MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

MEMBER OF community ASSOCIATIONS INSTITUTE

Condition Assessment
&
Reserve Fund Plan Update
2018
REDWOOD LAKES

Culpeper, Virginia

Prepared for:
The Board of Directors
&
Austin Realty Management

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

MEMBER OF community ASSOCIATIONS INSTITUTE

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April 13, 2018

Ms. Janelle Westfall, Assistant Association Manager
Austin Realty Management
P. O. Box 3413
Warrenton, Virginia 20188

RE: **CONDITION ASSESSMENT AND RESERVE FUND PLAN UPDATE 2018**
Owners' Association at Redwood Lakes
Culpeper, Virginia
Project No. 8585

Dear Ms. Westfall:

Mason & Mason Capital Reserve Analysts, Inc. has completed the report for Redwood Lakes.

As outlined in our proposal, the report is being submitted to you and the Board of Directors for review and comment. A review of the Summary of Key Issues iii, and Sections 1 and 2 will provide you with our findings and financial analyses. We will be happy to meet with the Board to help them fully understand the issues. If no changes are necessary, please consider this version the final report. If changes are requested, Mason & Mason will make the revisions and re-issue the report. We encourage the Board to complete this process expeditiously and will support the effort.

We genuinely appreciate the opportunity to work with you and the Association.

Sincerely,

Mason & Mason Capital Reserve Analysts, Inc.

James G. Mason III, R. S.
Vice President

James G. Mason, R. S.
Principal

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FOREWORD

PLEASE READ THIS FIRST

This report contains information the Board requires to fulfill its fiduciary responsibilities with respect to the financial health of the Association. Even if you are already familiar with the concepts of capital reserve planning, it requires some study. The information in this report is vital to your Association's financial health. Unless you understand it, your Association may not follow it. This may lead to underfunding and financial stress at some time in the future.

Our years of experience providing reserve analysis to both first-time and multi-update return clients have compelled us to develop a logical funding approach, which is based on generational equity and fairness to common-interest property owners that helps ensure realistic reserve funding levels.

Our approach is neither standard, nor is it necessarily easy to understand without first becoming familiar with some basic concepts. Section 3 explains these concepts in more detail. We want you to understand them because a well-informed Association makes the best decisions for its common-property owners.

SUMMARY OF KEY ISSUES

Different readers will look for different things from this report. Perhaps the *homeowner* will just be looking for the high points. A *prospective buyer* may be looking at the general financial condition of the Association's reserves. A *Board member* should probe deeper in order to understand the financial tools that will be helpful in fulfilling their fiduciary responsibilities to the Association.

The Summary of Key Issues presents a recapitulation of the most important findings of Redwood Lakes' Reserve Fund Plan Update. Each is discussed in greater detail in the body of the report. We encourage the reader to "go deeper" into the report, and we have written it in a way that's understandable to a first-time reader.

Analyzing the capital reserves reveals that:

- The reserve fund is approximately **fully** funded through 2017. **See Paragraph 3.1**. **This is a significant improvement from past years. Our goal is to maintain fully funded status through the end of the 20-year period (2037).**

In order to achieve this goal, the Association should:

- Increase the annual contribution in **2019** from **$11,100** to **$12,705**, and plan on annual increases of **2.5%** to reflect inflation thereafter.
- This represents a 2019 increase from **$3.61** to **$4.13** (a net increase of **$0.52**) per residential unit, per month (based on **256** current homes).

Supporting data are contained in the body of this report, and we encourage the reader to take the time to understand it.

VISUAL EVALUATION METHODOLOGY

The first step in the process is collection of specific data on each of your community's commonly-held components. This information includes quantity and condition of each included component. We collect most of this data during the on-site field survey. When this information is not available in the field, we may obtain it by discussion with those knowledgeable through management or service activities.

The field survey or condition assessment is visual and non-invasive. We don't perform destructive testing to uncover hidden conditions; perform operational testing of mechanical, electrical, plumbing, fire and life safety protection; or perform code compliance analysis.

We make no warranty that every defect has been identified. Our scope of work doesn't include an evaluation of moisture penetration, mold, indoor air quality, or other environmental issues. While we may identify, pedestrian hazards observed during the course of the field survey, this report shouldn't be considered a safety evaluation of components.

Replacement costs are sometimes based on published references, such as R. S. Means. However, our opinions of replacement costs usually include removal and disposal and are usually based on experience with similar projects including information provided by local contractors and reported client experience. Actual construction costs can vary significantly due to seasonal considerations, material availability, labor, economy of scale, and other factors beyond our control.

Projected useful service lives are based on statistical data and our opinion of their current visual condition. No guarantee of component service life expectancies is expressed or implied and none should be inferred by this report. Your actual experience in replacing components may differ significantly from the projections in the report, because of conditions beyond our control or that were not visually apparent at the time of the survey.

1. INTRODUCTION

1.1 Background: Owners' Association at Redwood Lakes will be comprised of 327 (at build-out) single-family homes, located on Sperryville Pike and Virginia Avenue in Culpeper, Virginia. Construction of the community began circa 2002 and continues today. Amenities, including an asphalt drivelane and parking area, concrete sidewalk, pavilion, tot lot, and asphalt footpaths that were constructed circa 2006 in the common area, between Lake Pelham and the single-family homes on Ambleside Drive. The community also maintains two retention ponds and three detention ponds.

We are providing the Condition Assessment and Reserve Fund Plan based on Proposal Acceptance Agreement No. 8585 dated February 28, 2018. Our services are subject to all terms and conditions specified therein.

Mason & Mason did not review the declarations, covenants, or other organization documents pertaining to the establishment and governance of the Owners' Association. Ultimately, the establishment, management, and expenditure of reserves are within the discretion of the Association and its Board of Directors pursuant to their organizational documents and subject to the laws of the applicable jurisdiction. We are not otherwise financially associated with the Management Company or the Association, and we therefore do not have any conflicts of interest that would bias this report. Information provided by Management is deemed reliable. This report is not intended to be an audit or a forensic investigation. This report is not a mandate, but is intended to be a guide for future planning.

Mason & Mason provided a Level I Condition Assessment and Reserve Fund Plan for Redwood Lakes in 2012. This report is a Level II Update of the previous report and includes a new condition assessment. All common components were visually observed. Measurements and quantities were generally accepted from the previous report except where changes have occurred. The update report is a stand-alone document and reference to the previous report should not be necessary.

James G. Mason III, R. S. conducted the field evaluation for this report on April 10, 2018. The weather was clear and the temperature was approximately 44 degrees F. Precipitation had occurred for several days prior to the site visit. The pavements, walkways, and grounds were generally dry and clean of debris.

1.2 Principal Findings: The common assets appear to be in overall good condition. The community is now reaching a 15-year benchmark in terms of replacement of major systems. The asphalt drivelane and parking area are in generally continuing good condition, with only a few minor cracks. No deflection was observed. The asphalt footpaths range from fair to continuing good condition. A minor amount of deflection, longitudinal, and transverse cracking was observed. Any surface deficiencies on the paths should be mitigated to prevent tripping hazards.

