April 3, 2023

Natalie Ventimiglia, Board Member
SUNNY BROOK FARMS HOA
Arnold, MO

Via Email: *syndicate@rcirealty.com*
Property: Sunny Brook Farms Homeowners Association
Sunny Brook Dr, Arnold, 63010

Service: FULL RESERVE STUDY

Project No.: 202210-12

Attachment:Final Report

Dear Natalie Ventimiglia and Members of the Board,

Criterium-Hardy Engineers has completed an Full Reserve Study for the Sunny Brook Farms Homeowners Association. Enclosed is our report for your review.

This Reserve Study has been performed in general accordance with Community Association Institute (CAI) National Reserve Study Standards.

Our report should be reviewed in its entirety, including its Appendices which contain the financial analysis, captioned photographs, and reference documents.

Criterium-Hardy Engineers appreciates this opportunity to assist the executive board, in support of the Sunny Brook Farms Homeowners Association Condominium Association's facility and financial planning.

Thank you.

Criterium-Hardy Engineers

Ross Hardy

Sunny Brook Farms Reserve Study - Final (With Streets) - Final

Prepared for:

Board of Directors
Sunny Brook Farms Homeowners Association
Arnold, Missouri

Prepared By:

HARDY CRITERIUM ENGINEERS

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MEMBER OF community ASSOCIATIONS INSTITUTE

Site Inspection performed November 15, 2022
Submitted April 3, 2023

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1.0 INTRODUCTION

Following authorization by the Sunny Brook Farms Homeowners Association's Board of Directors, Criterium-Hardy Engineers has conducted a Full Reserve Study of your 97 unit residential community located at Sunny Brook Dr in Arnold, MO. Our work is consistent with our proposal dated 9/11/2022.

This report must be reviewed in its entirety to understand our findings and their limitations. The Appendices are an integral part of this report and must be included in any review. Please refer to Appendix D for definitions of common terms of reference used herein.

We have conducted the study in general accordance with the National Reserve Study Standards published by the Community Association Institute (CAI). Please refer to Appendix D which contains a copy of the CAI standard.

This study was conducted by licensed Professional Engineers and other qualified staff working under the responsible charge of a CAI-certified Reserve Specialist. Please refer to Appendix E for the qualifications of the project team.

Ross Hardy of Criterium-Hardy Engineers performed this study. This report is principally based on our visual site inspection on November 15, 2022.

Ross Hardy, RS prepared this report and the attached financial analysis. Kyle Hardy, $PE^{(MO)}$ of Criterium-Hardy Engineers reviewed their findings.

Criterium-Hardy Engineers presents this confidential report for the Board's review and use.

In reviewing the engineering assumptions, cost estimates and projected fund values herein, please understand that their accuracy diminishes as time passes. Long range facility maintenance projections are intended only to indicate the likely pattern of reserve expenditures and to guide financial planning.

Criterium-Hardy Engineers agrees with CAI's recommendation that reserve studies should be updated regularly to allow periodic adjustment of facility plans and funding strategies.

2.0 EXECUTIVE SUMMARY

In summary, as a result of our on-site inspections and other investigations, we find the common components of the property to be in fair general condition and moderately-maintained.

We have identified an inventory of Association-responsible common components which are likely to require periodic repair or replacement or other recurrent reserve investment.

We have formed an opinion of the remaining useful life of each component. We have estimated the current cost of required reserve expenditures for their repair or replacement. We have projected annual reserve budgets over a 20-year planning period.

In summary, the 20-year total of projected reserve expenditures, (current dollar cost estimates inflated at 3.50 % annually), is $1,374,425.

The Board has provided us with information on the Association's Reserve Fund and the current funding plan. Our initial financial analysis was based on the data supplied.

Our projections indicate that the current reserve fund contributions will not be adequate.

	Current Funding	Funding Plan 1 - Dollar Increases	Funding Plan 2 - Percentage Increases
ASSOCIATION			
Starting Balance	$0	$0	$0
Contributions	$0	$1,570,000	$1,612,222
Additional Capital	$0	$0	$0
Interest / Returns	$0	$40,608	$49,497
Expenditures	$1,374,425	$1,374,425	$1,374,425
Ending Balance	($1,374,425)	$486,182	$537,294
OWNER			
Avg Contributions (/unit/year)	$0	$809	$831
Avg Contributions (/unit/month)	$0	$67	$69

3.0 PURPOSE & SCOPE

3.1. OBJECTIVES

The purpose of this reserve study is to determine a reserve needs plan for the Association, to evaluate the current rate of contribution to the reserve fund, and, if required, to suggest alternate funding strategies.

This report is intended to be used as a tool by the Association's Board for considering and managing its future financial obligations, for determining appropriate reserve fund allocations, and for informing the individual Owners of the Association's required reserve expenditures and the resulting financial plan.

For purposes of financial planning, Association-responsible expenses are typically divided into two categories:

- Operation and maintenance (O&M) of commonly-held elements of real property and other assets. These O&M expenses usually include taxes, insurance, property management costs and other service
- Reserve expenditures for major periodic repairs or replacement of commonly-held elements.

Long-term reserve expenditures, the funding plan and ensuring adequate Reserve Fund balances are the focus of this Reserve Study.

History demonstrates that, as time progresses, property conditions and management strategies will change. As a result, planned scopes of work may be altered or deferred. Actual cost in the marketplace will vary from estimates. Actual rates of inflation and returns on investment will vary from projections.

For these reasons, we concur with the Community Association Institute guidelines and recommend that this reserve study be updated every three to five years.

3.2. LEVEL OF SERVICE

The Community Association Institute (CAI) identifies four levels of service for Reserve Studies:

1. Full Reserve Study
2. Reserve Study Update, With Site Visit/On-Site Review
3. Reserve Study Update, No-Site-Visit/Off Site Review
4. Preliminary Reserve Study, Community Not Yet Constructed

All may be appropriate for a community, depending on the condition of the facility and the phase of their planning cycle. The CAI National Reserve Study Standard in *Appendix D* contains more detail on these levels of service and the scope of study of each of them.

Our current study is a Level I - Reserve Study with On-Site Analysis.

Criterium's actual scope of service is enhanced and exceeds the CAI standard in the Amount principal ways:

- Our investigation and evaluation of the property is performed by experienced professional engineers
- After preparing and submitting our initial analysis, we engage in collaborative review process with the Board, toward developing a financial plan more responsive to the needs of the Sunny Brook Farms Homeowners Association.

3.3. SOURCES OF INFORMATION

The following people were interviewed during our study:

- Natalie Ventimiglia, Board Member

The following unit interiors were inspected and/or their Owners were interviewed:

- N/A

The following documents were provided to us and reviewed:

- Your Property Representative's explanation of the Association's maintenance responsibilities, and the Board's current facility plans.
- Provided Association information, including the current Reserve Fund balance and rate of contribution.

4.0 PHYSICAL ANALYSIS

4.1 PROPERTY DESCRIPTION

Sunny Brook Farms is a residential community that consists of 97 single family homes. Construction began on the neighborhood in its current configuration in the early 1990's. Access to the community is granted via Telegraph Rd in Arnold, Missouri.

The land surrounding the community generally slopes from north to south. Stormwater on the site drains via surface flow, armored swales, catch basins, or buried piping, offsite or toward stormwater detention basins.

The residential single family homes and property lines are maintained by the individual homeowners.

4.2 COMMON COMPONENTS

ASSET №	NAME	NEXT REPL	EST LIFE	ADJ LIFE	REM USEFUL LIFE	COST PER MEASURE	QTY	CURRENT COST
1	Full depth sectional repairs to concrete streets	3/1/2024	5y 0m	5y 0m	0y 0m	$139.725	1675	$234,039
2	Replace wood tie retaining wall	1/1/2025	35y 0m	N/A	0y 10m	$74.52	72	$5,365
3	Ongoing common area drainage repairs/ improvements	1/1/2026	5y 0m	5y 0m	1y 10m	$10,350.00	1 Allow	$10,350
4	Replace streetlights	1/1/2039	30y 0m	30y 0m	14y 10m	$2,328.75	16 Ea	$37,260
5	Allocation for ongoing signage replacement	1/1/2028	8y 0m	N/A	3y 10m	$5,175.00	1 Allow	$5,175
6	Allocation for paved catch basin replacement	1/1/2026	5y 0m	5y 0m	1y 10m	$1,707.75	2 Ea	$3,416
								$2,391,419

Please refer to Appendix A for the Common Component Inventory.

Association-responsible common components include:

- Concrete streets (maintained by Jefferson County)
- All parts of the common area storm water drainage systems
- Streetlights and street signage
- General landscaping and grounds-keeping of common ground including retaining walls and fencing

Individual Unit Owners are responsible for maintenance & repairs of their own:

- All parts of the residential buildings and property they reside on

4.3 CONDITION ASSESSMENT

The following key observations were made about the current condition of the more significant and costly common elements of the property:

4.3.1 Site Improvements

Concrete Streets: The Association is responsible for maintenance and repair of approximately 150K square feet of concrete streets throughout the community, which includes all or parts of Kleinschmidt Rd, Sun Tide Ct, Sunny Brook Dr, Sunny Brook Ct, Sunny Glen Ct, and Brook Ridge Dr. The concrete roads throughout the community were observed to be in fair to locally poor condition. Significant cracking, settling, patching, and surface deterioration was observed throughout. Full depth replacement of concrete slabs will be required over time. This would include saw-cutting and removing sections of the paving, repairing the subgrade/base course, and installing a new 5”-7” thick concrete slab.

It was reported that currently the concrete streets are being maintained by the Jefferson County Public Works Department. The agreement for county maintenance is not permanent and it is possible that the Sunny Brook Farms will need to resume ongoing maintenance of the streets. We have included estimates for full depth sectional replacement of approximately 10% of the concrete roads on a 5-year cycle for reference purposes beginning in 2024.

Retaining Walls: There is a small wood tie retaining between 4057 and 4061 Sunny Brook Dr along a drainage creek that is deteriorated and reaching the end of its useful life. We recommend the Association consider replacing the wood tie wall with a style of retaining wall that generally has a longer lifecycle, such as a concrete or gabion wall.

