monitored for any movement (reference photograph 13).
- There are sections of the fencing that are damaged and/or are leaning (reference photographs 14 & 15).
- The biggest issue we observed is the condition of the wood decking. It appears that as a result of a combination of poor drainage, the installation of non-pressurized wood members, and poorly constructed members, there are multiple sections that are deteriorated and/or are failing (reference photographs 16-18). Based on our observation, sections of the decking are structurally unsound and should be repaired or replaced as soon as possible.

Following are the estimated useful lives of the components of the swimming pool:

<i>Swimming Pool Surface – Resurface/Replace Tiles</i>	<i>Every 8-10 years</i>
<i>Swimming Pool Deck – Repair/Seal Cracks</i>	<i>Every 5-6 years</i>
<i>Swimming Pool Wood Deck – Partial Replacement/Repair</i>	<i>Every 8-10 years</i>
<i>Swimming Pool Furniture – Partial Replacement</i>	<i>Every 4-5 years</i>
<i>Swimming Pool Fence/Gate – Repair/Paint</i>	<i>Every 7-8 years</i>
<i>Swimming Pool Cover - Replace</i>	<i>Every 9-10 years</i>
<i>Swimming Pool Equipment – Replace Pumps/Motors</i>	<i>Every 7-8 years</i>
<i>Swimming Pool Filtration System – Replace Filters</i>	<i>Every 7-8 years</i>

We have provided budgets for each of the referenced items above and have included them in the reserve.

9. **Tennis Courts** – There are two tennis courts at the amenity area. The tennis courts at the property consist of two hard-surfaced, lighted tennis courts

surrounded by a metal chain link fence. From our review, the tennis courts appeared to be in poor condition with multiple linear cracks that were patched, and ponding water observed (reference photograph 19). Based on the condition of the tennis court surface, it appears that the tennis courts are reaching the end of their useful life and should be replaced; however, as a result of current funding, resurfacing of the tennis courts should be completed first until a budget has been accumulated to replace both of the tennis courts and fencing.

Following is the estimated useful life of the components of the tennis courts.

Tennis Courts 1 & 2 – Resurface (Crack Repair)..... Every 4-5 years
Tennis Courts– Replace Surface/Fence..... Every 20-25 years
Tennis Courts Fencing/Benches/Light Poles – Repair/Paint Every 9-10 years
Tennis Courts Equipment – Replace..... Every 6-7 years

We have provided budgets for each of the referenced items above and have included them in the reserve.

10. **Basketball Court** – The basketball court consists of a hard-surfaced court surrounded by a metal chain link fence. From our review, the basketball court was in poor condition with multiple cracked and settled sections observed (reference photograph 20). The Association may consider replacing or removing the court in the near future. The condition of the chain link fence was also in poor condition with chipped paint and damaged sections observed (reference photograph 21). It should also be noted that there is currently no goal at the basketball court.

A budget of \$600 should be allotted for the painting and replacement of the basketball goal every nine to ten years. It is recommended that \$500 be allotted for the sealcoating, restriping, and repair of the court surface approximately every six years. It is also recommended that \$30,000 be allotted for the replacement of court surface and fencing every 20-25 years. If the Association decides to remove the court, all funding for the basketball court should be removed.

11. **Playground** – The playground equipment is located at the amenity area, adjacent to the pool deck. The playground equipment consists of a wood-framed structure with polyethylene equipment and slides, as well as a swing structure. It is our understanding that the equipment was replaced in 2019. From our review, the playground equipment appears to be in generally good condition with no remedial work required at this time (reference photograph 22). The border of the playground is deteriorated and should be replaced (reference photograph 23).

It is recommended that \$500 be allotted for the repair and partial replacement of the playground equipment every six years. It is also recommended that \$4,100 be allotted for the replacement of the playground equipment every 20 years. We also allotted a budget of \$2,500 for the one-time replacement of the playground border.

12. **Pool House** - The pool house is a one-story, wood-framed structure that is constructed over a basement which bears on a cast-in-place concrete slab-on-grade. The basement of the pool house contains the mechanical and pool equipment room. The main level contains an overhanging pavilion, Men's and Women's restrooms. The exterior finishes consist of painted wood siding, casting trim, soffit, and fascia with steel columns and railing. The roof is a moderately steep-sloped roof system with composition asphalt shingles (reference photograph 24).

From our review, the pool house and all components appeared to be in fair condition for their age; however, we did observe the following deficiencies:

- There are small linear cracks at the concrete slab at the pool house (reference photograph 25). The cracks do not appear to be severe; however, they should be patched and sealed and monitored for any movement.
- The base of the steel columns at the pavilion section of the pool house are corroded (reference photograph 26). If not remediated, the corrosion of the columns can increase and result in the failure of the column.

- There is ponding water in front of the restrooms (reference photograph 27). This appears to be the result of poorly sloped concrete that does not allow water to drain away from the building. A self-leveling concrete should be applied to drain storm water to flow away from the restroom corridor.
- The railing at the wood-staircase should be pressure washed and painted (reference photograph 28).

