MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

MEMBER OF community ASSOCIATIONS INSTITUTE

Condition Assessment
&
Reserve Fund Plan Update
2019
Southgate Square

Reston, Virginia

Prepared for:
The Board of Directors
&
Gates Hudson Community Management

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

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November 9, 2018

Ms. Ashley Prime, CMCA®, Portfolio Manager
Gates Hudson Community Management
44927 George Washington Boulevard, Suite 225
Ashburn, Virginia 20147

RE: **CONDITION ASSESSMENT AND RESERVE FUND PLAN UPDATE 2019**
Southgate Square Cluster Association
Reston, Virginia
Project No. 8723

Dear Ms. Prime:

Mason & Mason Capital Reserve Analysts, Inc. has completed the report for Southgate Square.

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 Southgate Square's 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 fund is approximately **49**% funded through 2018, **See Paragraph 3.1**. Our goal is to become fully funded by the end of the 20-year period (2038).

In order to achieve this goal, the Board should:

- Step increase the annual contribution beginning in **2019** from **$6,309** to **$45,681**, **$53,052** in **2020**, **$59,052** in **2021**, **$65,052** in **2022**, **$67,004** in **2023**. In **2024**, after the pavement restoration project is complete, the contribution can be lowered to **$49,779**, and then plan on annual increases of **3.0**% to reflect inflation thereafter.
- This represents a 2019 increase from **$2.95** to **$21.38** (a net increase of **$18.43**) per residential unit, per month (based on **178** units).

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: Southgate Square Cluster Association is comprised of 178 townhomes, located on South Lakes Drive in Reston, Virginia. The community was constructed circa 1970. One private street, Southgate Square and several parking areas are within the community. The street layout includes concrete sidewalks, curbs and gutters, and 35 parking bays providing 332 spaces.

We are providing the Condition Assessment and Reserve Fund Plan Update based on Proposal Acceptance Agreement No. 8723 dated September 18, 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 Cluster 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 Southgate Square in 2013. 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 November 5, 2018. The weather was overcast/rain and the temperature was approximately 51 degrees F. Precipitation had occurred for several days prior to the site visit. The pavements, walkways, and grounds were generally wet and clean of debris. Significant leafy foliage was present throughout the streets and the sidewalks.

1.2 Principal Findings: The common assets appear to be in overall fair to good condition. The community is now reaching a 50-year benchmark in terms of replacement of major systems. The asphalt drivelanes and parking bays range from fair to generally continuing good condition. Some deflected pavement, and non-filled longitudinal, and transverse cracking was observed. Crack filling was accomplished circa 2017, but the drivelanes and parking bays were not seal coated. The pavements will require full-width profile milling and new compacted asphalt in about four to five years. Pavement maintenance should continue every six years after the restoration project. The asphalt footpaths also range from fair to continuing good condition.

There is a significant quantity of cracked, settled and/or heaved concrete sidewalks, which are potential tripping hazards. This is mainly due to the significant tree root systems throughout the community. The liability and costs associated with personal injury lawsuits resulting primarily from sidewalk and curb 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 significant tripping hazards observed throughout the sidewalks as soon as practicable.

Site features such as the entrance sign, timber retaining walls, street signage, light poles and fixtures, the tot lots, and the outdoor furniture range from fair to continuing good or new condition. Many of the trees in the community have outsized their locations and continue to heave sections of sidewalk and in some cases, are now heaving sections of asphalt drivelanes or parking bays. We are continuing the Tree Trimming, Removal, and Replacement Allowance with an increased budget.

Financially, the Association requires a major increase in contributions to reserves as they have not been following the previous plan and in fact, lowered the contribution in the interim. We have stepped the increases over five years to minimize the impact on individual homeowners but have established a sufficient contribution schedule to eventually achieve the fully funded goal by the end of the 20-year period.

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. The average rate of inflation since the 2008 recession has been 1.46% according to the U.S. Labor Department and is similar in our experience with clients. However, currently we are seeing somewhat higher rates and are anticipating that general price inflation will continue at elevated levels near to mid-term. As such, we are using a 3% rate of inflation in our calculations. Interest income has increased similarly since 2008, and many smaller Associations and Condominiums are earning up to 1.85% on savings accounts and as much as 3.37% on 5-year certificates of deposit. Accordingly, we are assuming 2.5% interest income in our calculations. However, unlike reserves, interest income is taxable, which may reduce the net gain. We anticipate increasingly volatile economic conditions near to mid-term. 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 reserve fund balance, including cash and securities, as of **December 31, 2018,** is projected to be **$117,179**. We have used a **2.50%** annual interest income factor and a **3.00%** 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 **$899,420**.

