2014 Reserves Fund Study
Capital Replacement Plan

University Woods Condominiums
Trailwood and Lineberry Drive
Raleigh, North Carolina

Owners: University Woods at
Centennial Condominiums Homeowner's Association

Prepared by: Ted M. Sherrod, PE

Date Prepared: August 11, 2014

Executive Summary

Property: University Woods (UWoods) Condominiums
Location: Trailwood and Lineberry Drive, Raleigh, North Carolina
Report Period: January 1, 2014 through December 31, 2014

Results

Projected Starting Reserves Account Balance	$50,000
Fully Funded Reserves Account Balance	$830,750
Percent Funded:	6.0%
Recommended 2015 Annual Reserves Account Contribution ($25/unit/mth) or	$64,000
Recommended Special Assessment Funding this year	TBD
Most Recent Reserves Account Contribution Rate	$0*

Economic Assumptions

Net Annual Interest Earnings	3.0% & 5.0%
Annual Inflation Rate	3.0%

- This is an update to the mid-2000's reserves budget furnished by the current Board of Directors (BOD).
- The information in this Plan is based on June through August 2014 site visits with contractors who provided estimates for major capital improvements components.
- The Reserves Budget is at 6.0% funded. For reference, the 70-130% funded level is where facilities typically desire fiscal stability with a low risk of special assessment and deferred maintenance.
- Based on this study, for UWoods future expenses and past contribution rates, UWoods should increase its contribution rate and pursue special assessments to build the Reserves account strength.

* Indicates approximation over the past few years

Introduction
A reserves fund study is composed of three key elements: components, fund strength, and contribution needs or funding plan.

Table 1 identifies the key components or assets that were tasked to the consultant for the University Woods (UWoods) reserves fund study. Each component is paired with an associated action item, useful life (UL), and remaining useful life (RUL). Quotations or budgeting estimates were solicited from contractors; (see Appendices), in June, July, and August of 2014 to obtain a cost to perform each action item in "2014 dollars".

The reserves fund strength is measured by the pro-rated amount of funds that are available, in current dollars, for each component. Fund strength is considered good if the percent funded falls in the 70-130% range, fair if in the 30-70% range, and weak in the 0-30% range. **The UWoods reserves fund strength is considered WEAK at 6.0%.** A survey of 10,000 associations reported 5% of HOA's reserves fund fell in the 0-9% percent funded range. The averages of 8-10% of HOA's were in the fair range.

Table 1		Useful Life	Remaining Useful Life	Current Average Cost	Current Reserves Needed
Component	Action Item	UL	RUL		
GENERAL EXTERIORS					
Roof	Replace	25	13	$400,000	$192,000
Asphalt	Resurface	25	13	$165,000	$79,200
Asphalt	Reseal	5	0	$30,000	$30,000
Siding, Vinyl	Replace	50	38	$1,450,000	$348,000
COMMON AREAS					
Stairs, Wooden	Retread	40	28	$53,000	$15,900
Decking, Wooden	Refloor	30	18	$198,000	$79,200
Railings, PVC	Replace	20	7	$133,000	$86,450
			Total		$830,750
			Reserve Fund Balance		$50,000
			Percent Funded		6.0%
			Reserve Fund Strength		Weak

Components:
Roof
The roof is approximately 12 years old and is in good condition based on the inspection by the roofing contractor. Quotations for a similar 25-year shingle and a 40-year architectural shingle were provided. The BOD should consider the enhanced warranty for the architectural shingle as its price was approximately 5% or $20K greater. The price includes replacement for all 17 condo buildings, 2 mailbox kiosks, and clubhouse (See Appendix A).

Vinyl Siding

The vinyl siding reportedly has a 50-year life; some references cite a 25-year life. The mid-2000 budget, as well as this study, projects a 50-year life (See Appendix B). Thus, risk is recognized with this assumption. Some manufacturer's pro-rate the warranty as follows:

Percentage of Coverage	Years Since Installation
100%	Up to 5
90%	More than 5 and up to 7
80%	More than 7 and up to 8
70%	More than 8 and up to 9
60%	More than 9 and up to 10
50%	More than 10 and up to 11
40%	More than 11 and up to 12
30%	More than 12 and up to 13
20%	More than 13 and up to 14
10%	More than 14 and up to 50

During the site review, the vinyl siding showed evidence of a need for thorough cleaning (as noted on the cover page photo), general repair/replacement due to wear, weed trimmer damage, and suspected vandalism, as well as investigation for damage by window reflections.