The following are the estimated useful lives of the Pool House's components:

<i>Pool House Roof – Replace</i>	<i>Every 20-25 years</i>
<i>Pool House Ext. Surfaces – Rep./Paint/Seal/Caulk.....</i>	<i>Every 8-10 years</i>
<i>Pool House Bathrooms – Repair/Paint.....</i>	<i>Every 10-12 years</i>
<i>Pool House Bathrooms – Upgrade.....</i>	<i>Every 18-20 years</i>
<i>Pool House Furnishings – Partial Replacement</i>	<i>Every 12-15 years</i>
<i>Pool House Balcony/Railing/Stairs – Repair/Stain/Paint</i>	<i>Every 9-10 years</i>
<i>Pool House Electrical Fixtures – Partial Repl.....</i>	<i>Every 7-8 years</i>
<i>Pool House Plumbing Fixtures – Partial Repl.....</i>	<i>Every 7-8 years</i>
<i>Pool House Water Heater – Replace.....</i>	<i>Every 10-12 years</i>
<i>Pool House Drinking Fountain – Replace.....</i>	<i>Every 12-15 years</i>

We have provided budgets for each of the referenced items above and have included them in the reserve.

13. **Security System** – The security system is located at the pool house and pool and is provided by security cameras.

It is recommended that \$1,000 be allotted for the upgrading of the security system every eight years.

14. **Lighting** - The lighting at the property consists of small accent lighting along the entry monuments. From our review, the accent lighting appeared to be operating properly and in good condition. Typically, this type of lighting has a useful life of

10 to 15 years with proper maintenance.

It is recommended that \$1,500 be allotted for the repair and partial replacement of the accent lighting fixtures every six to seven years.

II. RESERVE CASH FLOW ANALYSIS

A. INTRODUCTION

The enclosed chart and graph contain a 20-year cash flow projection of the reserve requirements for the Association. The budget should be adjusted at the end of the 20-year period to readjust for changes in remaining life, inflation, and current costs of replacements. This cash flow analysis is based on the assumption that all of the items that make up the schedule are fully funded. By this, we mean that each item will accumulate its full replacement cost during its life span. At the end of this life, each item would be replaced, and the funding would start aging for items with a long life. For items with a short useful life, the funding for the first replacement is budgeted in addition to future replacements due to the short life span. The future replacement funding is started in the first year; however, payments are less than the first replacement due to the extended time period allowed to accumulate funds. Taking all of the components that make up the reserve schedule, using this full funding analysis, there is typically an ongoing surplus in the reserve fund. This ensures that the Association will have a surplus at the end of the 10-year period. This is called the “pooling effect” and is represented by the upper line on the cash flow chart, which is designated as the “Net Cumulative Fund.” The “Net Cumulative Fund” is calculated by taking the existing amount in the reserve fund at the time the reserve schedule is prepared, adding to it the yearly contribution, and subtracting from it the annual expenditures.

The annual reserve funding required has been calculated by estimating the useful remaining life based on the current condition, age, and all other known factors of each item description. The present value replacement cost was estimated by either past quotations or other listed methods of estimation. The present value replacement cost was then converted to future value using a 3% annual compounded inflation rate. The future cost was calculated for the projected time when replacement will be required.

The future cost was then broken down into annual installments while still considering the 3% compounded annual inflation rate. The monthly reserve funding was calculated by a further breakdown of the annual reserve funding required.

1. Formulas

The following economic formulas were used in our calculations:

DISCOUNTING FACTOR	FUNCTIONAL NOTATION	FORMULA
Single Payment Compound Amount	$(F/P, i \%, n)$	$(1+i)^n$
Uniform Series Sinking Fund	$(A/F, i \%, n)$	$i/[(1+i)^{n-1}]$