The concrete sidewalk panels are in continuing good condition. Very few deficiencies were observed. When there are cracked, settled and/or heaved concrete sidewalks, they are potential tripping hazards. The liability and costs associated with personal injury lawsuits resulting primarily from sidewalk tripping hazards are too great to defer repair. It is our opinion that addressing deficiencies, which pose a hazard to pedestrians, should not be deferred. As such, we recommend correcting the tripping hazards when present throughout the sidewalk and patio as soon as practicable.

Site features such as the new entrance monument, new monument lighting, signage, light poles and fixtures, concrete retaining wall, metal railings, pavilion roofing, tot lot, outdoor furniture, and the ponds appear to be in continuing good condition.

We understand that the retention ponds are fully the Associations responsibility. There are a number of pond maintenance issues such as shoreline stabilization, chemical applications for weed control, bacterial improvement to control algae, surface aerators, diffusers, dredging, beaver control, and mosquito control, all of which may be required at some time over the life of the system. Professional pond evaluations should be conducted every ten years, mainly to monitor the sediment levels, and ensure that the ponds are not filling with sediment. Pond dredging can be a very expensive undertaking, and should be closely monitored. We have included a pond evaluation with this update, which should be conducted soon. This evaluation should include sedimentation levels, and be used as a baseline for future evaluations. If the ponds are building sediment, dredging should be included in future study updates.

Currently, the reserve fund is adequate, and requires only minimal annual adjustments in contributions to maintain fully funded status through to the end of twenty years.

In order to maintain the physical attributes that preserve property values and provide a safe environment for occupants and guests, a series of capital expenditures should be anticipated. Consequently, we have scheduled near-, mid-, and late-term restoration and replacement projects based on anticipated need from our experience with similar properties.

Generally, our approach is to group appropriately related component replacement items into projects. This creates a more realistic model and allows a grouping time line that is more convenient to schedule and logical to accomplish. Please see the Table 1 Discussion, Column 17, for specific information.

2. FINANCIAL ANALYSIS

We track the annual inflation rate among our clients based on their reported costs for typical services. A 3.5% annual rate reflects their general pre-recession experience. However, currently we are seeing somewhat lower rates and we are using 2.5%. Interest income has dropped substantially, and many smaller Associations and Condominiums are reduced to savings accounts or certificates of deposit, which are yielding 1% or less. Unlike reserves, interest income is taxable, so this further reduces the net gain. It is prudent to keep a close watch on the economy and be ready to respond by updating the reserve fund plan as economic changes dictate.

2.1 Calculation Basics: The Association is on a calendar fiscal year. Management reported that the un-audited reserve fund balance, including cash and securities, as of **December 31, 2017,** was **$170,530**. We have used a **1.00%** annual interest income factor and a **2.50%** inflation factor in our calculations. The total expenditures for the twenty-year period for both the **Cash Flow Method** and **Component Method** are projected to be **$335,108**.

2.2 Current Funding Analysis, Cash Flow Method (Table 3): The 2018 annual contribution to reserves has been set at **$11,100 with a presumed 2.5% annual increase**. At this level, the total for all annual contributions for the twenty-year period would be **$283,546**, and the total interest income is projected to be **$32,258**. **This funding results in unrealistically low balances throughout the twenty-year period and loses fully-funded status.**

2.3 Alternative Funding Analysis, Cash Flow Method, Hybrid Approach (Table 3.1): This plan provides the annual contributions necessary to maintain balances more consistent with the **fully funded goal by increasing the annual contribution to $12,705 in 2019 and providing an annual escalation factor of 2.50%, matching inflation thereafter. This plan allows for a gradual increase over time after the initial increase, and addresses generational equity issues.** The total for all annual contributions for the twenty-year period would be **$315,323**, and the total interest income is projected to be **$35,233**. The **fully funded** balance in **2037** is **$185,978.**

2.4 Funding Analysis, Component Method (Table 4): This method of funding would require variable annual contributions, averaging **$15,712** over the twenty-year period. The total for all annual contributions would be **$314,238**, and the total interest income is projected to be **$36,318**. The **fully funded** balance in **2037** is **$185,978**. The Component Method model considers the current reserve fund balance in computing individual component contributions for current cycles.

3. METHODS OF FUNDING

Once the data are compiled, our proprietary software produces two distinct funding methods. These are the **Component Method and Cash Flow Method**. Each of these methods is used in analyzing your Association's reserve status and each plays a role in the Board's decision on how to fund reserves. While we provide the guidance, the choice of funding method is ultimately the prerogative of the Board. Considering the vulnerability of the Association's assets, its risk tolerance, and its ability to fund contributions, the Board should decide how the Association will fund its reserves and at what level.

3.1 Component Method: As reserve analysts, we recognize the value of Component Method calculations as they address both future replacement costs and the time remaining to fund them. **This is the foundation of the savings concept. You will see the term "fully funded." This simply means you are on schedule, in any given year, to accrue sufficient funds by the component's replacement date. It does not mean you must have 100% of the funds ahead of time.** Simplified Example: A component projected to cost $1,000 at the end of its 10-year life cycle would require a $100 annual contribution in each of the 10 years. As long as you follow this contribution plan, the component is "fully funded."

Prior to determining the actual required annual contribution, a complex calculation apportions the existing reserve fund to each component. Each component's remaining unfunded balance forms the basis for the required contribution going forward.

Funds set aside for replacement of individual components are not normally used for the replacement of other components, even though the funds reside in the same bank account. In rare cases where a reserve fund is actually overfunded, $0 will be displayed on the Component Method tables, indicating that the component is fully funded for that cycle.

While the time basis for the report is a 20-year period, the Component Method allows for inclusion of long-life components that may require replacement after the specified period. **This allows for funding of long-life components contemporaneously, which is fundamentally fair if they are serving the current owners. This is in contrast to saying, "if it doesn't require replacement within our 20-year period, we're going to ignore it."**

Due to replacement cycle time and cost differentials, the Component Method typically results in annual contribution fluctuations, which often makes it difficult for a Board to implement. **However, its guidance is essential and invaluable for understanding funding liabilities and making informed recommendations.** Table 4 shows these calculations, as well as projects interest income, expenses with inflation, and yearly balances, which will be "fully funded."

3.2 Cash Flow Method: The Cash Flow Method is easier to implement. It is a simple 20-year spread sheet that includes the starting balance, current contribution, interest income, inflation rate, projected expenses, and resulting yearly balances. The Cash Flow Method pools the contributions allocated to each of the Association's common components into a single "account."

Table 3 shows these calculations. This table reflects the information you provided on your reserve fund balance and current contribution. It also shows projected yearly positive or negative balances. **The Cash Flow Method doesn't include replacement funding for anything beyond the 20-year period, thus leaving a potential shortfall in funding and failing to address generational equity if not specifically set to do so.** It doesn't provide any real guidance beyond the basic information. There are several variations on cash flow goals such as Threshold Funding (just enough to stay positive) and Percentage Funding (a predetermined level based on some arbitrary percentage), but these schemes don't address the reality of fully funding, and typically are just a way of passing the obligation on to the next generation.