2.2 Current Funding Analysis, Cash Flow Method (Table 3): The 2018 annual contribution to reserves has been set at **$6,309 with a presumed 3.0% annual increase**. At this level, the total for all annual contributions for the twenty-year period would be **$169,525**, and the total interest income is projected to be **$2,712**. **This funding depletes the fund in 2020, and does not provide funding for the asphalt restoration project, which will be required in a few years.**

2.3 Alternative Funding Analysis, Cash Flow Method (Table 3.1): This stepped plan provides the annual contributions necessary to maintain balances more consistent with the **fully funded goal by increasing the annual contribution to $45,681 in 2019, $53,052 in 2020, $59,052 in 2021, $65,052 in 2022, and $67,004 in 2023. Then, the contribution may be reduced to $49,779 after the pavement restoration project is complete, and providing an annual escalation factor of 3.00%, matching inflation thereafter. This alternative allows for a gradual increase over time after the initial series of stepped increases and addresses generational equity issues.** The total for all annual contributions for the twenty-year period would be **$1,215,681**, and the total interest income is projected to be **$108,289**. The **fully funded** balance in **2038** is **$541,729**.

2.4 Funding Analysis, Component Method (Table 4): This method of funding would require variable annual contributions, averaging **$58,239** over the twenty-year period. The total for all annual contributions would be **$1,164,780**, and the total interest income is projected to be **$159,190**. The **fully funded** balance in **2038** is **$541,729**. 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 Seal Coating: The purpose is to seal and add new life to a roadway surface. It protects the existing pavement but does not add significant structural strength. A surface treatment can range from a single, light application of emulsified asphalt as a "fog" seal, to a multiple-surface course made up of alternate applications of asphalt and fine aggregate. Seal coating of all asphalt pavements should be performed at approximately six-year intervals, or approximately twice during the service life of the asphalt pavement. Seal coating more often is generally not cost-effective. The material used should be impervious to petroleum products and should be applied after crack filling, oil-spot cleaning, and full-depth repairs have been accomplished. Seal coating is a cost-effective way of extending the life of asphaltic concrete pavement. Seal coating is generally not scheduled for up to five years after an asphalt restoration project.

6.3 Asphalt Full-Depth Repairs: In areas where significant alligator cracking, potholes, or deflection of the pavement surface develops, the existing asphalt surface should be removed to the stone base course and the pavement section replaced with new asphalt. Generally, this type of failure is directly associated with the strength of the base course. When the pavement is first constructed, the stone base consists of a specific grain size distribution that provides strength and rigidity to the pavement section. Over time, the stone base course can become contaminated with fine-grained soil particles from the supporting soils beneath the base course. The most positive repair to such an area is to remove the contaminated base course and replace it with new base stone to the design depth. It is appropriate to perform these types of repairs immediately prior to asphalt restoration projects. Generally, this type of repair should not be required for approximately five years after an asphalt restoration project.

6.4 Asphalt Crack Filling: Cracks that develop throughout the life of the asphalt should be thoroughly cleaned of plant growth and debris (lanced) and then filled with a rubberized asphalt crack sealant. If the crack surfaces are not properly prepared, the sealant will not adhere. Crack filling should be accomplished every three to six years to prevent infiltration of water through the asphalt into the sub-grade, causing damage to the road base. It is appropriate to perform these types of repairs immediately prior to edgemill and overlay. Generally, this type of repair should not be required for approximately five years after an edgemill and overlay project.

6.5 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.

6.6 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.

6.7 Concrete Curbs and Gutters: Vehicle impacts, differential settlement, construction damage, and cracking and spalling of the concrete will eventually result in the need for replacement of some curb sections. A typical damaged or settled section, usually 10 feet in length, will be removed by saw cutting or jack hammer and re-cast. Replacements are scheduled in cycles because the necessity of full replacement at one time is unlikely.

6.8 Concrete Steps: Concrete steps should be replaced when cracking, deterioration, or settlement occurs. Cracks, which occur at the intersection of treads and risers, should be filled with an appropriate sealant to prevent water infiltration.