2. Definitions

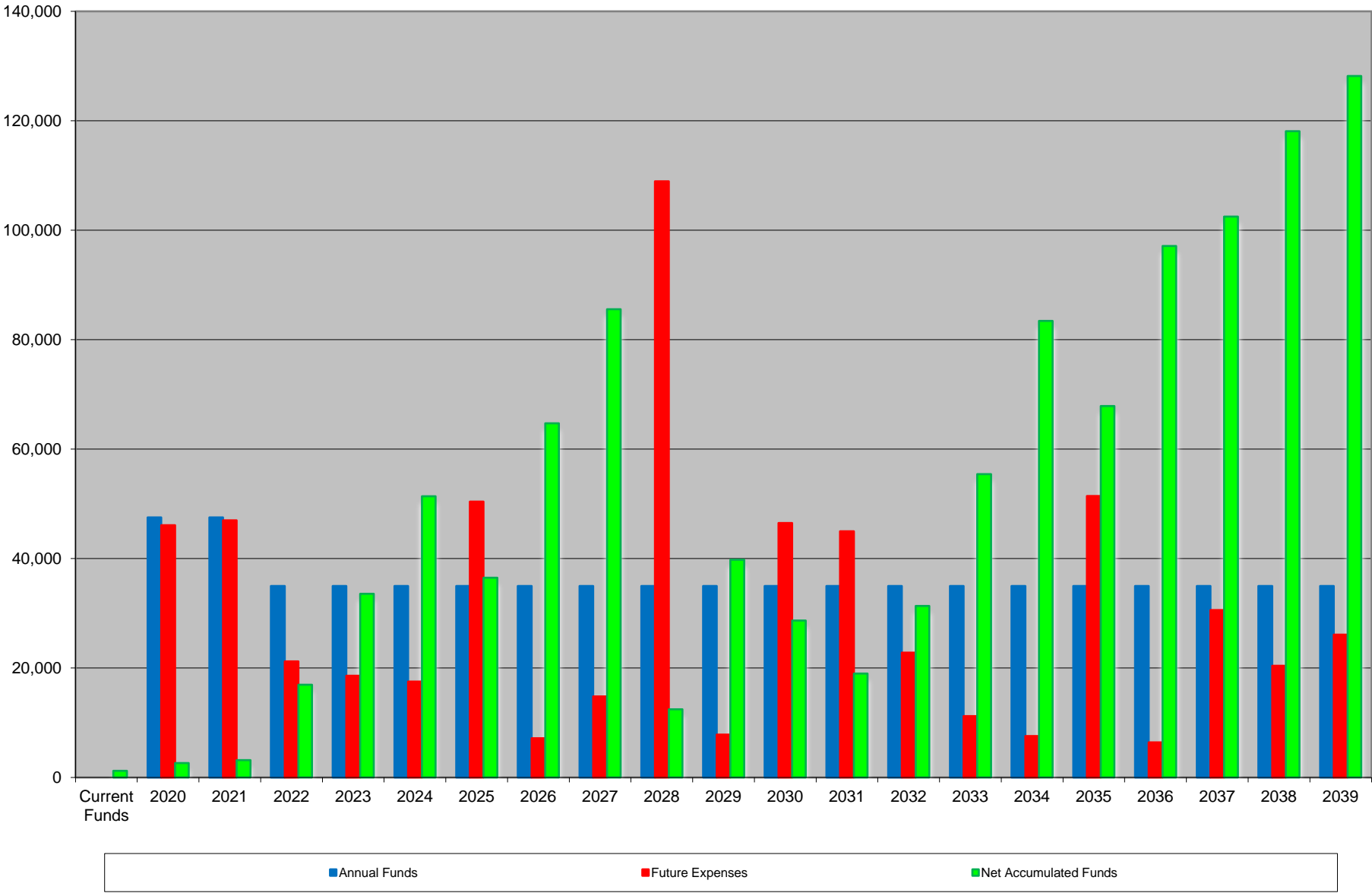
Definitions of the above-mentioned terms are as follows:

TERM	DEFINITION
Single Payment Compound Amount	Conversion of present worth to future value
Uniform Series Sinking Fund	Conversion of future value to annual value
F	Future worth of item in n years from present
P	Present Worth
A	Annual worth
I	Interest Rate (1.00% used)
N	# of years until each calculated replacement