3.3 Hybrid Approach: Please note that this is not a method, rather a way (approach) for us to utilize the Cash Flow Method, while insuring the appropriate funding levels are achieved long-term. Our Hybrid Approach uses the projected fully funded balance at the end of the 20-year period from Table 4 as a funding goal. We then set up Cash Flow funding plans. Table 3 is your "*where we are now*" Cash Flow spreadsheet modeling your reserve balance and current contribution. Table 3.1 (and possibly others) provides alternative(s) to this that meet the fully funded goal from Table 4.

We usually establish a new Cash Flow contribution that requires only small annual inflationary increases to reach the fully funded goal at the end of the 20-year period. This has the added effect of establishing a funding plan that addresses inflation. The contribution in the first year, adjusted for inflation, is equal to the contribution in the last year, based on inflated dollars (future value of money). This approach will also allow underfunded Associations the time to catch up, mitigating undue hardships. It balances the risk of temporary underfunding with the benefit of consistent predictable increasing contributions. The combination of the Component and Cash Flow Methods (Hybrid Approach) provides the advantages of both methods.

4. RESERVE PROGRAMMING

The Mason & Mason proprietary software used to produce the financial tables (Tables 1 through 4) have been under continual refinement for over a decade. It is unique in the industry as it provides comprehensive modeling through Microsoft Access and Excel that addresses the many challenges of reserve funding, allows analysts and clients to run "what if" scenarios, provides an easy to understand matrix of views and functions, and is easily provided to clients through e-mail.

4.1 Interest Income on Reserve Funds: Most Associations invest at least part of their reserve funds. Small Associations may simply use a savings account or certificates of deposit, while large Associations may have multiple investments with short-, medium-, and long-term instruments. One issue that is difficult to quantify is the percentage of funds invested. Some Associations invest a fairly substantial portion, while others hold back due to current cash outflow obligations. Some Associations do not reinvest the investment proceeds in their reserves; rather they divert the cash into their operations fund. We do not agree with this approach as it has the effect of requiring additional reserve contributions to make up for the difference. There is also the issue of changing rates over the 20-year period. In the recent past, we have seen large swings in relatively short time periods. While reserve funds are not usually taxable by the IRS, the investment income generated by the reserve fund is taxable in most

situations. Even with all these potential pitfalls, investment income still represents a substantial source of additional funds and for this reason should not be ignored. There is no way to make "one size fits all" with any accuracy for the individual Association. Our approach to this dilemma is to use lower approximations that compensate for less than 100% of funds invested. We feel this is still better than not recognizing it, and periodic updates allow for adjustments based on experience. The rate can be set at any level, including zero, for Associations desiring to not recognize interest. **The rate should reflect, as accurately as possible, the actual composite rate of return on all securities and other instruments of investment including allowances for taxes.**

The interest income displayed on Table 3 and Table 4 is the summation of the beginning reserve fund interest accrual and the interest earned on the contributions minus the interest lost by withdrawing the capital expenditures. This method of calculation, while not exact, approximates the averages of the three principal components of a reserve fund for each twelve-month period.

4.2 Future Replacement Costs (Inflation): Inflation is a fact of life. In order to replicate future financial conditions as accurately as possible, inflation on replacement costs should be recognized. The financial tables have been programmed to calculate inflation based upon a pre-determined rate. This rate can be set at any level, including zero. **A plan that doesn't include inflation is a 1-year plan, and any data beyond that first year won't reflect reality.**

4.3 Simultaneous Funding: This is a method of calculating funding for multiple replacement cycles of a single component over a period of time from the same starting date. Simple Example: Funding for a re-roofing project, while, at the same time, funding for a second, subsequent re-roofing project. This method serves a special purpose if multiple-phase projects are all near-term, but will result in higher annual contribution requirements and leads to generational equity issues otherwise. We use this type of programming only in special circumstances.

4.4 Sequential Funding: This is a method of calculating funding for multiple replacement cycles of a single component over a period of time where each funding cycle begins when the previous cycle ends. Simple Example: Funding for the second re-roofing project begins after the completion of the initial re-roofing project. This method of funding appears to be fundamentally equitable. We use this type of programming except in special circumstances.

4.5 Normal Replacement: Components are scheduled for complete replacement at the end of their useful service lives. Simple Example: An entrance sign is generally replaced all at once.

4.6 Cyclic Replacement: Components are replaced in stages over a period of time. Simple Example: Deficient sidewalk panels are typically replaced individually as a small percentage, rather than the complete system.

4.7 Minor Components: A minimum component value is usually established for inclusion in the reserve fund. Components of insignificant value in relation to the scale of the Association shouldn't be included and should be deferred to the operations budget. A small Association might exclude components with aggregate values less than $1,000, while a large Association might exclude components with aggregate values of less than $10,000. Including many small components tends to over complicate the plan and doesn't provide any relative value or utility.

4.8 Long Life Components: Almost all Associations have some components with long or very long useful service lives typically ranging between thirty and sixty years. Traditionally, this type of component has been ignored completely. Simple Example: Single replacement components such as entrance monuments should be programmed for full replacement at their statistical service life. This allows for all common property owners to pay their fair share during the time the component serves them. This also has the added effect of reducing the funding burden significantly as it is carried over many years.

4.9 Projected Useful Service Life: Useful service lives of components are established using construction industry standards and our local experience as a guideline. Useful service lives can vary greatly due to initial quality and installation, inappropriate materials, maintenance practices or lack thereof, environment, parts attrition, and obsolescence. By visual observation, the projected useful service life may be shortened or extended due to the present condition. The projected useful service life is not a mandate, but a guideline, for anticipating when a component will require replacement and how many years remain to fund it.

4.10 Generational Equity: As the term applies to reserves, it is the state of fairness between and over the generations relating to responsibility for assets you are utilizing during your time of ownership. It is neither reasonable, nor good business to defer current liabilities to future owners. This practice is not only unfair; it can also have a very negative impact on future property values.

5. UPDATING THE RESERVE FUND PLAN

A reserve fund plan should be periodically updated to remain a viable planning tool. Changing financial conditions and widely varying aging patterns of components dictate that revisions should be undertaken periodically from one to five years, depending upon the complexity of the common assets and the age of the community. Weather, which is unpredictable, plays a large part in the aging process.

Full Updates (Level II) include a site visit to observe current conditions. These updates include adjustments to the component inventory, replacement schedules, annual contributions, balances, replacement costs, inflation rates, and interest income.

We encourage Associations that are undergoing multiple simultaneous or sequential costly restoration projects (usually high-rise buildings) to perform Level III Administrative Updates. Administrative updates do not include a condition assessment. They are accomplished by comparing original projections with actual experience during the interim period as reported by Management. These updates can be performed annually and include adjustments to the replacement schedules, contributions, balances, replacement costs, inflation rates, and interest income. The Level III Administrative Update can be a cost-effective way of keeping current between Level II Full Update cycles. Full Updates (Level II) and Administrative Updates (Level III) help to ensure the integrity of the reserve fund plan.

6. PREVENTIVE MAINTENANCE

The following preventive maintenance practices are suggested to assist the Association in the development of a routine maintenance program. The recommendations are not to be considered the only maintenance required, but should be included in an overall program. The development of a maintenance checklist and an annual condition survey will help extend the useful service lives of the Association's assets.