Upon further investigation and looking at Jefferson County Parcel data, we believe the retaining wall may be the responsibility of one of the two addresses mentioned above. We have not allocated funding to replace the wood tie retaining wall, however we have included it in the report for reference.

Drainage: Storm water on the site drains via surface flow or via landscaped and armored swales toward catch basins and curb inlets in the paved and landscaped areas offsite or to stormwater detention basins. The drainage systems generally appeared to be in fair condition. Armored swales are installed in areas of heavy stormwater flow. The drainage swales and piping will tend to accumulate sediment that settles out during storm events and will need to be periodically removed and/or re-graded. It was reported that a special assessment was required a few years ago in order to address drainage concerns to the north of the homes along Sunny Brook Ct. We observed limited soil erosion, particularly around landscaped drainage basins. We noted debris in a number of stormwater piping outlets. There is a stormwater detention basin adjacent to the intersection of Telegraph Rd and Kleinschmidt Rd. After reviewing the Jefferson County Parcel data, it appears this stormwater detention basin is privately maintained by the owners of 3576 Telegraph Rd.

We recommend maintaining adequate soil stabilizing ground cover to reduce future erosion concerns. Repairs will likely include retrenching of swales to improve flow, adding or augmenting rip rap or vegetation to stabilize exposed or steep areas, repairing erosion concerns, extending gutter downspouts to underground systems, installing french drains or other types of minor drainage systems. In addition, over time, small landscape drainage systems will likely need to be installed in flat areas of the community to address drainage concerns. We have allocated funds for ongoing repairs the common ground drainage systems as needed on a 5-year cycle beginning in 2026.

Catch Basins: The Association is responsible for 22 stormwater catch basins installed along the concrete streets. It was reported that there have been some concerns with a limited number of the catch basins draining adequately. These pre-cast concrete catch basins can have a useful life of up to 100 years, however variable such as settling and deterioration related to water volume can cause premature failure of the drainage basins. Settling may cause the catch basins to separate from the main storm sewer piping and subsurface leaking. We noted a limited number

of basins showing signs of settling during our visit. We have allocated funding for replacement of 2 concrete catch basins every 5-years beginning in 2026. Replacement will likely required excavation and removal of the current basin and installing a new pre-cast catch basin.

We also recommend having a portion of the private drainage infrastructure (buried piping) inspected with a video borescope system, flushed, and repaired as necessary. An aerial view of the property line has been provided in Appendix B.

Streetlights: The Association maintains 13 pole-mounted street lights adjacent to the community streets. The streetlights were observed to be in generally good condition, but are likely original to construction. We have allocated funding for replacing the streetlights on a 30-year window beginning in 2039.

Street Signs: The Association maintains the street signs throughout the community. The street signs include street identifiers, speed limit signs, and stop signs. The street signs were observed to be in generally good condition at the time of our visit. Over time, these signs will require replacement due to deterioration, traffic damage, environmental damage, or other factors. We noted a post on the HOA website on 7/29/2022 that the street signs are currently being replaced at the county's expense. We have not allocated funding for future replacement of these street signs, however we have included them in the report for reference.

4.4 LIFE & VALUATION

4.4.1 Opinions of Useful Life

Simply stated, for components which require periodic reserve expenditures for their repairs or replacement, the frequency of work equals the typical, industry accepted expected useful life (EUL) for the type of feature,

And, theoretically, the remaining useful life (RUL) of a component before the next reserve expenditure for its repair or replacement is equal to the difference between its EUL and its age:

RUL = EUL - Age

However, the condition and rate of deterioration of the association's assets rarely conform to such simple analysis. And, often, a property's history and available documentation does not provide any record of a particular component's actual age.

In our experience, the effective age and actual RUL of an installed item vary greatly from its actual age and calculated RUL. These variances depend on the quality of its original materials and workmanship, level of service, climatic exposure, and ongoing maintenance. As part of Criterium's work on this reserve study, we have determined our opinion of the effective age, EUL and RUL of each common component based on our evaluation of its existing condition and considering those factors.

When it seems appropriate, we will spread some budgets over multiple years. However, it is beyond the scope of this reserve study to prioritize the need for work between a number of buildings or installed locations or to closely specify or breakdown phased work packages.

In summary, we have based our opinion of the remaining useful life and expected frequency and schedule of repair for each common component on some or all of the following:

- Actual or assumed age
- Observed existing condition
- Association's or Property Manager's maintenance history and plan
- Our experience with actual performance of such components under similar service and exposure
- Our experience managing the repairs and replacements of such components

We use the following documentation to guide our considerations:

- Fannie Mae - Expected Useful Life Tables National Association of Home Builders - Life Expectancy of Components
- Marshall & Swift Valuation Service Expected Life Expectancies

4.4.2 Cost Estimating

In developing our estimate of reserve expenditure for most common components, we have estimated a quantity of each item and also a unit cost for its repair or replacement. In some cases, it is more appropriate to estimate a lump sum cost for a required work package or 'lot'.

Unless directed to take a different approach, we assume that contract labor will perform the work and apply appropriate installer's mark-ups on supplied material and equipment. When required, our estimated costs include demolition and disposal of existing materials, and protection of other portions of the property.

When appropriate for large reserve projects, we will also include soft costs for design and project management,

and typical general contractor's cost for general conditions, supervision, overhead and profit.

We have based our opinion of unit and lump sum costs on some or all of the following:

- Records of previous maintenance expenses
- Previously solicited Vendor quotations or Contractor proposals
- Provided reserve budgets developed by others
- Our project files on repairs and replacements at other properties

We use the following publications to guide our considerations:

- On-Line R S Means - Construction Cost Data
- Marshall & Swift Valuation Service - Facility Cost Index

Annual aggregated reserve expenditure budgets have been calculated for all years during the study period by inflating the annual tallies of current dollar cost estimates, and compounding for inflation at 3.50 % per year.

Of course, it is impossible to accurately predict inflation fluctuation. Three percent is close to the average annual values of both consumer and construction cost increases since the US Bureau of Labor Statistics started publishing data approximately 85 years ago.

5.0 FINANCIAL ANALYSIS

Please refer to Appendix A which contains tables illustrating the findings following below.

5.1 RESERVE EXPENDITURE PROJECTION

Based on our investigations and estimates described in Section 4 of this report, we have identified likely reserve expenditures throughout the study period.

For detailed information on projected reserve expenditures, please refer to the Appendix A tables titled “Common Component Inventory & Reserve Expenditure Planning” and “Annual Reserve Expenditures 20-Year Budget Projection.”

Please note that we have assumed that the cost of minor repair & replacement work valued at less than $2,000 will be covered by normal Operations & Maintenance budgets.

Our projections also include a suggested minimum annual balance threshold for your funding, which is referred to as the Threshold Level. This is equal to two times the average annual expenditures over the 20-year study period.

We have not included any reserve budget allowances for repair of casualty damage by vehicle impact, severe storm action, etc. It is assumed that such expenses would be defrayed by proceeds of insurance claims.

5.2 CURRENT FUNDING

5.2.1 Board-Provided Information

At the time we were retained to provide this study, provided us with initial information on the Trust's Reserve Fund and its funding plan.

Our initial financial analysis was based on the information supplied.

Fiscal Year Starting Date:	Mar 1, 2024
For Designated Year:	2024
Starting Fund Balance:	$0
On Date:	Mar 1, 2024
Current Rate of Contribution:	$0
Planned Increases:	0.00 %
Planned Special Assessments:	$0
Projected Average Return on Investment:	1.00 %
Projected Rate of Annual Inflation:	3.50 %

Financial data, records of past expenses, and cost estimates provided by others have been taken in good faith and at face value. No audit or other verification has been performed.

5.2.2 Current Funding Plan Projection

Our initial analysis was a projection of the Association's current rate of contribution forward over 20 years with no increases. For detailed data, please refer to the Appendix A tables and graphs titled “Reserve Fund - 20-Year Cash flow Projection - Current Funding Plan”

Given the reported $0 starting balance of the Reserve Fund on Mar 1, 2024, the current ongoing rate of contribution of , and an anticipated average rate of return on investment of 1.00 % per year, our financial analysis indicates that the Association's current funding will not prove sufficient to meet future needs.

The current funding rate is not projected to maintain a positive balance through the end of this study. The projected year-end balance at the end of the 20-year planning period in 2043 will be approximately ($1,374,425).

5.3 ALTERNATIVE FUNDING PLANS

For your association, we suggest an initial threshold equal to two times the average annual reserve expenditure in current dollars. This equals $12,038 contributions in Year One. This current value is then adjusted for inflation over the study period leading to a future dollar threshold value of approximately $12,848 in Year 20.

The alternate funding plans we have developed should maintain positive reserve balances throughout the study which will not fall far below this suggested range of minimum threshold values.

We have prepared 2 alternate funding plan(s) for the Board's consideration:

- Dollar Funding Plan: Beginning in Mar 1, 2024, annual contributions to the Reserve Fund should be $50,000. Going forward, annual contributions should increase $350 annually for the next 20 years.
- Percentage Funding Plan: Beginning in Mar 1, 2024, annual contributions to the Reserve Fund should be $60,000. Going forward, annual contributions should increase 3% annually for the next 20 years.

We look forward to working with the Board to develop a satisfactory plan for their adoption.

5.4. FUNDING METHODOLOGIES (Background Information)

The Community Association Institute (CAI) recognizes several reserve funding methodologies, all of which may be used to satisfy these principles:

- Sufficient Funds When Required
- Stable Contribution Rate over the Years
- Evenly Distributed Contributions over the Years
- Fiscally Responsible

For the planning needs of your association, we have recommended a cash-flow projection approach. The projection considers anticipated annual expenditures and contributions to compute approximate year-end reserve fund balances throughout the study period. This methodology is consistent with standards suggested by CAI.

There are other methods of determining appropriate reserve funding levels. If you are interested, these are set forth in CAI’s National Reserve Study Standard attached in Appendix D.