6.9 Entrance Signage: The wood components of entrance signs should be periodically cleaned of loose paint, lamination cracks should be re-sealed, and the sign repainted to maintain appearance. Out-of-plumb posts should be straightened and secured.

6.10 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.

6.11 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.

6.12 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.

6.13 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 **18** **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 SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE
TABLE 1
2019 Through 2038

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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	18
1 ASPHALT COMPONENTS																
1.1	Asphalt Restoration Project	10,592	SY	$12.50	$132,400	18	2023	100%	$149,017	2041	100%	$253,692				This component includes asphalt drivelanes and parking bays of the community. Neither the depth nor the sub-base of the pavement could be visually determined. It appears that the pavement was restored circa 2003, and it is in fair to good condition. Minor areas of deflective cracking (indicative of sub-base damage or insufficient asphalt depth) were observed on the drivelanes or parking bays. Restoration includes full-width profile 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. Costs include striping, but not replacement of any inadequate sub-base.
1.2	Asphalt Seal Coat	10,592	SY	$1.20	$12,710	6	2029	100%	$17,082	2035	100%	$20,396	2047	100%	$29,080	We understand that the pavement was seal coated in October of 2010. Seal coating may help prevent water infiltration into the sub-base through micro-cracks, but is largely a cosmetic issue. To help improve curb appeal after repairs, we have scheduled seal coating projects every six years, except in the year of the pavement restoration project when it is not necessary. Crack filling and full-depth repairs should be completed prior to application to achieve maximum benefit from the seal coating. Seal coating projects include re-striping. It should be understood that coal-tar based seal coating products have been banned from use in many localities throughout the country due to heavy contamination of ground water.
1.3	Asphalt Repair Allowance	1	LS	$18,000.00	$18,000	6	2023	100%	$20,259	2029	25%	$6,048	2035	50%	$14,442	Approximately 25 square yards of alligator cracked or deflected pavement (indicative of sub-base damage), and about 420 linear feet of non-filled longitudinal or transverse cracking was observed. Repairs are essential in order to achieve the projected remaining service life of the pavement. Full-depth repairs and crack filling are scheduled every six years throughout the study period, including the year of the asphalt restoration project.
1.4	Asphalt Footpaths	499	SY	$36.00	$17,964	15	2028	50%	$11,719	2034	50%	$13,994	2040	50%	$16,709	Asphalt footpaths generally 4' and 8' in width are constructed throughout the community. The 4' path constructed between the townhomes and the west side tot lot is in fair to good condition. The 8' path constructed between the townhomes and Reston Parkway is in good condition. Delineation between Southgate Square and Reston Association path ownership is difficult to determine and is based on location of the Southgate Square HOA property sign on this path. Any trip hazards or hazardous surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2 CONCRETE COMPONENTS																
2.1	Concrete Sidewalks	30,524	SF	$11.50	$351,026	5	2019	3%	$10,531	2024	4%	$16,277	2029	4%	$18,870	Concrete sidewalks, generally 4' and 6' wide, are present on one or both sides of streets within the community. Their thickness could not be visually determined. They range from fair to good condition with a significant number of tripping hazards observed. About 880 square feet (2.8% of the total area) is either cracked, settled or heaved between sections. We have not scheduled replacement of all sections with lesser surface defects. Severely scaled sections will tend to deteriorate more quickly over time and should be replaced in each replacement cycle. Cyclic repairs are scheduled, as full replacement at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with work on other concrete components to take advantage of economies of scale in packaging concrete restoration work. Any trip hazards or surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2.2	Concrete Curbs & Gutters	5,938	LF	$36.00	$213,768	5	2019	2%	$4,275	2024	3%	$7,434	2029	3%	$8,619	The drivelanes and parking bays are lined with standard-profile, cast-in-place, concrete curbs and gutters. They are in generally continuing good condition with about 2% of the length exhibiting transverse cracks or settled sections. We observed approximately 12 damaged sections, the worst of which should be replaced. Minor chips usually do not justify replacement. Cyclic repairs are scheduled, as full replacement at one time is not appropriate or anticipated. Curb repairs are scheduled to coincide with work on other concrete components to maximize economies of scale. Any trip hazards or surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2.3	Concrete Steps	100	LF	$90.00	$9,000	5	2024	10%	$1,043	2029	20%	$2,419	2034	25%	$3,505	Concrete steps are constructed within the community providing access at grade differentials. These appear to be in continuing good condition. Some minor cracking at step and riser intersections were observed, which should be repaired/sealed to prevent freeze/thaw damage. Cyclic repairs are scheduled as full replacement of all steps at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with other concrete components to promote cost efficiencies. Any trip hazards or surface deficiencies should be addressed as soon as practicable to prevent personal injury.
3 SITE FEATURES																
3.1	Entrance Signage	1	EA	$2,500.00	$2,500	15	2032	100%	$3,671	2047	100%	$5,720				A painted, MDF (Medium Density Fiberboard) sign is installed at the entrance to the community on South Lakes Drive. The sign measures six feet by three feet high and is mounted on two, 4 x 4 vinyl posts. No landscape lighting or irrigation systems were observed. The sign was installed circa 2017 and is in very good condition.
3.2	Timber Retaining Walls	978	SF	$38.00	$37,164	20	2020	100%	$38,279	2040	100%	$69,136				Pressure-treated retaining walls are constructed of 6" by 6" timbers at two grade differentials within the community. The walls constructed at the east tot lot are in fair condition. The wall and handrailing constructed below the townhomes on the west side of the community is also in fair condition, but the path above this wall, which appears to be on common property and serves several rear townhome entrances, continues to be in dangerous condition. Extreme tripping hazards were observed at this location. This path should be repaired under Operations as soon as possible.
3.3	Street and Informational Signage	13	EA	$155.00	$2,015	20	2027	50%	$1,276	2037	50%	$1,715	2047	50%	$2,305	Standard metal traffic, parking, and access control signs, typically 12" by 18", mounted on perforated metal posts, and one timber sign are located throughout the community. A total of approximately nine signs and four 'Fido' dog clean up stations were observed. Posts and signs appear to range from good to fair condition, with faded and out-of-plumb signs observed.