This section includes best maintenance practices or life-extension maintenance for many, but not necessarily all, components in the report. Items for which no maintenance is necessary, appropriate or beyond the purview of this report are not included in this section. We typically include them for townhomes and garden condominiums while mid- and high-rise buildings are generally too complex.

6.1 Asphalt Pavement: Pavement maintenance is the routine work performed to keep a pavement, subjected to normal traffic and the ordinary forces of nature, as close as possible to its as-constructed condition. Asphalt overlays may be used to correct both surface deficiencies and structural deficiencies. Surface deficiencies in asphalt pavement usually are corrected by thin resurfacing, but structural deficiencies require overlays designed on factors such as pavement properties and traffic loading. Any needed full-depth repairs and crack filling should be accomplished prior to overlaying. The edgemill and overlay process includes milling the edges of the pavement at the concrete gutter and feathering the depth of cut toward the center of the drive lane. Milling around meter heads and utility features is sometimes required. The typical useful life for an asphalt overlay is twenty years.

6.2 Asphalt Footpaths: Transverse and longitudinal cracks should be cleaned of debris and plant growth (lanced) and filled with a rubberized asphaltic compound to prevent water infiltration. Cracks and deflection of the asphalt pavement can develop in the areas where tree roots cross the path. Tree roots should be removed and damaged areas repaired. An additional maintenance issue with footpaths is vegetation control. In areas where vegetation encroaches on the paths, both underfoot and overhead, visibility is reduced and personal injury can occur from low-growing branches. Vegetation control should be accomplished on a regular basis under the maintenance budget for safety considerations and to extend the useful service life of the pavement.

6.3 Concrete Sidewalks: When sidewalks are cracked or scaled or sections have settled, the resulting differential or "tripping hazard" can present a liability problem for the Association if personal injury should occur as a result. Tripping hazards should be repaired expeditiously to promote safety and prevent liability problems for the community. Generally, where practical and appropriate, concrete element repairs and replacements are scheduled in the same years to promote cost efficiencies. Replacements are usually scheduled in cycles because the necessity of full replacement at one time is unlikely. Typically, damaged or differentially settled sections can be removed by saw cutting or jack hammer and re-cast. Concrete milling of the differential surfaces is sometimes an appropriate, cost-effective alternative to re-casting. Skim coating is not an effective repair for scaled or settled concrete surfaces and, over time, will usually worsen the problem.

6.4 Ground Level Concrete Slabs or Concrete Patios: Any cracks occurring in ground-level concrete slabs should be routed and sealed. In order to extend the useful service life of concrete in contact with the ground, a penetrating sealer to prevent moisture infiltration into the concrete should be applied. This process should be repeated at approximately five- to ten-year intervals.

6.5 Street Signage: Metal perforated-post and pressure-treated wood post street signs generally require very little maintenance over their useful service life. Signage tends to fade due to environmental exposure. Cleaning of peeled paint, periodic cleaning of rust (metal posts) and repainting of wood and metal posts will maintain appearance. There is little that can be done with the signs except to replace them periodically. The wood components of entrance signs should be periodically cleaned of loose paint and repainted to maintain appearance. Out-of-plumb posts should be straightened and secured.

6.6 Light Poles: Outdoor lighting has a limited service life because of the accelerated aging process due to weather extremes. Remediation of the pole fixtures is a viable alternative to full replacement and would include painting the poles along with lamp housing replacement, including ballasts and capacitors. Any poles observed to be out of plumb should be straightened. Periodic cleaning of peeling paint and rust, priming and re-painting of poles and fixtures will help extend the useful service life.

6.7 Metal Handrailings: Metal handrailings should be periodically straightened, loose connections repaired, cleaned of rust, primed, and painted to maintain appearance and extend the useful service life. Bases should be periodically cleaned and sealed to prevent moisture infiltration, which will cause damage to the concrete in freeze/thaw cycles. Welding new bases to replace deteriorated bases is a viable alternative to replacing handrailings.

6.8 Composite Shingle Roofs: Roofs and attic spaces should be inspected annually for damage and leaks. During the attic inspection, check to make sure that mechanical ventilation systems, such as bathroom exhaust fans and dryer ducts, are routed through the roof and not discharging into the attic space. Loose or missing shingles should be replaced on a regular basis. Signs of deflected roof sheathing or discoloration of the sheathing are indicative of moisture problems and should be investigated. It is important to ensure that proper ventilation is occurring at the soffit vents and that insulation is not obstructing the airflow. If attic ventilation appears to be inadequate, the installation of ridge vents and/or through-the-roof mechanical vents is usually a cost-effective way of extending the useful service life of the sheathing. Roof penetrations, such as plumbing vents, are a major source of leaks. During the inspection, these areas should be checked carefully for signs of leakage or rotten sheathing. Gutters and downspouts should be inspected annually. Loose, damaged, or leaking sections should be secured, repaired, or replaced. All gutters should be kept clean of leaf material and debris. Clogged downspouts should be cleared. In areas where gutters collect fallen leaves, gutters should have screens installed. Downspouts should be directed away from buildings. Erosion can be minimized by the use of properly located splash blocks or plastic flexible tubing. In all cases, water should be directed away from building foundations. Splash blocks must be properly placed, and flexible plastic extensions require diligent maintenance.

6.9 Tot Lot Equipment and Outdoor Furniture: Little maintenance is necessary on the newer style, pre-finished or painted metal play modules other than periodic safety inspections and repair, re-finishing, or replacement of any worn or damaged components. Bare wood components, both non-treated and pressure-treated, generally will achieve a greater useful service life and improved appearance if preventative maintenance is performed. Periodic pressure washing and sealing with wood preservative is recommended on all wood components. Rough edges and splinters should be sanded prior to sealing. Damaged or deteriorated wood components should be replaced as necessary. Generally, securing or repairing wood components with screws will provide a better fastening method than nails. Tot lot equipment should be inspected frequently for loose components, rough edges, splinters and safety hazards. Tot lot borders should be leveled periodically, and protruding border anchors should be made flush with the timber surface.

6.10 Storm Water Retention Ponds/Storm Water Drainage Systems: Vegetation control in the ponds and on adjacent banks is required to prevent root damage to the earthen structures. Sedimentation problems can result in dredging requirements to maintain capacity of the pond in the long term. Pond sediment levels should be monitored to establish the rate over a multi-year period. The information would be helpful in determining future reserve funding for dredging if found to be necessary. Typically, storm water drainage systems have a fifty-year estimated service life, and problems are not anticipated. However, as the systems age, it is prudent to maintain funding should problems occur. Inflow and outflow structures should be periodically examined for damage, leaks, or deterioration, and cleaned of debris to prevent clogging.

6.11 Tree Trimming, Removal, and Replacement: As communities age, trees, both native and planted, may become problematic if periodic care is not accomplished. Trees may become damaged by weather or disease, or they may outsize their location. Proper, diligent tree trimming may alleviate future problems with regard to damage to adjacent structures. Proper tree trimming also helps maintain a healthy tree and may reduce windage in inclement weather. Proper tree trimming should not be confused with the common practice of topping, which produces not only an unattractive tree, but also an unhealthy one due to weakening of the root structure. Tree root damage of asphalt footpaths and sidewalks is also a common problem. The best solution is re-routing the adjacent structure, if possible, to prevent future damage. If re-routing is not possible, tree roots causing the damage may be pruned back when replacement of the damaged component is accomplished. The practice of moderate mulching is beneficial for trees. However, repeated mulching against the tree trunk, year after year, without removal of the old mulch can eventually kill trees by trapping moisture against the bark, allowing fungi and insects to easily infiltrate the tree. Mulch should be placed around trees to the drip line, but should not be touching the bark.