Photos showing condition of vinyl siding where gutters overflow onto the soil surface

While maintenance related activities were not scoped with this study, quotations were received or estimated for tree trimming, gutter/downspout cleaning, chemical cleaning, and repair (See Appendix F). The repair quotation contains the cost for replacing the vinyl damaged by window reflections. Industry reports that sunlight reflected off low emissivity, energy efficient windows can cause vinyl to melt. The vinyl contractor indicated that building

codes have now been modified to address this issue. The BOD may wish to pursue replacement of low emissivity damaged vinyl through warranty; the coverage continues to deflate over time as noted in the previous chart. Some manufacturer's no longer warranty damage from this phenomenon. Shaded window screens may be a long term solution.

Photos showing window mirror reflection onto vinyl siding (left) and resulting damaged vinyl siding (right)

The vinyl contractor stated that a 10% or more savings could likely be realized, if the future vinyl installer could purchase truck load quantities. Thus, the estimate used in the study reflected a 10% reduction in the quotation. Note, the fascia, soffit, and ceiling are aluminum. Gutter and downspout replacement costs are not included in the estimate.

Asphalt

The asphalt is in good condition based on the inspection by the pavement contractor. Paved surfaces were treated with an asphalt rejuvenator and restriped in 2008 to seal cracks and preserve the pavement life. A rejuvenator penetrates and seals asphalt as compared to a seal coat or sealer which is only a surface protectant. One area of failure was noted at the dumpster on the north end of Wolf Tech Lane; a quotation for resurfacing, repair, and restriping was provided (See App. C/D). **The pavement is due for another reseal treatment.**


Photos depicting repairs needed at dumpster site near Wolf Tech Lane

Wooden Stairs

The building contractor stated that the wooden staircases should match the structural life of the building. The flight of stairs to the second floor shows the most wear, of course, with the flight to the third floor showing less wear or theoretically, half as much. A quotation was provided to replace the wooden stair treads and risers. The treads are recessed into the stringers and tedious removal would be required per tread and riser. More options may be available from other builders/contractors.

Wooden stairs with treads and risers (left) and wooden decking in breezeways (right)

Wooden Decking

The building contractor also reviewed the wooden decking for the second and third floor breezeways. The decking shows wear with evidence of some burned and some painted surfaces. A quotation was provided for the removal and replacement of the 5/4" treated decking.

Railing

The PVC railing at the ends of breezeways and around the stairway shows wear, damage, and a need for a thorough cleaning. The building contractor provided a quotation to replace with PVC-like railing, as the existing style would be matched as closely as possible. (See Appendix E for quotations/estimates for these three components).

PVC railing in breezeways and stairways

Rail connections showing deterioration with masonite (left) and vinyl handrail detached from wall (right)

Future Reserves Projections

Using an inflation rate of 3%, Table 2 below depicts a future reserves need of just under $6,000,000 to fund capital improvement projects for the noted components over the next 38 years.

Table 2		Useful Life	Remaining Useful Life	Current Average Cost	Future Average Cost
Component	Action Item	UL	RUL		
GENERAL EXTERIORS					
Roof	Replace	25	13	$400,000	$587,413
Asphalt	Resurface	25	13	$165,000	$242,308
Asphalt	Reseal	5	0	$30,000	$30,000
Siding, Vinyl	Replace	50	38	$1,450,000	$4,458,436
COMMON AREAS					
Stairs, Wooden	Retread	40	28	$53,000	$121,260
Decking, Wooden	Refloor	30	18	$198,000	$337,082
Railings, PVC	Replace	20	8	$133,000	$168,480
			Total		$5,944,980
			Assuming 3% Inflation		

Annual Contribution Needs

Table 3 provides an analysis of the contributions needed to fund the capital improvement projects. Using an interest rate of 3% (assuming rates will steadily rise over the next three to four decades), a reserves balance of $50,000, and monthly payments from 216 condo units, funding is needed as follows:

- $64,000/year or $25/month/condo unit for 38 years from 2015 through 2052

Table 3 University Woods Reserve Fund Contribution Analysis

		Reserve Balance	$50,000				
		Interest	0.03				
		Annual Contr Need	$64,000	Year	2015 to 2038		
Num Yrs	Year	Begin Bal	Contribution	Expense	Before Int	End Bal	Monthly Contrib Need/Unit
0	2014	50,000	0	30,000	20,000	20,600	25
1	2015	20,600	64,000	0	84,600	87,138	25
2	2016	87,138	64,000	0	151,138	155,672	25
3	2017	155,672	64,000	0	219,672	226,262	25
4	2018	226,262	64,000	0	290,262	298,970	25
5	2019	298,970	64,000	0	362,970	373,859	25
6	2020	373,859	64,000	0	437,859	450,995	25
7	2021	450,995	64,000	0	514,995	530,445	25
8	2022	530,445	64,000	168,480	425,965	438,744	25
9	2023	438,744	64,000	0	502,744	517,826	25
10	2024	517,826	64,000	0	581,826	599,281	25
11	2025	599,281	64,000	0	663,281	683,179	25
12	2026	683,179	64,000	0	747,179	769,595	25
13	2027	769,595	64,000	829,721	3,874	3,990	25
14	2028	3,990	64,000	0	67,990	70,030	25
15	2029	70,030	64,000	0	134,030	138,051	25
16	2030	138,051	64,000	0	202,051	208,112	25
17	2031	208,112	64,000	0	272,112	280,275	25
18	2032	280,275	64,000	337,082	7,193	7,409	25
19	2033	7,409	64,000	0	71,409	73,552	25
20	2034	73,552	64,000	0	137,552	141,678	25
21	2035	141,678	64,000	0	205,678	211,848	25
22	2036	211,848	64,000	0	275,848	284,124	25
23	2037	284,124	64,000	0	348,124	358,568	25
24	2038	358,568	64,000	0	422,568	435,245	25
25	2039	435,245	64,000	0	499,245	514,222	25
26	2040	514,222	64,000	0	578,222	595,569	25
27	2041	595,569	64,000	0	659,569	679,356	25
28	2042	679,356	64,000	121,260	622,096	640,759	25
29	2043	640,759	64,000	0	704,759	725,901	25
30	2044	725,901	64,000	0	789,901	813,598	25
31	2045	813,598	64,000	0	877,598	903,926	25
32	2046	903,926	64,000	0	967,926	996,964	25
33	2047	996,964	64,000	0	1,060,964	1,092,793	25

34	2048	1,092,793	64,000	0	1,156,793	1,191,497	25
35	2049	1,191,497	64,000	0	1,255,497	1,293,162	25
36	2050	1,293,162	64,000	0	1,357,162	1,397,877	25
37	2051	1,397,877	64,000	0	1,461,877	1,505,733	25
38	2052	1,505,733	64,000	4,458,436	-2,888,703		25

However, the $25 per month per unit assessment minimally provides for a positive cash flow until 2052 when vinyl siding replacement is planned. **At this date, a $2.9M shortfall occurs.**

Contribution needs can be adjusted by deferring major maintenance or repairs (not recommended), special assessments, loans, and/or projecting different interest rates for the reserves fund account.

Additional analyses were calculated to determine options to fund the reserves account and depicted as follows:

3% Interest Scenarios

- $64K/yr contribution or $25/month (baseline example used above) provides a bare minimum positive cash flow through all capital improvements except the vinyl in year 38 leaving a $2.9M shortfall

2014 special assessment:

- In 2014 only at $54K or $250/unit; $2.7M shortfall; doubling assessment $2.6M shortfall
- $250 special assessment in 2014 and every 5 years for next 38 yrs; $2.0M shortfall
- $500 special assessment in 2014 and every 5 years for next 38 yrs; $1.2M shortfall

5% Interest Scenarios

- $64K/yr contribution or $25/month provides a little higher cash flow balance with a $2.0M shortfall for vinyl

2014 special assessment:

- In 2014 only at $54K or $250/unit; $1.7M shortfall; doubling assessment $1.4M shortfall
- $250 special assessment in 2014 and every 5 years for next 38 yrs; $0.7M shortfall
- **$500 special assessment in 2014 and every 5 years for next 38 yrs; $0.6M balance**

Table 4 depicts the analysis noted above in bold to maintain a positive cash flow.