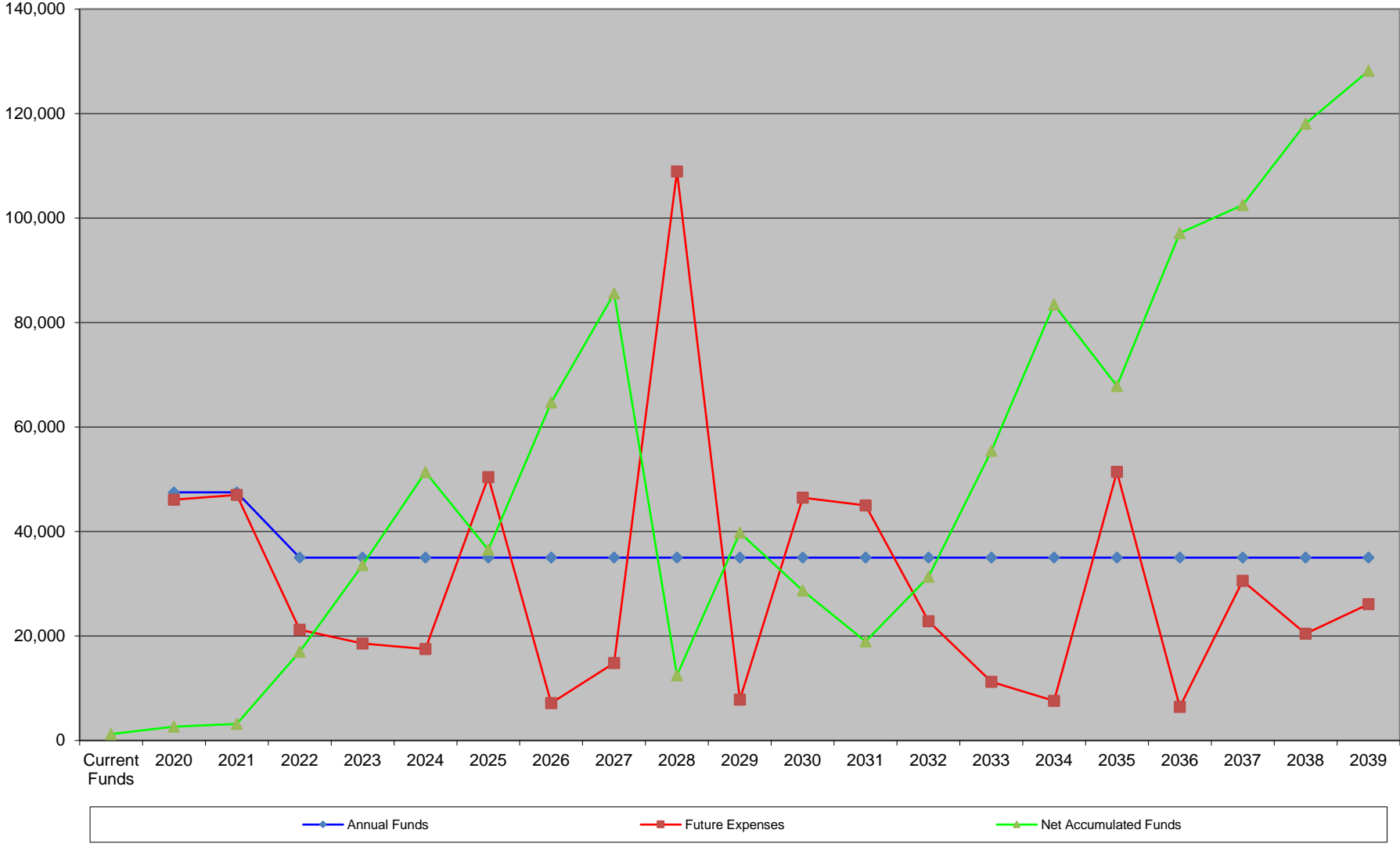
B. PROJECTED CASH FLOW GRAPH AND CHART

The projected cash flow for the Capital Reserve Analysis is illustrated by the bar graph and line chart on the following pages.

BIRCHWOOD - PROJECTED CASH FLOW



BIRCHWOOD - PROJECTED CASH FLOW



C. RECOMMENDATIONS AND CONCLUSIONS

Based on our review, we would make the following recommendations. The Association should set aside the following amount for the specified year into the reserve fund:

COST AND FUNDING RECAP

Year	Annual Funds	Future Expenses	Net Accumulated Funds
Current Funds			\$1,221
2020	\$47,500	\$46,100	\$2,633
2021	\$47,500	\$47,007	\$3,153
2022	\$35,000	\$21,218	\$16,966
2023	\$35,000	\$18,576	\$33,560
2024	\$35,000	\$17,502	\$51,394
2025	\$35,000	\$50,391	\$36,517
2026	\$35,000	\$7,164	\$64,718
2027	\$35,000	\$14,805	\$85,560
2028	\$35,000	\$108,942	\$12,474
2029	\$35,000	\$7,829	\$39,770
2030	\$35,000	\$46,500	\$28,668
2031	\$35,000	\$44,988	\$18,967
2032	\$35,000	\$22,812	\$31,345
2033	\$35,000	\$11,216	\$55,442
2034	\$35,000	\$7,563	\$83,434
2035	\$35,000	\$51,413	\$67,855
2036	\$35,000	\$6,419	\$97,115
2037	\$35,000	\$30,578	\$102,508
2038	\$35,000	\$20,429	\$118,104
2039	\$35,000	\$26,105	\$128,180

The Association should update the reserve schedule a minimum of once every two years. It is especially important to update the schedule when using average contribution due to the fact that even a minor change in the estimated useful life can have a significant impact on adequate funding.

The Association should review each of the individual line items that make up the reserve schedule to make sure that there is no overlap between what is indicated in the schedule and any other portion of the budget. For example, we may show on the reserve schedule the replacement of fencing, but at the same time, the Association may be replacing the fencing out of their operating budget. If duplication like this exists, the item should either be removed from the reserve schedule or the operation budget. It should not be funded in two different locations.

The Association should review the items on the schedule to assure that their replacement is not covered under a maintenance contract. An example would be reserving for the replacement of mechanical equipment components while the Association has a maintenance contract for the item at the same time. The reserve schedule should be carefully reviewed to be sure that it does not fund the replacement of any portion of any item whose replacement is covered under a maintenance contract.

The Association should review the items on the schedule to be sure that they are all the Association's responsibility. As an example, if we have included site lighting on the reserve schedule, but at the same time the local municipality is responsible for the maintenance and repair of these connections, they should be removed from the schedule.

The Association should review the individual line items on the reserve schedule carefully to determine if a number of the smaller individual components can be consolidated into one line item which can be continuously funded.

For example, if there are five or six components with a total replacement cost of \$1,000 each, rather than reserving the full \$5,000 or \$6,000 for all of these items, the Association may want to consider funding all six components under one line item for a total of \$1,000. Should one of these six items have to be replaced, that line item would have to be brought current within a year or so after its expenditure. By doing this rather than

funding the full \$6,000, only a portion of the total would be funded. This would reduce the overall yearly contribution to reserves.

Depending on the size of the overall operating budget, the Association may decide that any line item of less than the given amount will be funded directly through the operating budget rather than through the reserve schedule. If this is the case, any item with the given value or less should be removed from the schedule. The schedule would then be footnoted accordingly.

III. RECOMMENDED MAINTENANCE SCHEDULE

The following guidelines are intended to ensure that a program of preventive maintenance is implemented in order to assure that, as a minimum, the predicted useful lives of the major common elements is attained. A preventive maintenance program is made up of “a system of periodic inspections of existing facilities to uncover conditions leading to breakdown or harmful depreciation and the correction of these conditions while they are still minor.” It should be noted that experience has shown that a proper maintenance program can add 50% to the expected useful life of some items.