Reserve Fund Plan for SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE
TABLE 1
2019 Through 2038

MASON & MASON
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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	18
3.4	Light Poles & Fixtures	23	EA	$3,200.00	$73,600	35	2020	100%	$75,808	2055	100%	$213,313				A Board member previously advised us that the community is responsible for replacement of the street lights, even though they were originally installed by Dominion Power. Approximately 23 concrete light poles, about 12' high, with traditional lantern fixtures provide street and area illumination. Maintenance of the lights is completed through Dominion Power and billed to the Cluster Association. Most light poles and fixtures are in fair condition. Some poles were observed out of plumb and some fixture lenses were missing. The wiring of one pole was being replaced as we were on-site. We are budgeting for replacement and installation of typical fiberglass reinforced plastic (FRP) light poles and fixtures. The lighting was not observed after dark. No problems were reported with lighting.
3.5	Tot Lot & Outdoor Furniture	1	LS	$44,000.00	$44,000	15	2021	100%	$46,680	2036	100%	$72,725	2051	100%	$113,304	Two tot lots are located within the community. The east tot lot equipment consists of 115 linear feet of timber borders, three benches and a trash receptacle, a two post wood swing set, and a 13 post, plastic and metal play module with climbing equipment and two plastic slides. The west tot lot has 118 linear feet of timber borders, three benches and a trash receptacle, and an 8 post, plastic and metal play module with climbing equipment and two plastic slides. Additional benches are installed at various locations in the community. All play equipment appears to be in fair condition, with staining and minor rust observed. The outdoor furniture ranges from fair to generally good or newer condition. 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.
3.6	Tree Trimming, Removal, & Replacement Allowance	1	LS	$10,000.00	$10,000	30	2019	100%	$10,000	2020	100%	$10,300	2021	100%	$10,609	Due to the age of the property, the site has many maturing trees. Trees must occasionally be trimmed, removed, and/or replaced, because of damage, disease, or if they outsize their location. We observed many trees at sidewalks that have outgrown their location and will continue to cause issues with the pavement and concrete assets. This line item addresses periodic tree trimming, removal, or replacement throughout the study period.
3.7	Storm Water Drainage System Allowance	1	LS	$8,500.00	$8,500	7	2020	100%	$8,755	2027	100%	$10,768	2034	100%	$13,243	Storm water drainage is provided by concrete yard drains, curb drop inlets, and underground structures, leading storm water offsite. 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. This line item addresses potential storm water collection, drainage, and erosion issues throughout the study period and does not represent a single expense or action already identified as 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
SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2019 Through 2038