Table 4 University Woods Reserve Fund Contribution Analysis

		Reserve Balance	$50,000			Assessment	$108,000
		Interest	0.05				
		Annual Contr	$64,000	Year	2015 to 2054		
Num Yrs	Year	Begin Bal	Contribution	Expense	Before Int	End Bal	Monthly Contrib Need/Unit
0	2014	50,000	108,000	30,000	128,000	134,400	25
1	2015	134,400	64,000	0	198,400	208,320	25
2	2016	208,320	64,000	0	272,320	285,936	25
3	2017	285,936	64,000	0	349,936	367,433	25
4	2018	367,433	64,000	0	431,433	453,004	25
5	2019	453,004	172,000	0	625,004	656,255	25
6	2020	656,255	64,000	0	720,255	756,267	25
7	2021	756,267	64,000	0	820,267	861,281	25
8	2022	861,281	64,000	168,480	756,801	794,641	25
9	2023	794,641	64,000	0	858,641	901,573	25
10	2024	901,573	172,000	0	1,073,573	1,127,251	25
11	2025	1,127,251	64,000	0	1,191,251	1,250,814	25
12	2026	1,250,814	64,000	0	1,314,814	1,380,555	25
13	2027	1,380,555	64,000	829,721	614,834	645,575	25
14	2028	645,575	64,000	0	709,575	745,054	25
15	2029	745,054	172,000	0	917,054	962,907	25
16	2030	962,907	64,000	0	1,026,907	1,078,252	25
17	2031	1,078,252	64,000	0	1,142,252	1,199,365	25
18	2032	1,199,365	64,000	337,082	926,283	972,597	25
19	2033	972,597	64,000	0	1,036,597	1,088,427	25
20	2034	1,088,427	172,000	0	1,260,427	1,323,448	25
21	2035	1,323,448	64,000	0	1,387,448	1,456,821	25
22	2036	1,456,821	64,000	0	1,520,821	1,596,862	25
23	2037	1,596,862	64,000	0	1,660,862	1,743,905	25
24	2038	1,743,905	64,000	0	1,807,905	1,898,300	25
25	2039	1,898,300	172,000	0	2,070,300	2,173,815	25
26	2040	2,173,815	64,000	0	2,237,815	2,349,706	25
27	2041	2,349,706	64,000	0	2,413,706	2,534,391	25
28	2042	2,534,391	64,000	121,260	2,477,131	2,600,988	25
29	2043	2,600,988	64,000	0	2,664,988	2,798,237	25
30	2044	2,798,237	172,000	0	2,970,237	3,118,749	25
31	2045	3,118,749	64,000	0	3,182,749	3,341,886	25
32	2046	3,341,886	64,000	0	3,405,886	3,576,181	25

33	2047	3,576,181	64,000	0	3,640,181	3,822,190	25
34	2048	3,822,190	64,000	0	3,886,190	4,080,499	25
35	2049	4,080,499	172,000	0	4,252,499	4,465,124	25
36	2050	4,465,124	64,000	0	4,529,124	4,755,580	25
37	2051	4,755,580	64,000	0	4,819,580	5,060,559	25
38	2052	5,060,559	64,000	4,458,436	666,123	699,429	25

Thus, present and future owners share the costs, if assessments are deemed most prudent, over the next period of years. No unreasonable burden is placed on current owners to "foot the bill," for future needs. The assessment can be indexed for inflation. Scenario runs are limitless.

In summary, a minimum annual contribution of $64K is needed along with a periodic special assessment to address future capital improvement projects.

Maintenance and Repair Considerations

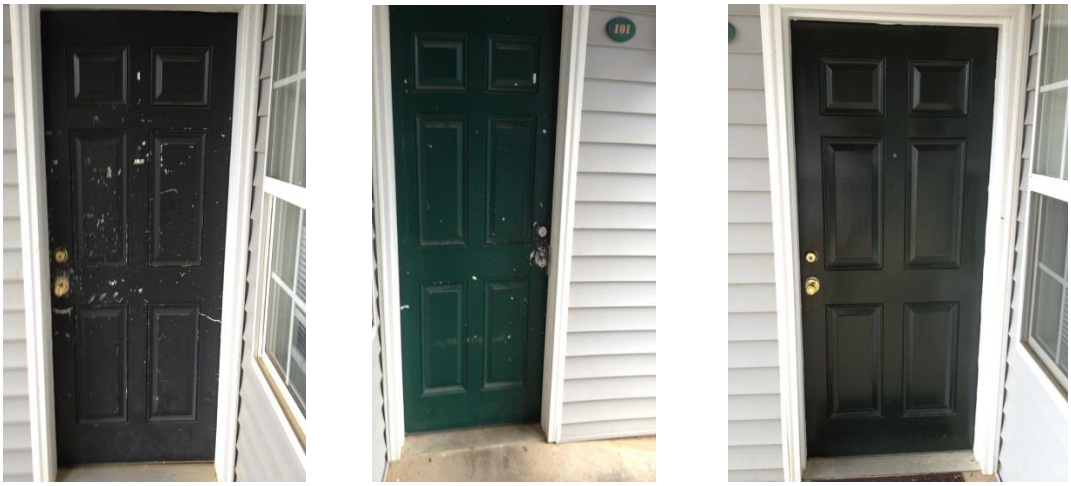
For BOD consideration, Table 5 depicts other key maintenance and repair items observed during this study, but not considered in the funding plan.