6.0 LIMITATIONS

STANDARDS AND LIMITATIONS

Criterium-Hardy Engineers shall perform duties to at least the professional standards consistent with a licensed, Professional Engineer, but does not guarantee or warrant that all adverse conditions concerning the property can be or will be discovered and included in the report. The photographs are an integral part of this report and must be included in any review.

This study is limited to the visual observations made during our inspection. We did not undertake any excavation, conduct any destructive or invasive testing, remove surface materials or finishes, or displace furnishings or equipment. The observations described in this study are valid on the dates of the investigation. Accordingly, we cannot comment on the condition of systems that we could not see, such as buried structures and utilities, nor are we responsible for conditions that could not be seen or were not within the scope of our services at the time of inspection.

We did not perform any computations or other engineering analysis as part of this study, nor did we conduct a comprehensive code compliance investigation.

This information in this study is not to be considered a warranty of condition, quality, compliance or cost. No warranty is implied.

Financial data, records of past expenses, and cost estimates provided by others have been taken in good faith and at face value. No audit or other verification has been performed.

Reserve budgets are opinions of likely expense based on reasonable cost estimates. We have not obtained competitive quotations or estimates from contractors. Actual costs can vary significantly, based on the specific scope of work developed, availability of materials and qualified contractors, and many other variables. We cannot be responsible for variances.

Criterium-Hardy Engineers does not offer financial counseling services. Although reasonable rates of inflation and return on investment must be assumed to calculate projected balances, no one can accurately predict actual economic performance. Although reserve fund management and investment may be discussed during the course of the study, we do not purport to hold any special qualifications in this area.

We recommend that the Board also seek other professional guidance before finalizing their current reserve fund planning activity. Depending on issues which may arise, an appropriate team of consultants to aid decision-making might include their property manager, accountant, financial counselor and attorney.

Criterium-Hardy Engineers prepared this confidential report for the review and use of the Board of the Association. We do not intend any other individual or party to rely upon this study without our express written consent. If another individual or party relies on this study, they shall indemnify, defend and hold Criterium-Hardy Engineers, its subsidiaries, affiliates, officers, directors, members, shareholders, partners, agents, employees and such other parties in interest specified by Criterium-Hardy Engineers harmless for any damages, losses, or expenses they may incur as a result of its use. Any use or reliance of the report by an individual or party other than shall constitute acceptance of these terms and conditions.

7.0 CONCLUSION

Criterium-Hardy Engineers appreciates this opportunity to assist in support of the Sunny Brook Farms Homeowners Association facility and financial planning. We are pleased to present this report for the Board's consideration and use.

To the best of our ability, we have attempted to work in the best interest of the Sunny Brook Farms Homeowners Association and to aid the Board toward fulfillment of their fiduciary responsibilities and obligations to the individual Unit Owners who comprise the association's membership.

In our professional opinion, and within the limitations disclosed elsewhere herein, all information contained herein is reliable and appropriate to guide the Board's deliberations and decision-making.

All of Criterium's work for this study has been carried out in strict accordance with the CAI Code of Ethics. We consider our report confidential and will not share its content with anyone but the Board without its knowledge and release.

We are unaware of any other involvement or business relationship between Criterium-Hardy Engineers and the Developer, or individual Unit Owners, or members of the Board, or any other entities which constitute any conflict of interest.

If you have any further questions or would like to direct additional, follow-on services, please contact Ross Hardy at 3145177030.

Criterium-Hardy Engineers appreciates this opportunity to assist the Board in support of the association's facility and financial planning. Thank you.

Thank you.

Respectfully submitted,

Criterium-Hardy Engineers

Ross A. Hardy, CAI RS
Project Manager
Inspection and Reporting

Kyle D. Hardy, PE(MO), CAI RS
President
Reviewing

APPENDICES

APPENDIX A

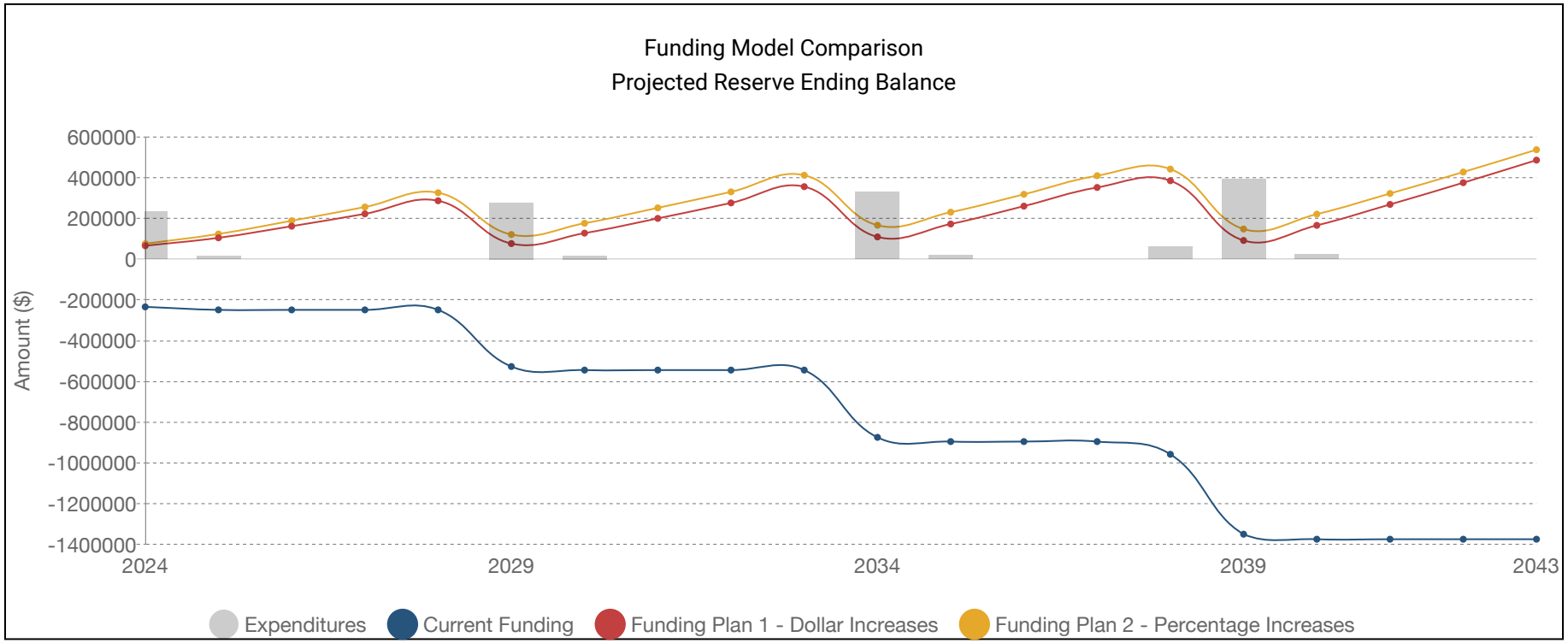
FINANCIAL EXHIBITS

Association Information, Agreed Planning Assumptions and Current Reserve Funding Data

Association Information:		
Number of units		97
Is this property mixed-use?		No
Are all Units assessed at equal rates?		No
Fiscal year starts		March 1, 2024
Fiscal year is designated as		2024
Construction History:		
Initial building construction or first Unit occupancy		1990
If building(s) had a prior use, the year of condo conversion	Not Applicable	---
If phased construction, the year the last Unit was completed	Not Applicable	---
Significant renovation	Not Applicable	---
Study Information & Planning Assumptions:		
Study period, duration in years		20
Study period starts		March 1, 2024
Rate of return on investment % (ROI) applied to reserve fund balances		1.00 %
Annual inflation rate (%) applied to future expenditure annual budgets		3.50 %
Current Funding Levels:		
Estimated starting reserve fund balance		$0
Current monthly reserve contribution		$0
Current overall annual reserve contribution		$0
Monthly average reserve contribution per unit		$0
Annual average reserve contribution per unit		$0

20-Year Cash-Flow Projections - Summary Graph

			Year-End Reserve Fund Balances	Year-End Reserve Fund Balances	
Year No.	Fiscal Year	Projected Capital Expenditures	Current Funding	Funding Plan 1 - Dollar Increases	Funding Plan 2 - Percentage Increases
1	2024	$234,039	($234,039)	$65,961	$75,961
2	2025	$14,746	($248,785)	$104,874	$123,774
3	2026	$0	($248,785)	$161,923	$188,666
4	2027	$0	($248,785)	$222,542	$256,116
5	2028	$0	($248,785)	$286,768	$326,208
6	2029	$277,965	($526,750)	$76,671	$121,062
7	2030	$17,514	($544,263)	$127,924	$176,402
8	2031	$0	($544,263)	$200,203	$251,959
9	2032	$0	($544,263)	$276,205	$330,484
10	2033	$0	($544,263)	$355,967	$412,076
11	2034	$330,136	($874,399)	$109,391	$166,696
12	2035	$20,801	($895,200)	$172,684	$230,616
13	2036	$0	($895,200)	$260,411	$318,468
14	2037	$0	($895,200)	$352,015	$409,764
15	2038	$62,424	($957,623)	$385,112	$442,194
16	2039	$392,097	($1,349,721)	$91,866	$147,997
17	2040	$24,705	($1,374,425)	$166,080	$221,054
18	2041	$0	($1,374,425)	$268,741	$322,436
19	2042	$0	($1,374,425)	$375,428	$427,806
20	2043	$0	($1,374,425)	$486,182	$537,294



The chart above compares the projected annual reserve fund ending balances for the two funding plans.