In any case, the proper determination of the useful lives of the items which make up your common elements is critical to the proper updating of the reserve schedule. The items included will only attain their anticipated useful lives if a proper maintenance program is implemented. For this reason, it is recommended that the reserve schedule be updated every two years to assure that all items are being properly maintained.

A. ASPHALT PAVEMENT

The early detection and repair of minor defects is the most important consideration in the preventive maintenance of pavements. Cracks and other surface breaks, which in their first stages are almost unnoticeable, may develop into serious defects if not repaired in a timely manner. For this reason, walking inspections of the pavement should be conducted in the fall and spring of each year, as a minimum.

The inspections should note small cracks or other surface breaks in the pavement. In addition, there are other signs, such as mud or water on the pavement surface or soil erosion along the edges of the pavement, which may indicate possible future problem areas.

Most small cracks or surface breaks can be repaired by sealing them with a good commercial-grade caulk. Areas which have settled and pose a possible trip hazard should be cut out and replaced to prevent a potential liability problem, as well as to prevent further deterioration of the surface. If large areas are observed

to be cracking or breaking up, this may be an indication of a problem with the base material and/or subsoils and would require further investigation to determine the cause and proper method of repair.

B. CONCRETE CURBING

Any soil erosion behind the curbing should be noted, and possible problems such as broken pipes, malfunctioning sprinkler heads, and/or improper grading should be investigated, and any necessary repairs made.

C. SIDEWALKS

Sidewalks should be inspected at least twice a year (spring and fall). The inspection should note any cracked sections, uneven settlement between sections (which may result in tripping hazards), and surface damage. Undermining of sidewalks (caused by soil erosion) should also be noted. Proper replacement of any sections with the above noted problems is necessary to eliminate safety hazards and potential liability problems. These repairs will also allow the curbing to achieve its full useful life.

D. STORM DRAINAGE SYSTEMS

All storm drainage systems should be routinely inspected to ensure proper operation. Inspections should be scheduled for all facilities after major storms for routine maintenance. In addition, bi-annual structural inspections should be performed. The following are the recommended maintenance schedules for each individual section of a storm system:

1. Catch Basins

All catch basins should be routinely inspected after a major storm to ensure that they are working properly. During these inspections, any sediment

buildup or debris should be removed from catch basins to ensure that they continue to function properly.

2. Drainage Swales

The five most prevalent maintenance problems with swales are:

- § Weed growth
- § Grass maintenance
- § Sediment control
- § Soil deterioration
- § Mosquito control

Drainage swales should be inspected on a routine basis to ensure that they are functioning properly. The grass located within the swales should be mowed on a weekly basis to prevent the accumulation of debris, which may impede the flow of the drainage. The trash racks attached to the outlet structures should be periodically checked and cleaned of debris to prevent blockage. The outlet structures should also be checked for deterioration and/or cracking of concrete.

E. LANDSCAPING

A discussion regarding the preventive maintenance of the landscaped areas of the development would require an entire report. For this reason, it is recommended that a professional service specializing in this area be consulted. It should be noted that landscaping is not included as a reserve schedule item since, with proper maintenance, large-scale replacement should not become necessary.

F. CROSS-TIE WALLS

Retaining wall surfaces should be inspected every spring as part of a preventive maintenance program. Areas should be checked for signs of major cracking,

splitting, and warping. The retaining walls should be checked for soil erosion behind the retaining wall and undermining of the footings.

G. CONCRETE RETAINING WALLS

Retaining wall surfaces should be inspected every spring as part of a preventive maintenance program. Areas should be checked for signs of cracking or spalling of the concrete surface and staining from moisture migrating through the wall. Additionally, the walls should be checked for soil erosion and/or voids forming at the tops and bases of the walls. Small cracks and spalled areas should be cleaned, caulked, or patched and touched up with paint, if applicable. Wide cracks may be an indication of possible movement and should be reviewed by a structural engineer. Seepage is not uncommon at retaining walls and often results in staining of the wall. In many cases, caulking of the cracks where seepage occurs is all that is required to remedy the problem; however, if it continues after caulking, it may be an indication of a problem, such as excessive hydrostatic pressure, and should again be reviewed by an engineer.

H. LAWN SPRINKLER SYSTEM

The preventive maintenance of the lawn sprinkler system would require an extensive report concerning the operation and servicing of the control valve, pumps, sprinkler heads, and water lines. For this reason, it is recommended that a professional sprinkler system contractor be consulted to provide the necessary services to properly maintain the sprinkler system.

I. WOODEN FENCES AND OTHER WOODEN SITE FURNISHINGS

Wooden fences constructed of treated lumber should last a number of years with minimal maintenance. However, these items should be checked at least once a year to ensure that excessive weathering is not occurring. If excessive weathering is occurring, deteriorated members should be replaced, and the entire item should

be treated with a preservative material.

Wooden site furnishings constructed of non-treated lumber should be regarded the same as exterior trim. Periodic application of a sealant to all surfaces is vital to preserve the wood. These items should be checked at least once a year to detect any peeling or deterioration. Deteriorated members should be replaced at this time, and resealing should be done, as necessary.