Table 5 Component	Action Item	Useful Life UL	Remaining Useful Life RUL	Current Average Cost
GENERAL EXTERIORS				
Roof	Replace	25	13	$400,000
Asphalt	Resurface	25	13	$165,000
Asphalt	Reseal	5	0	$30,000
Parking Stall	Restripe	5	0	$3,500
Asphalt	Repair	25	NA	$10,000
Siding, Vinyl	Replace	50	38	$1,450,000
Siding, Vinyl	Repair	15	2	$7,500
Window, Low E Screen	Install	25	NA	$5,000
Gutters/Dnspouts	Repair	5	0	$3,000
Trees	Trim	5	0	$5,000
External Surfaces	Powerwash	2	0	$9,000
COMMON AREAS				
Stairs, Wooden	Retread	40	28	$53,000
Decking, Wooden	Refloor	30	18	$198,000
Railings, PVC	Replace	20	8	$133,000
Railings, PVC	Refurbish	5	0	$7,000
Doors, Metal	Paint	5	0	$10,000
Common Area Surfaces	Powerwash	2	0	$8,000

NA indicates a one-time expense, not expected to repeat.

Table 6 includes additional components for consideration observed during this study, but not considered in the funding plan.

Table 6 Component	Action Item	Useful Life UL	Remaining Useful Life RUL	Current Average Cost
GENERAL EXTERIORS				
Roof	Replace	25	13	$400,000
Asphalt	Resurface	25	13	$165,000
Asphalt	Reseal	5	0	$30,000
Parking Stall	Restripe	5	0	$3,500
Asphalt	Repair	25	NA	$10,000
Siding, Vinyl	Replace	50	38	$1,450,000
Siding, Vinyl	Repair	25	NA	$7,500
Siding, Vinyl	Refurbish	5	5	$5,000
Gutters/Dnspouts	Replace	40	28	$50,000
Gutters/Dnspouts	Refurbish	10	0	$10,000
Vent Covers, Dryer	Repair	5	0	$6,500
Storm Sewer	Monitor	50		
Stormwater Facilities	Refurbish	10	0	$10,000
Curb, Concrete	Monitor	50		
Sidewalk, Concrete	Monitor	50		
Dumpster Fencing	Replace	10	3	$5,000
Retaining Walls	Monitor	50		
Pole Lights	Replace	24	12	$75,000
Mech Rm Door, Metal	Replace	25	13	$5,000
Electrical	Monitor	40		
Fire Suppression Sys	Monitor	50		
Mail Kiosk	Refurbish	10	0	$5,000
Signage, Rdway/Pking	Refurbish	10	0	$2,500
Landscaping	Refurbish	15	0	$25,000
COMMON AREAS				
Stairs, Wooden	Retread	40	28	$53,000
Decking, Wooden	Refloor	30	18	$198,000
Floor, Concrete	Monitor	50		
Railings, PVC	Replace	20	8	$133,000
Railings, PVC	Refurbish	5	0	$7,000
Fire Extinguishers	Replace	10	0	$5,000
Fire Alarm Devices	Replace	26	14	$10,000
Light Fixtures, Interior	Replace	16	4	$10,000



Examples of condition of door exterior finishes (left & center); good finish (right)

Examples of trees impacting gutters, roofing, and siding

References:

This reserves study used references from the National Reserves Study Standards, the 2013 Fannie Mae Property Needs Assessment publication, and manufacturer's warranty information for estimated useful life (EUL) tables for components and assets.

Author's Background

Ted Sherrod is a North Carolina licensed professional engineer with over 30 years of experience in roadway, bridge, and building construction and maintenance. Mr. Sherrod retired with the North Carolina Department of Transportation in 2010 with 30 years of service as a Transportation Engineering Manager. He was involved with the planning, design, construction, and maintenance of numerous rest areas and welcome centers during his career. He also oversaw a $1M/year facelifting implementation program involving the development of budgets, plans, specifications, and administering contracts to renovate building interiors and exteriors, water line distribution systems, solar systems, amenities, and landscaping. He also practices engineering in the stormwater discipline.

Mr. Sherrod owned an UWoods unit from 2005 to 2011, served a term on the UWoods BOD, and co-chaired the maintenance committee.

Mr. Sherrod is a native of North Carolina and was raised in the Raleigh/Garner area and has lived and worked in the state his entire life. He is familiar with development in the UWoods area since the 1960's.

Appendices

Appendix A: Roofing Quotations

Appendix B: Vinyl Siding Budgeting Estimate

Appendix C: Asphalt Quotations

Appendix D: Asphalt Rejuvenator/Sealer Quotations

Appendix E: Railings, Stairway, and Decking Budgeting Estimate

Appendix F: Miscellaneous “Tune Up“/Maintenance/Repair Quotations