Cash-Flow Projection at the Current Funding Funding Level

Inflation: 3.50 % | **Investment:** 1.00 % | **Calc:** Inflation-Adjusted

YEAR	STARTING BALANCE	CONTRIBUTIONS	PERCENT CHANGE	INTEREST	SPECIAL ASSMNT	ADDTIONAL CAPITAL	EXPENDITURE FUTURE COST	ENDING BALANCE
2024-25	$0	$0	N/A	$0	$0	$0	$234,039	($234,039)
2025-26	($234,039)	$0	N/A	$0	$0	$0	$14,746	($248,785)
2026-27	($248,785)	$0	N/A	$0	$0	$0	$0	($248,785)
2027-28	($248,785)	$0	N/A	$0	$0	$0	$0	($248,785)
2028-29	($248,785)	$0	N/A	$0	$0	$0	$0	($248,785)
2029-30	($248,785)	$0	N/A	$0	$0	$0	$277,965	($526,750)
2030-31	($526,750)	$0	N/A	$0	$0	$0	$17,514	($544,263)
2031-32	($544,263)	$0	N/A	$0	$0	$0	$0	($544,263)
2032-33	($544,263)	$0	N/A	$0	$0	$0	$0	($544,263)
2033-34	($544,263)	$0	N/A	$0	$0	$0	$0	($544,263)
2034-35	($544,263)	$0	N/A	$0	$0	$0	$330,136	($874,399)
2035-36	($874,399)	$0	N/A	$0	$0	$0	$20,801	($895,200)
2036-37	($895,200)	$0	N/A	$0	$0	$0	$0	($895,200)
2037-38	($895,200)	$0	N/A	$0	$0	$0	$0	($895,200)
2038-39	($895,200)	$0	N/A	$0	$0	$0	$62,424	($957,623)
2039-40	($957,623)	$0	N/A	$0	$0	$0	$392,097	($1,349,721)
2040-41	($1,349,721)	$0	N/A	$0	$0	$0	$24,705	($1,374,425)

YEAR	STARTING BALANCE	CONTRIBUTIONS	PERCENT CHANGE	INTEREST	SPECIAL ASSMNT	ADDTIONAL CAPITAL	EXPENDITURE FUTURE COST	ENDING BALANCE
2041-42	($1,374,425)	$0	N/A	$0	$0	$0	$0	($1,374,425)
2042-43	($1,374,425)	$0	N/A	$0	$0	$0	$0	($1,374,425)
2043-44	($1,374,425)	$0	N/A	$0	$0	$0	$0	($1,374,425)

Alternative Funding 1 - Funding Plan 1 - Dollar Increases

Inflation: 3.50 % | **Investment:** 1.00 % | **Calc:** Inflation-Adjusted

YEAR	STARTING BALANCE	CONTRIBUTIONS	PERCENT CHANGE	INTEREST	SPECIAL ASSMNT	ADDTIONAL CAPITAL	EXPENDITURE FUTURE COST	ENDING BALANCE
2024-25	$0	$50,000	N/A	$0	$250,000	$0	$234,039	$65,961
2025-26	$65,961	$53,000	6.00 %	$660	$0	$0	$14,746	$104,874
2026-27	$104,874	$56,000	5.66 %	$1,049	$0	$0	$0	$161,923
2027-28	$161,923	$59,000	5.36 %	$1,619	$0	$0	$0	$222,542
2028-29	$222,542	$62,000	5.08 %	$2,225	$0	$0	$0	$286,768
2029-30	$286,768	$65,000	4.84 %	$2,868	$0	$0	$277,965	$76,671
2030-31	$76,671	$68,000	4.62 %	$767	$0	$0	$17,514	$127,924
2031-32	$127,924	$71,000	4.41 %	$1,279	$0	$0	$0	$200,203
2032-33	$200,203	$74,000	4.23 %	$2,002	$0	$0	$0	$276,205
2033-34	$276,205	$77,000	4.05 %	$2,762	$0	$0	$0	$355,967
2034-35	$355,967	$80,000	3.90 %	$3,560	$0	$0	$330,136	$109,391
2035-36	$109,391	$83,000	3.75 %	$1,094	$0	$0	$20,801	$172,684
2036-37	$172,684	$86,000	3.61 %	$1,727	$0	$0	$0	$260,411
2037-38	$260,411	$89,000	3.49 %	$2,604	$0	$0	$0	$352,015
2038-39	$352,015	$92,000	3.37 %	$3,520	$0	$0	$62,424	$385,112
2039-40	$385,112	$95,000	3.26 %	$3,851	$0	$0	$392,097	$91,866
2040-41	$91,866	$98,000	3.16 %	$919	$0	$0	$24,705	$166,080

YEAR	STARTING BALANCE	CONTRIBUTIONS	PERCENT CHANGE	INTEREST	SPECIAL ASSMNT	ADDTIONAL CAPITAL	EXPENDITURE FUTURE COST	ENDING BALANCE
2041-42	$166,080	$101,000	3.06 %	$1,661	$0	$0	$0	$268,741
2042-43	$268,741	$104,000	2.97 %	$2,687	$0	$0	$0	$375,428
2043-44	$375,428	$107,000	2.88 %	$3,754	$0	$0	$0	$486,182

Alternative Funding 2 - Funding Plan 2 - Percentage Increases

Inflation: 3.50 % | **Investment:** 1.00 % | **Calc:** Inflation-Adjusted

YEAR	STARTING BALANCE	CONTRIBUTIONS	PERCENT CHANGE	INTEREST	SPECIAL ASSMNT	ADDTIONAL CAPITAL	EXPENDITURE FUTURE COST	ENDING BALANCE
2024-25	$0	$60,000	N/A	$0	$250,000	$0	$234,039	$75,961
2025-26	$75,961	$61,800	3.00 %	$760	$0	$0	$14,746	$123,774
2026-27	$123,774	$63,654	3.00 %	$1,238	$0	$0	$0	$188,666
2027-28	$188,666	$65,564	3.00 %	$1,887	$0	$0	$0	$256,116
2028-29	$256,116	$67,531	3.00 %	$2,561	$0	$0	$0	$326,208
2029-30	$326,208	$69,556	3.00 %	$3,262	$0	$0	$277,965	$121,062
2030-31	$121,062	$71,643	3.00 %	$1,211	$0	$0	$17,514	$176,402
2031-32	$176,402	$73,792	3.00 %	$1,764	$0	$0	$0	$251,959
2032-33	$251,959	$76,006	3.00 %	$2,520	$0	$0	$0	$330,484
2033-34	$330,484	$78,286	3.00 %	$3,305	$0	$0	$0	$412,076
2034-35	$412,076	$80,635	3.00 %	$4,121	$0	$0	$330,136	$166,696
2035-36	$166,696	$83,054	3.00 %	$1,667	$0	$0	$20,801	$230,616
2036-37	$230,616	$85,546	3.00 %	$2,306	$0	$0	$0	$318,468
2037-38	$318,468	$88,112	3.00 %	$3,185	$0	$0	$0	$409,764
2038-39	$409,764	$90,755	3.00 %	$4,098	$0	$0	$62,424	$442,194
2039-40	$442,194	$93,478	3.00 %	$4,422	$0	$0	$392,097	$147,997
2040-41	$147,997	$96,282	3.00 %	$1,480	$0	$0	$24,705	$221,054

YEAR	STARTING BALANCE	CONTRIBUTIONS	PERCENT CHANGE	INTEREST	SPECIAL ASSMNT	ADDTIONAL CAPITAL	EXPENDITURE FUTURE COST	ENDING BALANCE
2041-42	$221,054	$99,171	3.00 %	$2,211	$0	$0	$0	$322,436
2042-43	$322,436	$102,146	3.00 %	$3,224	$0	$0	$0	$427,806
2043-44	$427,806	$105,210	3.00 %	$4,278	$0	$0	$0	$537,294

Current Reserve Items and Expenditure Planning

Grouped by Category

LOCATION ASSET №	NAME	NEXT REPL	EST LIFE	ADJ LIFE	REM USEFUL LIFE	COST PER MEASURE	QTY	CURRENT COST
Site								
1	Full depth sectional repairs to concrete streets	3/1/2024	5y 0m	5y 0m	0y 0m	$139.725	1675	$234,039
2	Replace wood tie retaining wall	1/1/2025	35y 0m	N/A	0y 10m	$74.52	72	$5,365
3	Ongoing common area drainage repairs/improvements	1/1/2026	5y 0m	5y 0m	1y 10m	$10,350.00	1 Allow	$10,350
4	Replace streetlights	1/1/2039	30y 0m	30y 0m	14y 10m	$2,328.75	16 Ea	$37,260
5	Allocation for ongoing signage replacement	1/1/2028	8y 0m	N/A	3y 10m	$5,175.00	1 Allow	$5,175
6	Allocation for paved catch basin replacement	1/1/2026	5y 0m	5y 0m	1y 10m	$1,707.75	2 Ea	$3,416
								$295,605