MASON & MASON
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YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2019	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2019					2019	
	2.1	Concrete Sidewalks	$10,531	$10,531	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	$4,275	$4,275		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$10,000		
					$24,806	
2020					2020	
	3.2	Timber Retaining Walls	$37,164	$38,279	TOTAL EXPENDITURES	
	3.4	Light Poles & Fixtures	$73,600	$75,808		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$10,300		
	3.7	Storm Water Drainage System Allowance	$8,500	$8,755		
					$133,142	
2021					2021	
	3.5	Tot Lot & Outdoor Furniture	$44,000	$46,680	TOTAL EXPENDITURES	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$10,609		
					$57,289	
2022					2022	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$10,927	TOTAL EXPENDITURES	
					$10,927	
2023					2023	
	1.1	Asphalt Restoration Project	$132,400	$149,017	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	$18,000	$20,259		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$11,255		
					$180,532	
2024					2024	
	2.1	Concrete Sidewalks	$14,041	$16,277	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	$6,413	$7,434		
	2.3	Concrete Steps	$900	$1,043		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$11,593		
					$36,348	
2025					2025	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$11,941	TOTAL EXPENDITURES	
					$11,941	
2026					2026	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$12,299	TOTAL EXPENDITURES	
					$12,299	
2027					2027	
	3.3	Street and Informational Signage	$1,008	$1,276	TOTAL EXPENDITURES	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$12,668		
	3.7	Storm Water Drainage System Allowance	$8,500	$10,768		
					$24,712	
2028					2028	
	1.4	Asphalt Footpaths	$8,982	$11,719	TOTAL EXPENDITURES	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$13,048		
					$24,767	
2029					2029	
	1.2	Asphalt Seal Coat	$12,710	$17,082	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	$4,500	$6,048		
	2.1	Concrete Sidewalks	$14,041	$18,870		
	2.2	Concrete Curbs & Gutters	$6,413	$8,619		
	2.3	Concrete Steps	$1,800	$2,419		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$13,439		
					$66,476	

Reserve Fund Plan for
SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2019 Through 2038

MASON & MASON
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YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2019	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2030					2030	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$13,842	TOTAL EXPENDITURES	
					$13,842	
2031					2031	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$14,258	TOTAL EXPENDITURES	
					$14,258	
2032					2032	
	3.1	Entrance Signage	$2,500	$3,671	TOTAL EXPENDITURES	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$14,685		
					$18,357	
2033					2033	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$15,126	TOTAL EXPENDITURES	
					$15,126	
2034					2034	
	1.4	Asphalt Footpaths	$8,982	$13,994	TOTAL EXPENDITURES	
	2.1	Concrete Sidewalks	$14,041	$21,875		
	2.2	Concrete Curbs & Gutters	$6,413	$9,991		
	2.3	Concrete Steps	$2,250	$3,505		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$15,580		
	3.7	Storm Water Drainage System Allowance	$8,500	$13,243		
					$78,188	
2035					2035	
	1.2	Asphalt Seal Coat	$12,710	$20,396	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	$9,000	$14,442		
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$16,047		
					$50,886	
2036					2036	
	3.5	Tot Lot & Outdoor Furniture	$44,000	$72,725	TOTAL EXPENDITURES	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$16,528		
					$89,254	
2037					2037	
	3.3	Street and Informational Signage	$1,008	$1,715	TOTAL EXPENDITURES	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$17,024		
					$18,740	
2038					2038	
	3.6	Tree Trimming, Removal, & Replacement Allowanc	$10,000	$17,535	TOTAL EXPENDITURES	
					$17,535	

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.

Column **8** **Balance to Asset Base Ratio,** expressed as a percentage, is the ratio between the ending reserve fund balance and the total asset base for that year. The ratio is useful to the analysts in understanding general financial condition, but there is no standard ratio as each community's condition and complexity varies.