J. TOT LOTS

Tot lots should be looked at a minimum of twice a year, with one inspection in the spring and one in the fall. Any splintering or cracking wood should be repaired or replaced as necessary to prevent any injury. Exposed bolts must not have sharp edges. The bolts should not be protruding excessively so as to cause unnecessary injuries.

K. ROOFS • PITCHED

The standard asphalt/fiberglass shingles available on the market today have an expected useful life of approximately 20 years. Proper maintenance in order to achieve this useful life requires periodic inspections to detect the need for repair or changes in the roof surface. In order to reduce maintenance and replacement costs, it is vital to detect problems when they are minor and prevent them from escalating into major problems.

Roof inspections should be conducted at least twice a year. These inspections should preferably occur in the early fall to prepare for winter and in the spring to assess any winter damage and prepare for the hot summer sun. In addition to these seasonal inspections, the roofs should be carefully checked after violent rain or windstorms or nearby fires or after workmen have been on the roof.

The roof inspections should include:

- § Examination of exterior walls for settlement.
- § Checking interior walls and the underside of roofs for leakage. This is necessary since the majority of roof problems may not be detected by inspecting the outside roof surface.
- § Inspection of the roof surface for missing, loose, lifted, cracked, or deteriorated shingles.
- § A review of the roof drainage, including any change in the roof and the condition and operation of roof drains, gutters, and scuppers.
- § Examination of flashed areas. Most water infiltration problems are caused by flashing defects. Lifted, loose, torn, or missing flashing require immediate repair.
- § A review of ventilation since improper ventilation can cause ice damming conditions and accelerates the deterioration of the roof shingle.

L. GUTTERS AND DOWNSPOUTS

The key to maintaining gutters and downspouts is to make sure they are kept clear of debris. A buildup of leaves and other plant material will block downspouts and prevent proper drainage. If this occurs, trapped water could weigh down the gutters and cause them to loosen or fall. Blocked gutters will also overflow along their length, resulting in the washing away of the mulch and/or soils adjacent to the sides of a building, which could result in premature deterioration of a building's exterior finish over time. Ice damming will also be evident in the winter if gutters are not able to drain.

At least twice a year, the gutters should be cleaned and inspected for damage. This should be done in late spring and late fall. Any loose or misaligned gutters should be corrected at this time to prevent further damage. Splash blocks and downspout extension pipes should also be adjusted to prevent erosion and to direct water away from the building.

As the gutters age, the paint coating will oxidize and dull. When this occurs, an

aluminum paint product should be used to restore the finish, or the gutters should be power washed to prevent deterioration.

M. STEEL STAIRS, RAILINGS, AND POSTS

All steel components should be inspected on a yearly basis for corrosion or damage. Any excessive corrosion should be addressed as soon as possible by wire brushing to remove all rust and scale, spot priming, and painting as needed. Of special concern are the steel and metal pan stairs. Moisture has a tendency to become trapped between the concrete in-fill of the treads and the metal support pans, resulting in rusting that occur from the inside out. Since this condition is not visible, considerable damage can be done before a problem is realized. We recommend cleaning visible rust off of the stair components and priming and painting the affected areas. Additionally, we recommend cleaning and sealing the concrete of the treads and caulking all of the joints between the steel and concrete interfaces to prevent moisture intrusion.

Note: Salts used to eliminate ice on stairs during winter months can cause concrete and steel to deteriorate prematurely. Only products rated safe for use on concrete and steel should be applied for de-icing purposes.

N. BALCONIES/DECKS

Deck surfaces should be inspected every spring as part of a preventive maintenance program. Areas should be checked for signs of major cracking. Railings and handrails should be inspected for signs of damage. They should also be checked to ensure that they are still sturdy and safe.

O. WOOD RAILINGS

All exterior wood surfaces should be inspected every spring as part of a preventive maintenance program. Areas should be checked for signs of major

cracking, splitting, and warping. Railings and handrails should be inspected for signs of damage. They should also be checked to ensure that they are still sturdy and safe.

P. SIDING

The proper maintenance of siding is critical to the effort to keep buildings weather-tight. Properly maintained, siding should last indefinitely. Siding should be regularly inspected for damage caused by gardening equipment, shrubs and tree limbs, improper attachments, abnormal wind conditions, and ice formation. Damaged, missing, or loose siding and trim should be replaced immediately. Lack of maintenance can result in water infiltration problems, as well as a poor appearance.

To maintain appearance and color, siding and trim should be pressure washed on a 3-4 year schedule depending on local conditions.

Q. BRICK VENEER

Brick veneer is subject to cracking and loosening from a variety of environmental and construction causes. Veneers on all buildings should be thoroughly inspected in early spring and late fall. The inspections should include checking for chipped, loose, cracked, deteriorated, and missing bricks. Cracked and missing bricks should be replaced. Cracked mortar should be repointed and caulked at intersections. Other surfaces should be repaired where necessary. Any evidence of moisture on an interior wall surface may indicate water absorption through the brick veneer. This condition may be corrected by applying a sealant to the exterior brick face.