Annual Reserve Expenditure Budget Projection

Annual Expenditure Table 2024 to 2033

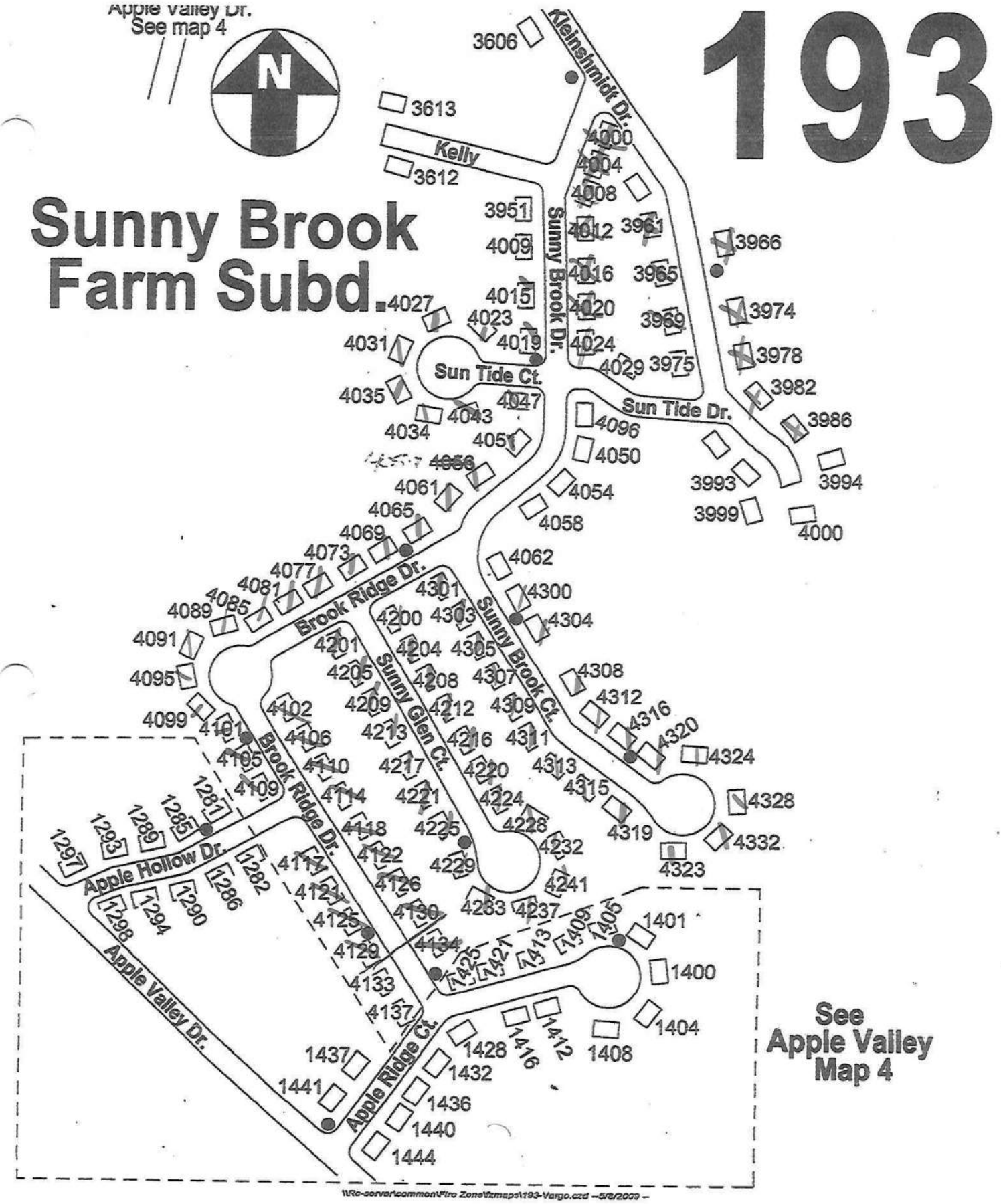
LOCATION RESERVE ITEM	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Site										
Allocation for paved catch basin replacement		$3,659					$4,345			
Full depth sectional repairs to concrete streets	$234,039					$277,965				
Ongoing common area drainage repairs/improvements		$11,087					$13,168			
Total Site	**$234,039**	**$14,746**				**$277,965**	**$17,514**			
Total	**$234,039**	**$14,746**				**$277,965**	**$17,514**			

Reserve Expenditure Budget Projection Summary

YEAR	FUTURE DOLLARS
2024	$234,039
2025	$14,746
2026	$0
2027	$0
2028	$0
2029	$277,965
2030	$17,514
2031	$0
2032	$0
2033	$0
2034	$330,136
2035	$20,801
2036	$0
2037	$0
2038	$62,424
2039	$392,097
2040	$24,705
2041	$0
2042	$0
2043	$0
Total Future Cost - With Inflation	$1,374,425
Total Current Cost - No Inflation	$1,237,741

APPENDIX B

GRAPHIC EXHIBITS


193
Sunny Brook Farm Subd.
Apple Valley Dr.
See map 4
N
Kleinschmidt Dr.
Kelly
Sunny Brook Dr.
Sun Tide Ct.
Sun Tide Dr.
Brook Ridge Dr.
Sunny Brook Ct.
Sunny Glen Ct.
Apple Hollow Dr.
Apple Ridge Ct.
Apple Valley Dr.
3606
3613
3612
3951
4009
4015
4027
4023
4019
4031
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4043
4034
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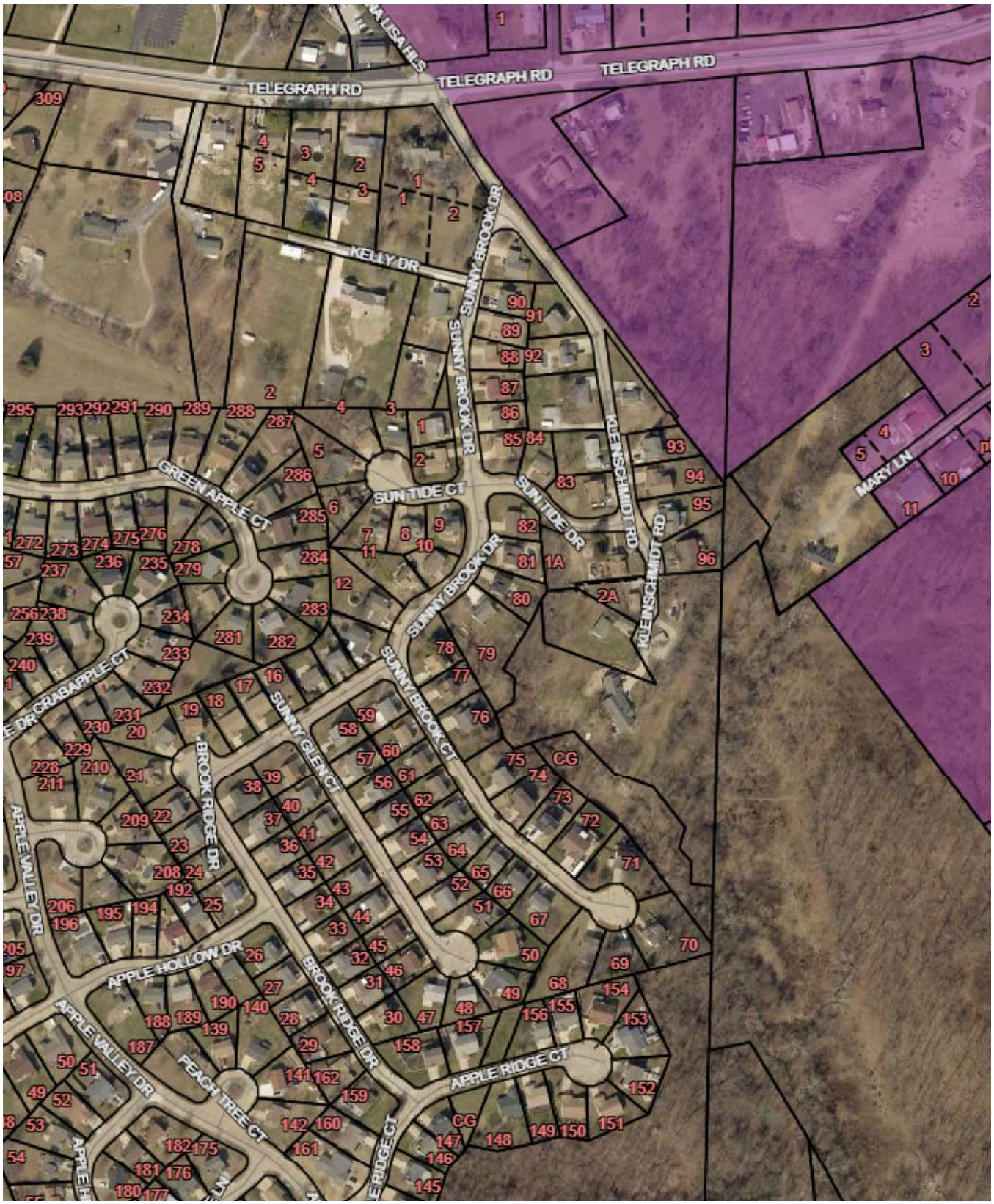
1441
See Apple Valley Map 4


TELEGRAPH RD
TELEGRAPH RD
TELEGRAPH RD
KELLY DR
SUNNY BROOK DR
SUNNY BROOK DR
SUNNY BROOK DR
SUNNY BROOK CT
SUNNY GLEN CT
SUN TIDE CT
SUN TIDE DR
KUENSCHMIDT RD
KUENSCHMIDT RD
GREEN APPLE CT
CRABAPPLE CT
APPLE VALLEY DR
APPLE VALLEY DR
APPLE HOLLOW DR
BROOK RIDGE DR
BROOK RIDGE DR
BROOK RIDGE CT
APPLE RIDGE CT
PEACH TREE CT
MARY LN

Trustees of Sunny Brook Farm
Income & Disbursement Statement
09/01/2022 through 09/30/2022

Account Name: Primary

		09/01/2022 through 09/30/2022		YTD	
Beginning Balance			**$27,468.97**		**$18,315.07**
Receipts					
0009	Legal and Costs Recovered	$0.00		$131.75	
0012	Trustee Assessment	$99.00		$18,899.00	
0014	Miscellaneous	$0.00		$170.00	
0027	Recording & Releasing	$0.00		$330.00	
0031	Late Fees	$136.00		$3,700.00	
	Total Receipts		**$235.00**		**$23,230.75**
Disbursements					
1100	Legal Services	$0.00		-$1,203.26	
1200	General Liability Insurance	$0.00		-$799.00	
2000	Common Ground Maintenance	-$135.00		-$905.00	
2010	Snow Removal	$0.00		-$5,110.00	
2565	Subdivision Signs & Posts	$0.00		-$381.85	
3605	Postoffice Box Rental	$0.00		-$232.00	
3710	Website Expenses	$0.00		-$120.00	
5500	Electric Expenses	-$360.05		-$3,170.64	
5700	Postage	$0.00		-$178.06	
5720	Office and Copy Supplies	$0.00		-$83.37	
5725	Recording Fees	-$81.00		-$432.00	
5900	Collection Fee	-$18.80		-$1,821.52	
	Total Disbursements		**-$594.85**		**-$14,436.70**
Ending Balance			**$27,109.12**		**$27,109.12**

Trustees of Sunny Brook Farm
Income & Disbursement Statement
09/01/2022 through 09/30/2022

Account Name: Primary

Receipts

Date	Deposit/Check #	Received From/PayableTo	Amount	Posting Code
	Collection	Trustee Assessment	$99.00	0012
	Collection	Late Fees	$136.00	0031
		Total Receipts	**$235.00**	