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE
TABLE 1 EXPLANATION

This table lists the common assets included in the reserve fund plan and provides details of the replacement schedules. A narrative discussion is provided adjacent to each component. Photo references and maintenance protocol reference numbers are also provided. An explanation of each column in the table follows:

Column **1** **Component No.** is consistent throughout all tables.

Column **2** **Component** is a brief description of the component.

Column **3** **Quantity** of the component studied, which may be an exact number, a rough estimate, or simply a (1) if the expenditure forecast is a lump sum allowance for replacement of an unquantified component.

Column **4** **Unit of Measurement** used to quantify the component:

SY = Square Yards
SF = Square Feet
LF = Linear Feet
EA = Each
LS = Lump Sum
PR = Pair
CY = Cubic Yards

Column **5** **Unit Cost** used to calculate the required expenditure. This unit cost includes removal of existing components and installation of new components, including materials, labor, and overhead and profit for the contractor.

Column **6** **Total Asset Base** is the total value of common assets included in the study in current dollars. In addition to capital assets, this figure includes one cycle of maintenance liability.

Column **7** **Typical Service Life (Yrs) or Cycle** is the typical life expectancy of similar components in average conditions or the length of years between replacement cycles, and does not necessarily reflect the conditions observed during the field evaluation. This number is furnished for reference and is not necessarily computed in the system.

Column **8** **1st Cycle Year** is the scheduled year of the first projected replacement or repair.

Column **9** **Percentage of Replacement** is the percentage of component value to be replaced in the first replacement cycle.

Column **10** **Cost for 1st Cycle** is the future cost (with inflation) of the replacement. It is the product of Column 6 times Column 9 in future dollars.

Column **11** **2nd Cycle Year** is the scheduled year of the second projected replacement or repair. If a second cycle is not listed, it is because the first cycle is beyond the end of the study.

Column **12** **Percentage of Replacement** is the percentage of component value to be replaced in the second replacement cycle. This can vary from the percentage of the first cycle for various reasons, such as the increased age of a component may require a larger amount of repair.

Columns **13** Through **16** **Cycles, Percentage, and Cost** repeat as itemized above. Although not shown on the tables, the cycles continue throughout the study period and beyond.

Column **17** **Discussion** is the description and observed condition of the component and the methodology employed in the decision-making process. Includes the photo reference, **(Photo #1, #2, etc.)** and Maintenance Protocol reference numbers **(7.1, 7.2 etc.)** if applicable.

Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE
TABLE 1
2018 Through 2037

Component No.	Component	Quantity	Unit of Measurement	Unit Cost	Total Asset Base	Typical Service or Cycle Life in Yrs	1st Cycle Year	Percentage of Replacement	Cost For 1st Cycle	2nd Cycle Year	Percentage of Replacement	Cost For 2nd Cycle	3rd Cycle Year	Percentage of Replacement	Cost For 3rd Cycle	DISCUSSION
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 ASPHALT COMPONENTS																
1.1	Asphalt Restoration Project	722	SY	$14.50	$10,469	20	2027	100%	$13,074	2047	100%	$21,424				This component includes the single asphalt drivelane and parking area at the pavilion. The drivelane and parking area layout do not include curbs and gutters or sidewalks. Neither the depth nor the sub-base of the pavement could be visually determined. We understand that the pavement was completed circa 2006, and it is in good condition. No areas of alligator cracking (indicative of sub-base damage or insufficient asphalt depth), but about 105 linear feet of cracking was observed. Restoration includes full-width milling and new compacted asphalt. Core sampling should be used to determine the depth and condition of the sub-base and pavement prior to restoration.
1.2	Asphalt Footpaths	1,389	SY	$36.00	$50,004	15	2021	100%	$53,849	2036	100%	$77,989	2051	100%	$112,952	Asphalt footpaths generally 5' in width, are constructed from the pavilion parking area, along the lake, and ending on Windermere Drive. An additional footpath is constructed from the pavilion running east to the community property line. The footpaths range from fair to generally good condition with minor deflection and transverse cracking observed. Any trip hazards or surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2 CONCRETE COMPONENTS																
2.1	Concrete Sidewalk & Patio	1,468	SF	$13.50	$19,818	5	2020	25%	$5,205	2025	25%	$5,889	2030	25%	$6,663	A single concrete sidewalk, generally 4' wide, is constructed between the pavilion and the asphalt parking area for accessibility. This category includes the concrete patio constructed as the pavilion base. Their thickness could not be visually determined. They are in generally good condition. We observed two minor cracks on the sidewalk panels and minor cracking of the patio. Cyclic repairs are scheduled, as full replacement at one time is not appropriate or anticipated. The Board should be aware that repairs to small quantities of concrete may be more costly because of the difficulty of attracting competitive bids for small projects, which may not meet contractor minimums. Any trip hazards or surface deficiencies should be addressed as soon as practicable to prevent personal injury.
3 SITE FEATURES																
3.1	Entrance Monument	1	EA	$13,000.00	$13,000	30	2047	100%	$26,603							A stone and mortar monument has been recently constructed at the entrance to the community. The monument has two 3' x 3' x 4' columns with cast concrete caps, with an 8' x 4' wall between the columns. A 7' x 3' MDF (Medium density fiberboard) community name sign is attached to the front of the monument. The monument and sign are in new condition. Pricing is based on actual cost, provided by Management. With periodic maintenance performed under the operations budget, the monument should have a very long service life.
3.2	Monument Lighting	1	LS	$1,100.00	$1,100	10	2027	100%	$1,374	2037	100%	$1,759	2047	100%	$2,251	Landscape lighting is installed at the entrance monument. The lighting includes two 5" oval L.E.D. lights powered by two 8" x 6" solar panels mounted next to the monument. We did not observe a battery box. Lighting appears to be in good condition, but was not observed after dark. Landscape lighting generally has a short service life due to the proximity to ground and moisture and damage from landscaping practices.
3.3	Informational Signage	3	EA	$165.00	$495	20	2027	100%	$618	2047	100%	$1,013				Standard metal access control signs, typically 12" by 18" and mounted on perforated metal posts, and a 2' x 4' plywood sign, mounted on 4 x 4 wood posts are installed at the pavilion parking area. Posts and signs appear to be in continuing good condition. Maintenance, such as repainting the wood sign and straightening the metal signs should be accomplished every few years.
3.4	Light Poles & Fixtures	3	EA	$2,800.00	$8,400	30	2036	100%	$13,101	2066	100%	$27,481				Management advised that the community is responsible for maintenance and replacement of the three street lights installed at the pavilion. Three fiberglass reinforced plastic (FRP) light poles, about 20' high, with traditional lantern fixtures provide area illumination. They appear to be in generally continuing good condition. The lighting was not observed after dark. No problems were reported with lighting.
3.5	Concrete Retaining Walls	330	SF	$55.00	$18,150	40	2046	100%	$36,236							Two cast-in-place, stamped concrete retaining walls are constructed at the grade differential above the pavilion. They appear to be in continuing good condition, with no major settlement cracking or deflection observed. Future repairs to the hand railing are included in Component #3.6 below. The service life of the walls are dependent on the railing bases being properly sealed to prevent water infiltration resulting in freeze/thaw damage. The walls have been painted, which has improved appearance.
3.6	Metal Railing	110	LF	$38.00	$4,180	30	2036	100%	$6,519	2066	100%	$13,675				Two painted steel railings, 3'-6" high, are attached along the top of the concrete retaining walls at the pavilion. The railings are in continuing good condition. They are integral to the retaining wall system, and restoration of the retaining walls will require remova. With proper, diligent maintenance, including cleaning of peeling paint, priming, and painting, and repairing deteriorated areas by welding replacement parts, the railings may be reusable, and may have a long service life.
3.7	Pavilion Re-Roofing Project	672	SF	$5.75	$3,864	20	2025	100%	$4,593	2045	100%	$7,526				A wood framed pavilion was constructed at the common area circa 2006. Eight wood posts support the roof structure and painted plywood ceiling over a concrete slab floor. The pavilion measures 28' x 24' with a 6/12 pitched roof and architectural grade asphalt shingles. The structure, roof sheathing, and the shingles appear to be in continuing good condition. Gutters are properly attached to the structure and direct water away from the building. This component is for eventual roofing replacement and possible gutter refurbishment. We understand that the gazebo will have near-term minor repairs and cleaning.
3.8	Tot Lot & Outdoor Furniture	1	LS	$42,000.00	$42,000	18	2024	100%	$48,707	2042	100%	$75,966				One tot lot is located at the pavilion. Equipment consists of 228 linear feet of wood borders, two plastic and metal benches, one trash receptacle, a three post swing set with four swings, and a Playcraft Systems, 26 metal post play module with climbing equipment and two plastic slides. All equipment appears to be in continuing good condition. This category also includes the four plastic and metal picnic tables and the trash receptacle at the pavilion. Frequent, periodic safety checks of all components should be conducted to prevent personal injury. Replacement costs are based on replacement with U.S. Consumer Product Safety Commission (CPSC)-compliant play modules.

Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE
TABLE 1
2018 Through 2037

Component No.	Component	Quantity	Unit of Measurement	Unit Cost	Total Asset Base	Typical Service or Cycle Life in Yrs	1st Cycle Year	Percentage of Replacement	Cost For 1st Cycle	2nd Cycle Year	Percentage of Replacement	Cost For 2nd Cycle	3rd Cycle Year	Percentage of Replacement	Cost For 3rd Cycle	DISCUSSION
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
3.9	**Storm Water Drainage System Allowance**	**1**	**LS**	**$22,000.00**	**$22,000**	**7**	**2019**	**100%**	**$22,550**	**2026**	**100%**	**$26,805**	**2033**	**100%**	**$31,863**	**Storm water drainage is provided by a combination of five retention and detention ponds constructed throughout the community. Retention pond #1 is located at the corner of Virginia Avenue and Keswick Drive. Pond # 1 flows over an earthen impoundment structure and large riprap and concrete spillway to retention pond # 2. This pond has a medium sized, round, galvanized metal overflow riser. These two ponds are clear of vegetation and should be kept clear in the future. Pond # 2 overflow riser discharges water into a creek bed below the earthen impoundment structure. At the lower portion of the creek bed is detention pond # 3. This pond has a medium sized, round, galvanized metal overflow riser. Detention pond # 4 is located below the homes on Ambleside Drive. Pond # 4 flows over the earthen impoundment structure and large rip rap spillway to detention pond # 5. This pond is mowed and relatively clean of vegetation. Pond # 5 also has a galvanized metal overflow riser, which then distributes the storm water to the lake. We understand that responsibility for some or parts of the system may rest with local government. Though storm water drainage systems are a long life component and catastrophic failure is not anticipated, it is prudent for the community to plan for localized repairs and repairs to ancillary damage, even if a public entity has primary responsibility. This category may also be used to address localized erosion issues.**
3.10	**Pond Evaluation**	**1**	**LS**	**$3,000.00**	**$3,000**	**10**	**2019**	**100%**	**$3,075**	**2029**	**100%**	**$3,936**	**2039**	**100%**	**$5,039**	**Since the community is responsible for the storm water retention ponds, we are including a pond evaluation, which should be started near-term. There are a number of pond maintenance issues such as shoreline stabilization, chemical applications for weed control, bacterial improvement to control algae, surface aerators, diffusers, dredging, beaver control, and mosquito control, all of which may be required at some time over the life of the system. We suggest that a professional pond evaluation be conducted every ten years, mainly to monitor the sediment levels, and ensure that the ponds are not filling with sediment. Pond dredging can be a very expensive undertaking, and should be incorporated into the plan, if deemed necessary.**

CALENDAR OF EXPENDITURES
TABLE 2 EXPLANATION

This table is a yearly plan of action of replacements and costs. A description of the columns in the table follows:

Column **1** **Year** is the year of the projected replacement and expenditure.

Column **2** **Component No.** itemizes the components and is consistent throughout the tables.

Column **3** **Component** is a brief description of the component.

Column **4** **Present Cost** is the cost for the cycle in today's dollars.

Column **5** **Future Cost (Inflated)** is the cost for the cycle in future dollars.

Column **6** **Total Annual Expenditures** gives the total expenditures by year.

Column **7** **Action** is an area provided for the Board to make notations as to action taken on each component.

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Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2018 Through 2037

YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2018	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2018					2018	
					NO EXPENDITURES	
2019					2019	
	3.9	Storm Water Drainage System Allowance	$22,000	$22,550	TOTAL EXPENDITURES	
	3.10	Pond Evaluation	$3,000	$3,075		
					$25,625	
2020					2020	
	2.1	Concrete Sidewalk & Patio	$4,955	$5,205	TOTAL EXPENDITURES	
					$5,205	
2021					2021	
	1.2	Asphalt Footpaths	$50,004	$53,849	TOTAL EXPENDITURES	
					$53,849	
2022					2022	
					NO EXPENDITURES	
2023					2023	
					NO EXPENDITURES	
2024					2024	
	3.8	Tot Lot & Outdoor Furniture	$42,000	$48,707	TOTAL EXPENDITURES	
					$48,707	
2025					2025	
	2.1	Concrete Sidewalk & Patio	$4,955	$5,889	TOTAL EXPENDITURES	
	3.7	Pavilion Re-Roofing Project	$3,864	$4,593		
					$10,482	
2026					2026	
	3.9	Storm Water Drainage System Allowance	$22,000	$26,805	TOTAL EXPENDITURES	
					$26,805	
2027					2027	
	1.1	Asphalt Restoration Project	$10,469	$13,074	TOTAL EXPENDITURES	
	3.2	Monument Lighting	$1,100	$1,374		
	3.3	Informational Signage	$495	$618		
					$15,066	
2028					2028	
					NO EXPENDITURES	
2029					2029	
	3.10	Pond Evaluation	$3,000	$3,936	TOTAL EXPENDITURES	
					$3,936	
2030					2030	
	2.1	Concrete Sidewalk & Patio	$4,955	$6,663	TOTAL EXPENDITURES	
					$6,663	
2031					2031	
					NO EXPENDITURES	
2032					2032	
					NO EXPENDITURES	
2033					2033	
	3.9	Storm Water Drainage System Allowance	$22,000	$31,863	TOTAL EXPENDITURES	
					$31,863	
2034					2034	
					NO EXPENDITURES	
2035					2035	
	2.1	Concrete Sidewalk & Patio	$4,955	$7,539	TOTAL EXPENDITURES	
					$7,539	

Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2018 Through 2037

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.
www.masonreserves.com 800-776-6980 Fax 800-776-6408

YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2018	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2036					2036	
	1.2	Asphalt Footpaths	$50,004	$77,989	TOTAL EXPENDITURES	
	3.4	Light Poles & Fixtures	$8,400	$13,101		
	3.6	Metal Railing	$4,180	$6,519		
					$97,610	
2037					2037	
	3.2	Monument Lighting	$1,100	$1,759	TOTAL EXPENDITURES	
					$1,759	

CURRENT FUNDING ANALYSIS CASH FLOW METHOD
TABLE 3.0 EXPLANATION

and, if applicable,

ALTERNATIVE FUNDING ANALYSIS CASH FLOW METHOD
TABLE 3.1, 3.2, 3,3 (etc.) EXPLANATION

Table 3.0 shows the financial picture over the twenty-year study period, using the current annual contribution and the reserve fund balance reported at the beginning of the study year. If the results of the study indicate a need to increase the annual contribution to maintain adequate balances throughout the study period, Table 3.1, and possibly, 3.2 will be provided for consideration. Alternatives might also be provided if a community is over-funded and desires to adjust the annual contribution downward.

Alternative funding may be achieved by increasing the annual contribution to a fixed yearly amount or by applying an annual escalation factor to increase contributions over time, or a combination of both methods. An inflation factor and interest income factor may be included in the calculations on this page.

A description of the columns in the table follows:

Column **1** **Year**

Column **2** **Total Asset Base** of all common capital assets included in the reserve fund with costs adjusted for inflation.

Column **3** **Beginning Reserve Fund Balance** is the reserve fund balance after all activity in the prior year is completed.

Column **4** **Annual Contribution,** on Table 3, is the amount contributed annually to the reserve fund as reported by the Board of Directors. On the Alternative Funding Analysis tables (3.1, 3.2, etc.), the annual contribution is projected to maintain positive balances throughout the study period.

Column **5** **Interest Income,** which is indicated in the heading of the table, is applied to the reserve fund balance and is accrued monthly throughout each year after the yearly expenditures are deducted. The interest income percentage may be varied to reflect actual experience of the community investments.

Column **6** **Capital Expenditures** are annual totals of expenditures for each year of the study period adjusted by the inflation percentage listed in the heading of the table.

Column **7** **Ending Reserve Fund Balance** is the result of the beginning reserve fund balance plus the annual contribution, plus interest income, less capital expenditures for the year.

Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

CURRENT FUNDING ANALYSIS
CASH FLOW METHOD
TABLE 3

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.
www.masonreserves.com 800-776-6980 Fax 800-776-6408

In Dollars	Beginning Reserve Fund Balance:	Annual Contribution To Reserves:	Contribution Percentage Increase:	Annual Inflation Factor:	Annual Interest Income Factor:
	170,530	11,100	2.50%	2.50%	1.00%

YEAR	TOTAL ASSET BASE	BEGINNING RESERVE FUND BALANCE	ANNUAL CONTRIBUTION	INTEREST INCOME	CAPITAL EXPENDITURES	ENDING RESERVE FUND BALANCE
1	2	3	4	5	6	7
2018	196,480	170,530	11,100	1,773	0	183,403
2019	201,392	183,403	11,378	1,765	25,625	170,921
2020	206,427	170,921	11,662	1,752	5,205	179,130
2021	211,587	179,130	11,953	1,572	53,849	138,807
2022	216,877	138,807	12,252	1,461	0	152,521
2023	222,299	152,521	12,559	1,600	0	166,680
2024	227,857	166,680	12,873	1,480	48,707	132,325
2025	233,553	132,325	13,194	1,344	10,482	136,382
2026	239,392	136,382	13,524	1,298	26,805	124,399
2027	245,377	124,399	13,862	1,243	15,066	124,439
2028	251,511	124,439	14,209	1,327	0	139,975
2029	257,799	139,975	14,564	1,464	3,936	152,067
2030	264,244	152,067	14,928	1,573	6,663	161,905
2031	270,850	161,905	15,301	1,710	0	178,916
2032	277,621	178,916	15,684	1,883	0	196,483
2033	284,562	196,483	16,076	1,888	31,863	182,584
2034	291,676	182,584	16,478	1,924	0	200,986
2035	298,968	200,986	16,890	2,070	7,539	212,407
2036	306,442	212,407	17,312	1,698	97,609	133,809
2037	314,103	133,809	17,745	1,431	1,759	151,226
STUDY PERIOD TOTALS			283,546	32,258	335,108	

Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

ALTERNATIVE FUNDING ANALYSIS
CASH FLOW METHOD
HYBRID APPROACH
TABLE 3.1

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.
www.masonreserves.com 800-776-6980 Fax 800-776-6408

In Dollars	Beginning Reserve Fund Balance:	Annual Contribution To Reserves:	Contribution Percentage Increase:	Annual Inflation Factor:	Annual Interest Income Factor:
	170,530	11,100	2.50%	2.50%	1.00%

YEAR	TOTAL ASSET BASE	BEGINNING RESERVE FUND BALANCE	ANNUAL CONTRIBUTION	INTEREST INCOME	CAPITAL EXPENDITURES	ENDING RESERVE FUND BALANCE
1	2	3	4	5	6	7
2018	196,480	170,530	11,100	1,773	0	183,403
2019	201,392	183,403	12,705	1,772	25,625	172,255
2020	206,427	172,255	13,022	1,773	5,205	181,846
2021	211,587	181,846	13,348	1,607	53,849	142,952
2022	216,877	142,952	13,681	1,510	0	158,143
2023	222,299	158,143	14,023	1,665	0	173,832
2024	227,857	173,832	14,374	1,560	48,707	141,059
2025	233,553	141,059	14,733	1,440	10,482	146,750
2026	239,392	146,750	15,102	1,411	26,805	136,458
2027	245,377	136,458	15,479	1,373	15,066	138,245
2028	251,511	138,245	15,866	1,475	0	155,586
2029	257,799	155,586	16,263	1,630	3,936	169,543
2030	264,244	169,543	16,669	1,758	6,663	181,307
2031	270,850	181,307	17,086	1,914	0	200,307
2032	277,621	200,307	17,513	2,107	0	219,928
2033	284,562	219,928	17,951	2,134	31,863	208,150
2034	291,676	208,150	18,400	2,191	0	228,741
2035	298,968	228,741	18,860	2,359	7,539	242,422
2036	306,442	242,422	19,331	2,011	97,609	166,155
2037	314,103	166,155	19,815	1,767	1,759	185,978
STUDY PERIOD TOTALS			315,323	35,233	335,108	FULLY FUNDED BALANCE GOAL

FUNDING ANALYSIS COMPONENT METHOD
TABLE 4 EXPLANATION

Table 4 is a yearly list of annual contributions toward each component, which must be made to achieve 100% funding. The reserve fund balance is the balance at the beginning of the study year. The beginning reserve fund balance is applied, proportionately, to each component prior to calculating the yearly contribution for each component. Future costs (inflation) are factored into the replacement cycles. The annual contribution for each year is calculated in the bottom row of the study labeled **Annual Component Contribution Totals.** Interest and inflation are calculated at the same annual rates as the Cash Flow Method (Table 3).