Excessive settlement of the foundation may be evidenced by open cracks, especially around window and doorframes. Significant amounts of loose brick or bulging wall areas may indicate structural deficiencies or that large amounts of differential settlement have taken place at the foundation. These conditions should be investigated by a professional and the appropriate action taken to

correct uncovered problems.

R. MECHANICAL EQUIPMENT

A well-established plan of preventive maintenance is essential to obtaining the maximum performance and life from your mechanical equipment. All work should be performed by qualified technicians specializing in the particular equipment.

The following guidelines are considered to be minimal procedures for maintaining the equipment:

1. WATER HEATERS

The area near the water heater should be kept free of flammable liquids, such as gasoline, paint thinners, adhesives, and other combustible materials. Make certain that the flow of air to the water heater for adequate combustion (proper burner operation) and ventilation is not obstructed.

A water heater's tank can act as a settling basin for solids suspended in the water. It is, therefore, not uncommon for hard water deposits to accumulate in the bottom of the tank. It is suggested that a few quarts of water be drained from the water heater's tank every month to prevent this condition from occurring.

At least once a year, lift and release the level handle on the temperature pressure relief valve (located near the top of the water heater) to make certain that the valve operates freely, and allow several gallons to flush through discharge lines. Make certain that the discharge is directed to an open drain.

Visually inspect the burner annually, while firing, and pilot burner flame with the main burner off. If any unusual burner operation is noted, the

water heater should be shut off until professional service assistance can be obtained.

The water heater's internal flue should be inspected annually to be certain that it is clean by removing the draft hood and flue baffle. When reinstalling the flue baffle, make certain that it is hung securely by its hanger at the top of the flue. Remove any scale that may have fallen on the burner or flood shield. Reinstall the draft hood. It is recommended that a professional service be consulted for this procedure.

DISCLOSURES

Ray Engineering, Inc. does not have any other involvement with the association, which could result in actual or perceived conflicts of interest.

During our review of the property, visual review, and field measurements, as needed, of each common element was performed. No destructive testing or drawing take-offs were performed.

Material issues which, if not disclosed, would cause a distortion of the association's situation.

Information provided by the official representative of the association regarding financial, physical, quantity, or historical issues will be deemed reliable by the consultant.

The Reserve Analysis will be a reflection of information provided to the consultant and assembled for the association's use, not for the purpose of performing an audit, quality/forensic analyses, or background checks of historical records.

Ray Engineering, Inc. did not perform an audit of the current or past budgets of the association.

Information provided to Ray Engineering, Inc. by the association representative about reserve projects will be considered reliable. Any on-site inspection(s) by Ray Engineering, Inc. should not be considered a project audit or quality inspection.

BIOGRAPHY

ROBERT “NICKO” ROMEO, R.S.

PROJECT ENGINEER

Mr. Romeo has a Bachelor of Science in Mechanical Engineering Technology, Southern Polytechnic State University, Marietta, Georgia, 2016. Mr. Romeo started his internship with Ray Engineering in 2015 through 2017. In 2017, upon obtaining his Bachelor of Science Degree in Mechanical Engineering, he obtained employment as a Project Engineer at Ray Engineering. Mr. Romeo provides consulting services for civil/structural and construction related problems for various condominium, apartment, single-family, residential, and commercial properties, as well as design and specifications for restoration of deficiencies. Mr. Romeo has four years of experience in the preparation of Capital Reserve Analyses.

LIMITATION OF RESPONSIBILITY

The report represents a statement of the physical condition of the common elements of the property based upon our visual observation, professional analysis, and judgment. The report applies only to those portions of the property and/or items and equipment which were capable of being visually observed. Unless specifically stated otherwise, no intrusive testing was performed nor were any materials removed or excavations made for further inspection. Drawings and specifications were available only to the extent described in the report.

The following activities are not included in the scope and are excluded from the scope of the reserve analysis described in the National Reserve Study Standards:

- § *Utilities* – Operating condition of any underground system or infrastructure; accessing manholes or utility pits; the reserve analysis does not include any infrastructure with an estimated useful life of more than 30 years, unless specified otherwise in the report;
- § *Structural Frame and Building Envelope* – Unless specifically defined in the proposal, entering of crawl, attic or confined space areas (however, the field observer will observe conditions to the extent easily visible from the point of access to the crawl or confined space if the access is at the exterior of the building or common space); determination of previous substructure flooding or water penetration unless easily visible or unless such information is provided;
- § *Roofs* – Walking on pitched roofs or any roof areas that appear to be unsafe or roofs with no built-in access; determining roofing design criteria;
- § *Plumbing* – Verifying the condition of any pipes underground, behind walls or ceilings; determining adequate pressure and flow rate, verifying pipe size, or verifying the point of discharge for underground systems;
- § *HVAC* – Observation of fire connections, interiors of chimneys, flues or boiler stacks, or tenant owned, or tenant maintained equipment;
- § *Electrical* – Removal of any electrical panels or device covers, except if removed by building staff; providing common equipment or tenant owned equipment.