Disbursements

Date	Deposit/Check #	Received From/PayableTo	Amount	Posting Code
09/09/2022	31950334	Midlands Mainteance	-$135.00	2000
09/09/2022	31950335	Ameren Missouri	-$360.05	5500
09/30/2022	EFT	City & Village Tax Office LLC	-$81.00	5725
09/30/2022	00007625	City & Village Tax Office, L.L.C.	-$18.80	5900
		Total Disbursements	**-$594.85**	

Trustees of Sunny Brook Farm
Income & Disbursement Statement
09/01/2022 through 09/30/2022

[redacted]

Dep. #	**Trustee Assessment**	**01/01/2017 to 12/31/2017**	
27-09/22CC	Late Fees		136.00
Dep. #	**Trustee Assessment**	**01/01/2019 to 12/31/2019**	
27-09/22CC	Trustee Assessment		99.00
			235.00

Totals

Late Fees: $136.00
Trustee Assessment: $99.00


4057
Wood Tie
Retaining Wall
4061
SUNNY BROOK DR
Esri Community Maps Contributors, County of St. Louis, Jefferson County, MO, Missouri Dept. of Conservation, Missouri DNR, © OpenStreetMap, Microsoft, Esri, HERE, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS, EPA, NPS, US Census Bureau, USDA

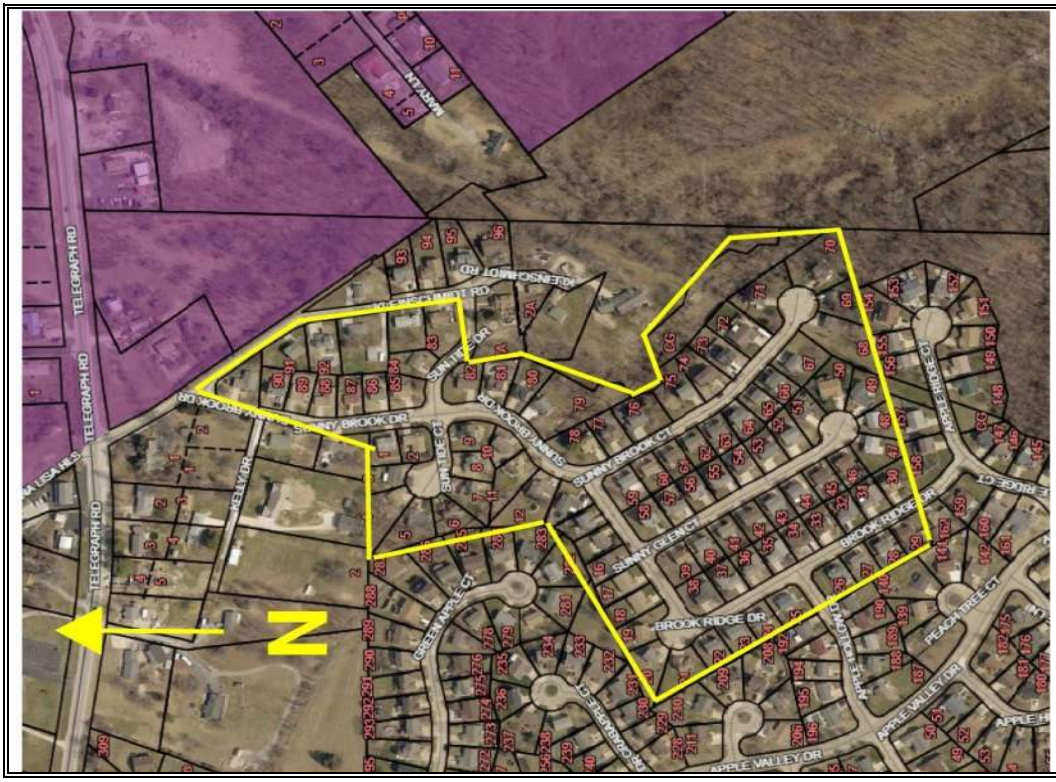
APPENDIX C

PHOTOGRAPHS

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022



Description:

Property line of Sunny Brook Farms HOA

Photo Number
1

Description:

Typical view of the concrete streets

Photo Number
2

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Typical cracking observed throughout the streets

Photo Number
3

Description:

Patching along Sun Tide Dr

Photo Number
4

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Cracking, settling, and patching at the intersection of Sun Tide Dr and Sunny Brook Dr

Photo Number
5

Description:

Cracked and settled concrete

Photo Number
6

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

View of the wood tie retaining wall between 4057 and 4061 Sunny Brook Dr

Photo Number
7

Description:

Deterioration in the wood tie retaining wall

Photo Number
8

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Deterioration in the wood tie retaining wall

Photo Number
9

Description:

Stone rip rap installed in the creek north of Sunny Brook Ct

Photo Number
10

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Drainage creek

Photo Number
11

Description:

Drainage inlet

Photo Number
12

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Drainage piping and natural swale

Photo Number
13

Description:

Typical drainage piping

Photo Number
14

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Typical streetlight

Photo Number
15

Description:

Typical street sign

Photo Number
16

Location:
Sunny Brook Farms
Arnold, MO

Photo Taken by:
Ross Hardy, RS

Date:
11/15/2022

Description:

Typical catch basin with debris in the concrete streets

Photo Number
17

Description:

Typical street catch basin

Photo Number
18

Component Details

1 - Full depth sectional repairs to concrete streets

Basic Info

Type of Cost:	Repairs & Maintenance
Location:	Site
Condition:	Fair

Comments/Notes

fair to locally poor condition; 10% every 5 years

Useful Life

Last Activity Date:	N/A
Est. Useful Life:	5yr
Remaining Useful Life:	0yr
Next Activity Date:	3/1/2024

Financial Data

Estimate Date:	1/1/2023
Cost Per :	$135.00
Total Quantity:	16750
Percent of Total to Maintain:	10%
Quantity to Maintain:	1675
Total Current Cost:	$234,039
Inflation Rate:	3.50 %
Total Expenditures:	$1,234,237

View of the concrete streets

View of the concrete streets

2 - Replace wood tie retaining wall

Basic Info

Type of Cost:	Replacement
Location:	Site
Condition:	Poor

Comments/Notes

deteriorated; at rear of 4057 Sunny Brook Dr

Useful Life

Last Activity Date:	N/A
Est. Useful Life:	35yr
Remaining Useful Life:	0yr 10mo
Next Activity Date:	1/1/2025

Financial Data

Estimate Date:	1/1/2023
Cost Per :	$72.00
Total Quantity:	72
Total Current Cost:	$5,365
Inflation Rate:	3.50 %
Total Expenditures:	$0

Wood tie retaining wall

Deterioration in the retaining wall

3 - Ongoing common area drainage repairs/improvements

Basic Info

Type of Cost:	Repairs & Maintenance
Location:	Site
Condition:	Fair

Comments/Notes

allocation for periodic drainage repairs every 5 years

Useful Life

Last Activity Date:	N/A
Est. Useful Life:	5yr
Remaining Useful Life:	1yr 10mo
Next Activity Date:	1/1/2026

Financial Data

Estimate Date:	1/1/2023
Cost Per Allow:	$10,000.00
Total Quantity:	1 Allow
Total Current Cost:	$10,350
Inflation Rate:	3.50 %
Total Expenditures:	$58,470

Typical drainage creek augmented with stone rip rap

Typical drainage swale

4 - Replace streetlights

Basic Info

Type of Cost:	Replacement
Location:	Site
Condition:	Fair

Useful Life

Last Activity Date:	N/A
Est. Useful Life:	30yr
Remaining Useful Life:	14yr 10mo
Next Activity Date:	1/1/2039

Financial Data

Estimate Date:	1/1/2023
Cost Per Ea:	$2,250.00
Total Quantity:	16 Ea
Total Current Cost:	$37,260
Inflation Rate:	3.50 %
Total Expenditures:	$62,424

Typical streetlight

5 - Allocation for ongoing signage replacement

Basic Info

Type of Cost:	Replacement
Location:	Site
Condition:	Good

Comments/Notes

street signs, speed limits, stop signs, etc

Useful Life

Last Activity Date:	N/A
Est. Useful Life:	8yr
Remaining Useful Life:	3yr 10mo
Next Activity Date:	1/1/2028

Financial Data

Estimate Date:	1/1/2023
Cost Per Allow:	$5,000.00
Total Quantity:	1 Allow
Total Current Cost:	$5,175
Inflation Rate:	3.50 %
Total Expenditures:	$0

Typical street sign

Typical street sign

6 - Allocation for paved catch basin replacement

Basic Info

Type of Cost:	Replacement
Location:	Site
Condition:	Good

Comments/Notes

some concerns with street paved catch basins; some settling observed; 22 total basins; funds to replace 2 every 5 years

Typical catch basin in the concrete streets

Useful Life

Last Activity Date:	N/A
Est. Useful Life:	5yr
Remaining Useful Life:	1yr 10mo
Next Activity Date:	1/1/2026

Financial Data

Estimate Date:	1/1/2023
Cost Per Ea:	$1,650.00
Total Quantity:	2 Ea
Total Current Cost:	$3,416
Inflation Rate:	3.50 %
Total Expenditures:	$19,295

APPENDIX D

REFERENCE DOCUMENTS

Reserve Specialist® (RS®) Designation

NATIONAL RESERVE STUDY STANDARDS

General Information About Reserve Studies

One of the primary responsibilities of the board of directors of a community association is to protect, maintain, and enhance the assets of the association. To accomplish this objective, associations must develop multi-year plans to help them anticipate and responsibly prepare for the timely repair and replacement of common area components such as roofs, roads, mechanical equipment, and other portions of the community's common elements.

Originally published in 1998, the National Reserve Study Standards provide a consistent set of terminology, calculations, and expectations so reserve study providers and those they serve together can build a successful future for millions of community association homeowners across the country.