Column **1**	**Component Number** is consistent throughout the tables.
Column **2**	**Component** is a brief description of the component.
Columns **3 - 22**	**Years** lists the annual contribution amount toward each component throughout the twenty-year study period, which is totaled at the bottom of the component table.

COMPONENT METHOD SUMMARY

The component method summary computes the beginning reserve fund balance, the annual component contribution, the annual expenditures, and interest income. It then provides the ending reserve fund balance for each year of the study.

Reserve Fund Plan for
OWNER'S ASSOCIATION AT REDWOOD LAKES, INC.
Culpeper, Virginia

FUNDING ANALYSIS
COMPONENT METHOD
TABLE 4

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.
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Beginning Reserve Fund Balance:

In Dollars 170,530

Component Number	COMPONENT	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
1 ASPHALT COMPONENTS																					
1.1	Asphalt Restoration Project	263	263	263	263	263	263	263	263	263	967	967	967	967	967	967	967	967	967	967	967
1.2	Asphalt Footpaths	3,345	3,345	3,345	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	4,817	6,977	6,977
2 CONCRETE COMPONENTS																					
2.1	Concrete Sidewalk & Patio	488	488	1,148	1,148	1,148	1,148	1,148	1,299	1,299	1,299	1,299	1,299	1,470	1,470	1,470	1,470	1,470	1,663	1,663	1,663
3 SITE FEATURES																					
3.1	Entrance Monument	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
3.2	Monument Lighting	28	28	28	28	28	28	28	28	28	167	167	167	167	167	167	167	167	167	167	214
3.3	Informational Signage	12	12	12	12	12	12	12	12	12	46	46	46	46	46	46	46	46	46	46	46
3.4	Light Poles & Fixtures	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	126	785	785
3.5	Concrete Retaining Walls	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212	212
3.6	Metal Railing	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	63	391	391
3.7	Pavilion Re-Roofing Project	120	120	120	120	120	120	120	340	340	340	340	340	340	340	340	340	340	340	340	340
3.8	Tot Lot & Outdoor Furniture	1,490	1,490	1,490	1,490	1,490	1,490	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850	3,850
3.9	Storm Water Drainage System Allowance	4,245	3,695	3,695	3,695	3,695	3,695	3,695	3,695	4,393	4,393	4,393	4,393	4,393	4,393	4,393	5,221	5,221	5,221	5,221	5,221
3.10	Pond Evaluation	579	374	374	374	374	374	374	374	374	374	374	479	479	479	479	479	479	479	479	479
ANNUAL COMPONENT CONTRIBUTION TOTALS		11,121	10,366	11,026	12,498	12,498	12,498	14,858	15,229	15,927	16,804	16,804	16,909	17,080	17,080	17,080	17,908	17,908	18,101	21,248	21,295

COMPONENT METHOD SUMMARY	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
BEGINNING RESERVE FUND BALANCE	170,530	183,425	170,065	177,654	138,156	152,109	166,203	134,105	140,282	130,899	134,044	152,286	166,880	179,067	198,038	217,201	205,525	225,595	238,522	164,672
PLUS ANNUAL COMPONENT CONTRIBUTION	11,121	10,366	11,026	12,498	12,498	12,498	14,858	15,229	15,927	16,804	16,804	16,909	17,080	17,080	17,080	17,908	17,908	18,101	21,248	21,295
CAPITAL EXPENDITURES	0	25,625	5,205	53,849	0	0	48,707	10,482	26,805	15,066	0	3,936	6,663	0	0	31,863	0	7,539	97,609	1,759
SUBTOTAL	181,651	168,166	175,886	136,303	150,654	164,607	132,354	138,852	129,404	132,637	150,848	165,259	177,297	196,147	215,118	203,246	223,433	236,157	162,161	184,208
PLUS INTEREST INCOME @ 1.00%	1,774	1,899	1,768	1,853	1,456	1,596	1,750	1,430	1,496	1,406	1,438	1,622	1,769	1,892	2,082	2,279	2,162	2,365	2,512	1,770
FULLY FUNDED RESERVE FUND BALANCE	183,425	170,065	177,654	138,156	152,109	166,203	134,105	140,282	130,899	134,044	152,286	166,880	179,067	198,038	217,201	205,525	225,595	238,522	164,672	185,978

FULLY FUNDED BALANCE GOAL

PERCENT FUNDED FOR CURRENT CYCLE	142%	TOTAL EXPENDITURES	335,108	TOTAL CONTRIBUTIONS	314,238	STUDY PERIOD TOTAL INTEREST	36,318	AVERAGE ANNUAL CONTRIBUTION	15,712

PHOTOGRAPHS
WITH
DESCRIPTIVE NARRATIVES

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

PHOTO #1
The asphalt drivelane and parking area at the pavilion is in overall continuing good condition.

PHOTO #2
Only a minor quantity of longitudinal and transverse cracking was observed.

PHOTO #3
The asphalt footpaths range from fair to generally continuing good condition. Some transverse cracking and minor deflection was observed.

PHOTO #4
The concrete sidewalk panels for the handicap access are in continuing good condition. Two minor cracks were observed.

PHOTO #5
A new entrance monument and sign was constructed recently, which is a nice addition to the community.

PHOTO #6
Solar panels provide power to the two oval L.E.D. lights, which provide nighttime illumination. Lighting was not observed after dark.

PHOTO #7
The three street and informational signs at the park are in continuing good condition.

PHOTO #8
The three pole lights at the park appear to be in continuing good condition. The poles appear to be slightly out of plumb and should be straightened. Lighting was not observed after dark.

PHOTO #9
The concrete retaining walls have been painted, which is a major improvement over the previous rust staining. No major cracking was observed.

embedded posts pockets are filled, will help maximize the service life.

PHOTO #11
The gazebo roofing, outdoor furniture, and the patio range from fair to generally continuing good condition. Some cracking of the concrete patio floor was observed.

PHOTO #12
The play module, swings, spring toys, and outdoor furniture are in continuing good condition.

PHOTO #13
The bottom detention pond (#5) has been mowed and is clear of vegetation.

PHOTO #14
The two upper retention ponds appear to be in continuing good condition. These ponds should have an evaluation to determine sediment levels and overall pond health.

PHOTO #15
There appears to be heavy erosion between detention pond #4 and pond #5, which should be repaired.