Reserve Fund Plan for
SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

CURRENT FUNDING ANALYSIS
CASH FLOW METHOD
TABLE 3

MASON & MASON
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In Dollars	Beginning Reserve Fund Balance:	Annual Contribution To Reserves:	Contribution Percentage Increase:	Annual Inflation Factor:	Annual Interest Income Factor:
	117,179	6,309	3.00%	3.00%	2.50%

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
2019	932,647	117,179	6,309	2,712	24,806	101,394
2020	960,627	101,394	6,498	0	133,142	(25,250)
2021	989,446	(25,250)	6,693	0	57,289	(75,845)
2022	1,019,129	(75,845)	6,894	0	10,927	(79,878)
2023	1,049,703	(79,878)	7,101	0	180,531	(253,308)
2024	1,081,194	(253,308)	7,314	0	36,347	(282,342)
2025	1,113,630	(282,342)	7,533	0	11,941	(286,749)
2026	1,147,039	(286,749)	7,759	0	12,299	(291,289)
2027	1,181,450	(291,289)	7,992	0	24,712	(308,009)
2028	1,216,893	(308,009)	8,232	0	24,767	(324,544)
2029	1,253,400	(324,544)	8,479	0	66,477	(382,542)
2030	1,291,002	(382,542)	8,733	0	13,842	(387,651)
2031	1,329,732	(387,651)	8,995	0	14,258	(392,914)
2032	1,369,624	(392,914)	9,265	0	18,356	(402,005)
2033	1,410,713	(402,005)	9,543	0	15,126	(407,588)
2034	1,453,034	(407,588)	9,829	0	78,188	(475,947)
2035	1,496,625	(475,947)	10,124	0	50,885	(516,708)
2036	1,541,524	(516,708)	10,428	0	89,253	(595,533)
2037	1,587,770	(595,533)	10,741	0	18,739	(603,532)
2038	1,635,403	(603,532)	11,063	0	17,535	(610,004)
STUDY PERIOD TOTALS			169,525	2,712	899,420	

Reserve Fund Plan for
SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

ALTERNATIVE FUNDING ANALYSIS
CASH FLOW METHOD
HYBRID APPROACH
TABLE 3.1

MASON & MASON
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In Dollars	Beginning Reserve Fund Balance:	Annual Contribution To Reserves:	Contribution Percentage Increase:	Annual Inflation Factor:	Annual Interest Income Factor:
	117,179	6,309	3.00%	3.00%	2.50%

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
2019	932,647	117,179	45,681	3,249	24,806	141,304
2020	960,627	141,304	53,052	2,487	133,142	63,701
2021	989,446	63,701	59,052	1,638	57,289	67,102
2022	1,019,129	67,102	65,052	2,436	10,927	123,663
2023	1,049,703	123,663	67,004	1,588	180,531	11,723
2024	1,081,194	11,723	49,779	482	36,347	25,637
2025	1,113,630	25,637	51,273	1,186	11,941	66,155
2026	1,147,039	66,155	52,811	2,226	12,299	108,893
2027	1,181,450	108,893	54,395	3,160	24,712	141,736
2028	1,216,893	141,736	56,027	4,012	24,767	177,008
2029	1,253,400	177,008	57,708	4,360	66,477	172,599
2030	1,291,002	172,599	59,439	4,988	13,842	223,184
2031	1,329,732	223,184	61,222	6,286	14,258	276,434
2032	1,369,624	276,434	63,059	7,602	18,356	328,738
2033	1,410,713	328,738	64,951	8,994	15,126	387,557
2034	1,453,034	387,557	66,899	9,651	78,188	385,919
2035	1,496,625	385,919	68,906	10,008	50,885	413,948
2036	1,541,524	413,948	70,973	10,223	89,253	405,891
2037	1,587,770	405,891	73,103	11,007	18,739	471,262
2038	1,635,403	471,262	75,296	12,707	17,535	541,729
STUDY PERIOD TOTALS			1,215,681	108,289	899,420	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
SOUTHGATE SQUARE CLUSTER ASSOCIATION
Reston, Virginia