A reserve study is made up of two parts, the **physical analysis** and the **financial analysis**. The physical analysis includes the component inventory, condition assessment, and life and valuation estimates. The component inventory should be relatively stable from year to year, while the condition assessment and life and valuation estimate change from year to year.

The financial analysis is made up of an analysis of the client's current reserve fund status (measured in cash or as percent funded) and a recommendation for an appropriate reserve contribution rate (a funding plan).

Physical analysis

- Component inventory
- Condition assessment
- Life and valuation estimates

Financial analysis

- Fund Status
- Funding Plan

Levels of Service

The following three categories describe the various types of reserve studies, from exhaustive to minimal.

I. Full.

A reserve study in which the following five reserve study tasks are performed:

- Component inventory
- Condition assessment (based upon on-site visual observations)
- Life and valuation estimates
- Fund Status
- Funding Plan

II. Update, With Site Visit/On-Site Review.

A reserve study update in which the following five reserve study tasks are performed:

- Component inventory (verification only, not quantification)
- Condition assessment (based upon on-site visual observations)
- Life and valuation estimates
- Fund Status
- Funding Plan

III. Update, No-Site-Visit/Off Site Review.

A reserve study update with no on-site visual observations in which the following three reserve study tasks are performed:

- Life and valuation estimates
- Fund Status
- Funding Plan

IV. Preliminary, Community Not Yet Constructed.

A reserve study prepared before construction that is generally used for budget estimates. It is based on design documents such as the architectural and engineering plans. The following three tasks are performed to prepare this type of study.

- Component inventory
- Life and valuation estimates
- Funding Plan

Terms and Definitions

CAPITAL IMPROVEMENTS: Additions to the association's common elements that previously did not exist. While these components should be added to the reserve study for future replacement, the cost of construction should not be taken from the reserve fund. CASH FLOW METHOD: A method of developing a reserve funding plan 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: The individual line items in the reserve study developed or updated in the physical analysis. These elements form the building blocks for the reserve study. These components comprise the common elements of the community and typically are: 1. association responsibility, 2. with limited useful life expectancies, 3. predictable remaining useful life expectancies, and 4. above a minimum threshold cost. It should be noted that in certain jurisdictions there may be statutory requirements for including components or groups of components in the reserve study.

COMPONENT INVENTORY: The task of selecting and quantifying reserve components. This task can be accomplished through on-site visual observations, review of association design and organizational documents, review of association precedents, and discussion with appropriate representative(s) of the association.

COMPONENT METHOD: A method of developing a reserve funding plan where the total contribution is based on the sum of contributions for the individual components.

CONDITION ASSESSMENT: The task of evaluating the current condition of the component based on observed or reported characteristics.

EFFECTIVE AGE: The difference between useful life and remaining useful life. Not always equivalent to chronological age, since some components age irregularly. Used primarily in computations.

FINANCIAL ANALYSIS: The portion of a reserve study where the current status of the reserves (measured as cash or percent funded) and a recommended reserve contribution rate (funding plan) are derived, and the projected reserve income and expense over a period of time are presented. The financial analysis is one of the two parts of a reserve study.

FULLY FUNDED: 100 percent funded. When the actual (or projected) reserve balance is equal to the fully funded balance.

FULLY FUNDED BALANCE (FFB): An indicator against which the actual (or projected) reserve balance can be compared. The reserve balance that is in direct proportion to the fraction of life "used up" of the current repair or replacement cost. This number is calculated for each component, and then summed for an association total.

> FFB = Current Cost X Effective Age/Useful Life
>
> Example: For a component with a $10,000 current replacement cost, a 10-year useful life and effective age of 4 years the fully funded balance would be $4,000.

FUND STATUS: The status of the reserve fund reported in terms of cash or percent funded.

FUNDING GOALS: Independent of methodology used, the following represent the basic categories of funding plan goals. They are presented in order of greatest risk to least risk. Risk includes, but is not limited to, cash problems, special assessments, and deferred maintenance.

> Baseline Funding: Establishing a reserve funding goal of allowing the reserve cash balance to never be below zero during the cash flow projection. This is the funding goal with the greatest risk due to the

variabilities encountered in the timing of component replacements and repair and replacement costs.

Threshold Funding: Establishing a reserve funding goal of keeping the reserve balance above a specified dollar or percent funded amount. Depending on the threshold selected, this funding goal may be weaker or stronger than “Fully Funded” with respective higher risk or less risk of cash problems.

Full Funding: Setting a reserve funding goal to attain and maintain reserves at or near 100 percent funded. This is the most conservative funding goal.

It should be noted that in certain jurisdictions there may be statutory funding requirements that would dictate the minimum requirements for funding.

FUNDING PLAN: An association’s plan to provide income to a reserve fund to offset anticipated expenditures from that fund. The plan must be a minimum of twenty (20) years.

FUNDING PRINCIPLES: The reserve provider must provide a funding plan addressing these principles.

- Sufficient funds when required
- Stable contribution rate over the years
- Equitable contribution rate over the years
- Fiscally responsible

LIFE AND VALUATION ESTIMATES: The task of estimating useful life, remaining useful life, and current repair or replacement costs for the reserve components.

PERCENT FUNDED: The ratio, at a particular point in time related to the fiscal year end, of the actual (or projected) reserve balance to the fully funded balance, expressed as a percentage. While percent funded is an indicator of an association’s reserve fund size, it should be viewed in the context of how it is changing due to the association’s reserve funding plan in light of the association’s risk tolerance.

PHYSICAL ANALYSIS: The portion of the reserve study where the component inventory, condition assessment, and life and valuation estimate tasks are performed. This represents one of the two parts of the reserve study.

REMAINING USEFUL LIFE (RUL): Also referred to as “remaining life” (RL). The estimated time, in years, that a reserve component can be expected to serve its intended function. Projects expected to occur in the initial year have zero remaining useful life.

REPLACEMENT COST: The cost to replace, repair, or restore the component to its original functional condition during that particular year, including all related expenses (including but not limited to shipping, engineering and design, permits, installation, disposal, etc.).

RESERVE BALANCE: Actual or projected funds, as of a particular point in time that the association has identified, to defray the future repair or replacement cost of those major components that the association is obligated to maintain or replace. Also known as reserves, reserve accounts, cash reserves. Based on information provided and not audited.

RESERVE PROVIDER: An individual who prepares reserve studies. In many instances the reserve provider will possess a specialized designation such as the Reserve Specialist (RS) designation provided by Community Associations Institute (CAI). This designation indicates that the provider has shown the necessary skills to perform a reserve study that conforms to these standards.

RESERVE PROVIDER FIRM: A company that prepares reserve studies as one of its primary business activities.

RESERVE STUDY: A budget planning tool which identifies the components that the association is responsible to maintain or replace, the current status of the reserve fund, and a stable and equitable funding plan to offset the

anticipated future major common area expenditures. The reserve study consists of two parts: the physical analysis and the financial analysis.

RESPONSIBLE CHARGE: A Reserve Specialist (RS) in responsible charge of a reserve study shall render regular and effective supervision to those individuals performing services that directly and materially affect the quality and competence of services rendered by the Reserve Specialist. A Reserve Specialist shall maintain such records as are reasonably necessary to establish that the Reserve Specialist exercised regular and effective supervision of a reserve study of which he or she was in responsible charge. A Reserve Specialist engaged in any of the following acts or practices shall be deemed not to have rendered the regular and effective supervision required herein:

1. The regular and continuous absence from principal office premises from which professional services are rendered; except for performance of field work or presence in a field office maintained exclusively for a specific project;
2. The failure to personally inspect or review the work of subordinates where necessary and appropriate;
3. The rendering of a limited, cursory or perfunctory review of plans or projects in lieu of an appropriate detailed review; and
4. The failure to personally be available on a reasonable basis or with adequate advance notice for consultation and inspection where circumstances require personal availability.

SPECIAL ASSESSMENT: A temporary assessment levied on the members of an association in addition to regular assessments. Note that special assessments are often regulated by governing documents or local statutes.

USEFUL LIFE (UL): The estimated time, in years, that a reserve component can be expected to serve its intended function if properly constructed in its present application or installation.

Reserve Study Contents

The following is a list of the minimum contents to be included in the Reserve Study.

1. A summary of the association's number of units, physical description and reserve fund financial condition.
2. A projection of reserve starting balance, recommended reserve contributions, projected reserve expenses, and projected ending reserve fund balance for a minimum of 20 years.
3. A tabular listing of the component inventory, component quantity or identifying descriptions, useful life, remaining useful life and current replacement cost.
4. A description of methods and objectives utilized in computing the Fund Status and development of the Funding Plan.
5. Source(s) utilized to obtain component repair or replacement cost estimates.
6. A description of the level of service by which the Reserve Study was prepared.
7. Fiscal year for which the Reserve Study is prepared.

Disclosures

The following are the minimum disclosures to be included in the Reserve Study:

1. General: Description of the other involvement(s) with the association, which could result in actual or perceived conflicts of interest.
2. Physical Analysis: Description of how thorough the on-site observations were performed: representative samplings vs, all common areas, destructive testing or not, field measurements vs. drawing take-offs, etc.
3. Financial Analysis: Description of assumptions utilized for interest and inflation, tax and other outside factors.
4. Personnel Credentials: State or organizational licenses or credentials carried by the individual responsible for Reserve Study preparation or oversight.
5. Update Reports: Disclosure of how the current work is reliant on the validity of prior Reserve Studies.
6. Completeness: Material issues which, if not disclosed, would cause a distortion of the association's situation.
7. Reliance on Client Data: Information provided by the official representative of the association regarding financial, physical, quantity, or historical issues will be deemed reliable by the consultant and assembled for the association's use, not for the purpose of performing an audit, quality/forensic analysis, or background checks of historical records.
8. Reserve Balance: The actual or projected total presented in the Reserve Study is based upon information provided and was not audited.
9. Component Quantities: For update with site visit and update no site visit levels of service, the client is considered to have deemed previously developed component quantities as accurate and reliable.
10. Reserve Projects: Information provided about reserve projects will be considered reliable. Any on-site inspection should not be considered a project audit or quality inspection.