- § *Vertical Transportation* – Examining of cable, shears, controllers, motors, inspection tags or entering elevator/escalator pits;
- § *Life Safety/Fire Protection* – Determining NFPA hazard classifications; classifying or testing fire rating of assemblies;
- § Preparing engineering calculations to determine any system's components or equipment's adequacy or compliance with any specific or commonly accepted design requirements or building codes; preparing designs or specifications to remedy any physical deficiencies;
- § Reporting on the presence or absence of pests or insects unless evidence of such presence is readily apparent during the field observer's walk-through survey or such information is provided to the Consultant;
- § Entering or accessing any area of the property deemed by the engineer to pose a threat to the safety of any individual or to the integrity of the building system or material;
- § Providing an opinion on the operation of any system or component that is shut down or not properly operating;
- § Evaluating any acoustical or insulating characteristics of the property;
- § Providing an opinion on matters regarding security and protection of its occupants or users;
- § Providing an environmental assessment or opinion of the presence of any environmental issues such as asbestos, hazardous wastes, toxic materials, radon, or the location of designated wetlands, unless specifically defined within the scope of work;
- § Any representations regarding the status of ADA Title III Compliance.

The report is not a compliance inspection or certification for past or present governmental codes or regulations of any kind. Any reference made to codes in this report is to assist in identification of a specific problem.

GLOSSARY OF TERMS

<u>Abbreviation</u>	<u>Definition</u>	<u>Abbreviation</u>	<u>Definition</u>
Allow.	Allowance	L.F.	Linear Foot
Avg.	Average	Lg.	Long Length
B.F.	Board Feet	L.S.	Lump Sum
Bit/Bitum.	Bituminous	Maint.	Maintenance
Bldg.	Building	Mat., Mat'l	Material
Brk.	Brick	Max	Maximum
Cal	Calculated	MBF	Thousand Board Feet
C.C.F.	Hundred Cubic Feet	M.C.F.	Thousand Cubic Feet
C.F.	Cubic Feet	Min.	Minimum
C.L.F.	Hundred Linear Feet	Misc.	Miscellaneous
Col.	Column	M.L.F.	Thousand Linear Feet
Conc.	Concrete	M.S.F.	Thousand Square Feet
Cont.	Continuous, continued	M.S.Y.	Thousand Square Yards
C.S.F.	Hundred Square Feet	NA	Not applicable/available
Cu. Ft.	Cubic Feet	No.	Number
C.Y.	Cubic Yard, 27 cubic feet	O.C.	On Center
DHW	Domestic Hot Water	P.E.	Professional Engineer
Diam.	Diameter	Ply.	Plywood
Ea.	Each	Pr.	Pair
Est.	Estimated	PVC	Polyvinyl Chloride
Ext.	Exterior	Pvmt.	Pavement
Fig.	Figure	Quan. Qty.	Quantity
Fin.	Finished	R.C.P.	Reinforced Concrete Pipe
Fixt	Fixture	Reinf.	Reinforced
Flr.	Floor	Req'd	Required
FRP	Fiberglass Reinforced Plastic	Sch., Sched.	Schedule
Ft.	Foot, Feet	S.F.	Square Foot
Galv.	Galvanized	Sq.	Square, 100 Square Feet
Ht.	Height	Std.	Standard
Htrs.	Heaters	Sys.	System
HVAC	Heating, Ventilation, A/C	S.Y.	Square Yard
HW	Hot Water	T&G	Tongue & Groove
In.	Inch	Th, Thk.	Thick
Int.	Interior	Tot.	Total
Inst.	Installation	Unfin.	Unfinished
Insul.	Insulation	V.C.T.	Vinyl Composition Tile
lb.	Pound	Vent.	Ventilator
		Yd.	Yard

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Open Shop Cost Data
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PHOTOGRAPHS

BIRCHWOOD



1. View of linear cracks at the amenity area parking lot.



2. View of linear cracks at the amenity area parking lot.



3. View of cracked and settled section of the concrete.



4. View of cracked and settled section of the concrete.

BIRCHWOOD



5. View of a typical entry monument and signage.



6. View of typical entry fence. Note the rotating horizontal members.

BIRCHWOOD



7. View of large exposed tree roots at the amenity area.



8. View of tree roots damaging a section of the basketball court.

BIRCHWOOD



9. View of ponding water between the amenity area concrete and basketball court.



10. View of voids beneath the concrete pool deck as a result of poor drainage.

BIRCHWOOD



11. View of poor drainage adjacent to the tennis court.



12. View of typical section of chain link fence that has chipped paint and is damaged.

BIRCHWOOD



13. View of typical linear cracks at the pool deck.



14. View of leaning section of the pool fence.

BIRCHWOOD



15. View of damaged section of the pool fence.



16. View of deteriorated band and 4x4 column at a section of the wood-framed pool deck.



17. View of deteriorated band at the wood-framed pool deck.



18. View of failing section of the wood-framed pool deck that should be replaced.

BIRCHWOOD



19. View of ponding water and cracks at the tennis courts.



20. View of multiple cracks and settled sections of the basketball court.

BIRCHWOOD



21. View of damaged section of the chain link fence at the basketball court.



22. View of playground equipment.

BIRCHWOOD



23. View of deteriorated playground border.



24. View of pool house.

BIRCHWOOD



25. View of typical linear crack at the pool house concrete slab.



26. View of typical corroded pavilion column at the pool house.

BIRCHWOOD



27. View of ponding water in front of the restroom doors.



28. View of railing at the wood staircase.