TERMS OF REFERENCE RESERVE STUDY	
Association	The unit owners' association. May be referred to with different terminology in legal covenants of incorporation.
Board	Elected officers of the Association with fiduciary responsibility for the community's common holdings. May be referred to with different terminology in legal covenants of incorporation.
Owner	Individual Unit owner, a Member or the Association
Property Manager	Professional organization through which the Board delegates responsibilities for operations and maintenance of the community.
Excellent	Component or system is in "as new" condition, requiring no rehabilitation and should perform in accordance with expected performance.
Good	Component or system is sound and performing its function, although it may show signs of normal wear and tear. Some minor rehabilitation work may be required.
Fair	Component or system falls into one or more of the following categories: a) Workmanship not in compliance with commonly accepted standards, b) Evidence of previous repairs not in compliance with commonly accepted practice, c) Component or system is obsolete, d) Component or system approaching end of expected performance. Repair or replacement is required to prevent further deterioration or to prolong expected life.
Poor	Component or system has either failed or cannot be relied upon to continue performing its original function as a result of having exceeded its expected performance, excessive deferred maintenance, or state of disrepair. Present condition could contribute to or cause the deterioration of other adjoining elements or systems. Repair or replacement is required.
Basis of Comparison	Ratings are determined by comparison to other buildings of similar age and construction type.
Left, Right, Front, Rear	Directions are taken from the viewpoint of an observer standing at the property frontage and facing it. Or, for a building within a campus setting, the viewpoint of an observer standing in front of the principal entrance and facing it.
Current Deficiency Immediate Expense	We will note any observed or reported physical condition which requires immediate action to correct an existing or potential safety hazard, an enforceable building code violation, or the poor or deteriorated condition of a critical element or system. Also, to address any conditions which, if left "as is", would likely result in the failure of a critical element or system. Such items will be noted in our report even if they do not require a reserve expenditure.
Short-Term Reserve Expenditures	Correction of physical deficiencies including deferred maintenance, which may not warrant immediate attention, but require repairs or replacements which should be undertaken on a priority basis, taking precedence over preventive maintenance work within a one-year time frame. Included are physical deficiencies resulting from improper design, faulty installation, and/or substandard quality of original systems or materials. Components or systems that have exceeded their expected useful life and require repair or replacement within a one-year time frame are also included. Observed minor issues which would typically be addressed as normal operations & maintenance work may not be noted in the report.
Long-term Reserve expenditures	Non-routine repairs, replacements or planned improvements that will require significant expenditure during the study period. Included are items that will reach the end of their estimated useful life or which, in the opinion of the engineer, will require such expense during that time. If saving for longer- term expenditures is desired, then allowances or contingencies for such items may also be included. Observed minor issues which would typically be addressed as normal operations & maintenance work may not be noted in the report.

Expected Useful Life (EUL)	As components age, they wear and deteriorate at varying rates, depending on their service and exposure. Although it is an inexact science, various financial underwriters, data services and trade organizations publish guidance regarding the EULs of typical building materials and operating systems. For short-lived components, their EUL is used as the frequency between periodic repairs or replacements. Some systems' economic life may be shortened because improved equipment or materials has become available which is less costly to operate or maintain.
Remaining Useful Life (RUL)	The simple equation for determining remaining useful life before repair or replacement is: **EUL – Age = RUL** However, based on our evaluation of a component and our professional judgment, we may assign a shorter or longer RUL to actual items being considered.

BUILDING SYSTEMS AND COMPONENTS COMMON ABBREVIATIONS AND ACRONYMS			
ACM	Asbestos Containing Material	**HW**	Hot Water
ACT	Acoustic Ceiling Tile	**HWH**	Hot Water Heater (*domestic*)
ADA	Americans with Disabilities Act	**IBC**	International Building Code
AHU	Air Handling Unit	**IRC**	International Residential Code
ASHRAE	American Society of Heating, Refrigeration and Air-Conditioning Engineers	**KVA**	Kilovolt-Ampere
ASTM	American Society for Testing and Materials	**LF**	Lineal Foot
BOCA	Building Officials Code Administrators International	**MSL**	Mean Sea Level
BTU	British Thermal Unit	**NEC**	National Electric Code
BTUH	British Thermal Unit / Hour	**NFPA**	National Fire Protection Association
CFM	Cubic Foot / Minute	**MBH**	Thousand British Thermal Units / Hour
CI	Cast Iron (*piping*)	**MDP**	Main Distribution Panel (*electric power*)
CIP	Cast In Place (*concrete*)	**O&M**	Operations & Maintenance
CMU	Concrete Masonry Unit (*block*)	**OSB**	Oriented Strand Board (*sheathing or decking*)
CPVC	Chlorinated Poly Vinyl Chloride (*piping*)	**PCA**	Property Condition Assessment
CW	Cold Water	**PCR**	Property Condition Report
DI	Ductile Iron (*piping*)	**PE**	Licensed Professional Engineer
EIFS	Exterior Insulating and Finishing System	**PVC**	Poly Vinyl Chloride (*piping and siding*)
EPDM	Ethylene Propylene Diene Monomer	**PTAC**	Packaged Terminal Air Conditioning Unit
EUL	Expected Useful Life	**ROM**	Rough Order of Magnitude
FCU	Fan Coil Unit	**RUL**	Remaining Useful Life
FEMA	Federal Emergency Management Agency	**RTU**	Roof Top Unit
FFE	Furniture, Fixtures and Equipment	**SF**	Square Foot
FHA	Forced Hot Air	**SOG**	Slab on Grade (*concrete basement or ground floor*)
FHAA	Fair Housing Act and Amendments	**SQ**	100 Square Feet
FHW	Forced Hot Water	**SY**	Square Yard
FIRM	Flood Insurance Rate Map	**UBC**	Uniform Building Code
FOIA	Freedom of Information Act	**UL**	Underwriters Laboratories
GFI	Ground Fault Interruption (*circuit breaker*)	**VAC**	Volts Alternating Current
GWB	Gypsum Wall Board (*drywall or sheetrock*)	**VAV**	Variable Air Volume box

HID	High Intensity Discharge (*lamp, lighting fixture*)	**VCT**	Vinyl Composition Tile
HVAC	Heating Ventilation and Air Conditioning	**VWC**	Vinyl Wall Covering

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APPENDIX E

APPENDIX E - PROJECT TEAM QUALIFICATIONS

KYLE D. HARDY, P.E., LEED AP, RS

Area of Expertise

Kyle Hardy is President of Criterium-Hardy Engineers, a real estate consulting engineering firm in St. Louis, Missouri. Mr. Hardy performs reserve studies, cost segregation studies, commercial due diligence including Property Condition Assessments (PCA) and Phase 1 Environmental Site Assessments (ESA), residential structural inspections, forensic engineering, design, and construction monitoring. His clients include owners, buyers, lending institutions, investors, insurance companies, community associations, construction contractors, and developers.

Qualifications

Mr. Hardy has over 20 years of facility experience in project management, engineering design, property condition assessments, construction administration, and technical report writing. He has performed thousands of commercial and residential inspections. Prior to joining Criterium-Hardy Engineers his experiences include:

- Technical review of commercial and residential facilities for owners, lenders, buyers, and investors to provide information required to make an informed decision concerning the physical condition of property and the cost associated with those conditions.
- Engineering assessments of site improvements, structural, pavements, building envelope, roof, mechanical, electrical, and plumbing systems.
- Mechanical design including sizing and selection of heating and air conditioning systems, laboratory, and ventilation exhaust systems, piping systems for hydronic heating and cooling systems, energy analysis, fire protection, and plumbing systems.
- Project management responsible for onsite activities including project meetings, field surveying, design, and construction administration activities.

Education and Affiliations

Registered Professional Engineer: Missouri (2006019662), Kansas (28210), Illinois (062-061394), Nebraska (E-19441), and Iowa (P27511)
Bachelor of Science, Mechanical Engineering, University of Missouri - Columbia
Master of Arts, Business Management, Webster University, Webster Groves, MO
CAI Reserve Specialist (RS) designation
LEED Accredited Professional
CSI Construction Documents Technologist (CDT) Certified 2010
American Society of Home Inspectors (ASHI) Certified Member

HARDY CRITERIUM ENGINEERS

ROSS A. HARDY, RS

Area of Expertise

Ross Hardy is Vice President of Criterium-Hardy Engineers, a real estate consulting engineering firm in St. Louis, Missouri. Mr. Hardy is responsible for overall production management, business development, operations, marketing, financial controls, and strategic oversight. Mr. Hardy is also responsible for the management, inspection, and financial analysis of reserve studies. In addition to working with many community associations, Mr. Hardy has a strong background as an executive leader in corporate finance and has extensive building components, construction, and renovation experience. He frequently speaks at seminars and workshops on the benefits of future planning and budgeting for capital repairs and replacement of building components and other assets.

Qualifications

Mr. Hardy has over 15 years in corporate finance leadership roles before joining Criterium-Hardy Engineers in 2018 in his current role. Prior to joining Criterium-Hardy Engineers, Mr. Hardy was the Chief Financial Officer for Shop 'n Save Grocers in Olathe, Kansas and Hornbacher's Grocers in Fargo, ND. In that role, he directed and managed all financial aspects of two large publicly held companies, consisting of annual operating planning, forecasting, capital management, P&L management, variance analysis, and financial insights and recommendations.

Since jointing Criterium-Hardy Engineers, Mr. Hardy has become an expert in:

- Capital Reserve and Transitions Studies for over 100 Homeowner Associations throughout the Midwest.
- Commercial and Residential Property Condition Assessments.
- Project management responsible for onsite activities including project meetings, field surveying, and construction administration activities.
- Cost Segregation Studies aiding in identifying and classifying commercial property assets in support of tax reporting purposes.

Education and Affiliations

Bachelor of Science, Business Administration, University of Missouri - Columbia
Master of Business Administration, Finance, University of Missouri – St. Louis
CAI Reserve Specialist (RS) designation
Executive Board Member with the Community Associations Institute (CAI) Heartland Chapter
CAI Educated Business Partner

HARDY CRITERIUM ENGINEERS