FUNDING ANALYSIS
COMPONENT METHOD
TABLE 4

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

In Dollars **117,179**

Component Number	COMPONENT	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
1 ASPHALT COMPONENTS																					
1.1	Asphalt Restoration Project	23,591	23,591	23,591	23,591	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151	11,151
1.2	Asphalt Seal Coat	1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502	1,502	3,148	3,148	3,148	3,148	3,148	3,148	2,076	2,076	2,076	2,076
1.3	Asphalt Repair Allowance	4,007	4,007	4,007	4,007	933	933	933	933	933	933	2,229	2,229	2,229	2,229	2,229	2,229	5,323	5,323	5,323	5,323
1.4	Asphalt Footpaths	1,008	1,008	1,008	1,008	1,008	1,008	1,008	1,008	1,008	2,160	2,160	2,160	2,160	2,160	2,160	2,579	2,579	2,579	2,579	2,579
2 CONCRETE COMPONENTS																					
2.1	Concrete Sidewalks	8,666	3,053	3,053	3,053	3,053	3,540	3,540	3,540	3,540	3,540	4,103	4,103	4,103	4,103	4,103	4,757	4,757	4,757	4,757	4,757
2.2	Concrete Curbs & Gutters	3,673	1,395	1,395	1,395	1,395	1,617	1,617	1,617	1,617	1,617	1,874	1,874	1,874	1,874	1,874	2,173	2,173	2,173	2,173	2,173
2.3	Concrete Steps	196	196	196	196	196	454	454	454	454	454	658	658	658	658	658	305	305	305	305	305
3 SITE FEATURES																					
3.1	Entrance Signage	221	221	221	221	221	221	221	221	221	221	221	221	221	314	314	314	314	314	314	314
3.2	Timber Retaining Walls	23,877	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662	2,662
3.3	Street and Informational Signage	129	129	129	129	129	129	129	129	151	151	151	151	151	151	151	151	151	151	203	203
3.4	Light Poles & Fixtures	50,406	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810	3,810
3.5	Tot Lot & Outdoor Furniture	14,376	14,376	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	3,993	6,220	6,220	6,220
3.6	Tree Trimming, Removal, & Replacement All	16,782	10,466	10,780	11,104	11,437	11,780	12,133	12,497	12,872	13,258	13,656	14,066	14,488	14,922	15,370	15,831	16,306	16,795	17,299	17,818
3.7	Storm Water Drainage System Allowance	5,236	1,406	1,406	1,406	1,406	1,406	1,406	1,406	1,729	1,729	1,729	1,729	1,729	1,729	1,729	2,127	2,127	2,127	2,127	2,127
ANNUAL COMPONENT CONTRIBUTION TOTALS		153,670	67,822	57,753	58,077	42,896	44,206	44,559	44,923	45,643	47,181	51,545	51,955	52,377	52,904	53,352	55,230	57,727	60,443	60,999	61,518

COMPONENT METHOD SUMMARY	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038
BEGINNING RESERVE FUND BALANCE	117,179	251,103	193,059	199,193	252,173	121,500	133,035	169,625	207,152	233,944	262,918	255,338	300,617	347,053	391,099	439,944	428,865	447,340	430,667	484,651
PLUS ANNUAL COMPONENT CONTRIBUTION	153,670	67,822	57,753	58,077	42,896	44,206	44,559	44,923	45,643	47,181	51,545	51,955	52,377	52,904	53,352	55,230	57,727	60,443	60,999	61,518
CAPITAL EXPENDITURES	24,806	133,142	57,289	10,927	180,531	36,347	11,941	12,299	24,712	24,767	66,477	13,842	14,258	18,356	15,126	78,188	50,885	89,253	18,739	17,535
SUBTOTAL	246,043	185,783	193,523	246,343	114,538	129,359	165,653	202,249	228,083	256,358	247,986	293,451	338,736	381,601	429,325	416,986	435,707	418,530	472,927	528,634
PLUS INTEREST INCOME @ 2.50%	5,060	7,275	5,670	5,830	6,962	3,676	3,972	4,903	5,861	6,560	7,352	7,166	8,317	9,498	10,618	11,879	11,633	12,137	11,723	13,096
FULLY FUNDED RESERVE FUND BALANCE	251,103	193,059	199,193	252,173	121,500	133,035	169,625	207,152	233,944	262,918	255,338	300,617	347,053	391,099	439,944	428,865	447,340	430,667	484,651	541,729

FULLY FUNDED BALANCE GOAL

PERCENT FUNDED FOR CURRENT CYCLE	49%	TOTAL EXPENDITURES	899,420	TOTAL CONTRIBUTIONS	1,164,780	STUDY PERIOD TOTAL INTEREST	159,190	AVERAGE ANNUAL CONTRIBUTION	58,239

PHOTOGRAPHS
WITH
DESCRIPTIVE NARRATIVES

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

PHOTO #1
The asphalt drivelanes and parking bays range from fair to good condition. Some areas were difficult to observe, as heavy leaf foliage was present.

PHOTO #2
Some deflected pavement was observed. Full restoration of the asphalt (full-width profile milling and new compacted asphalt) is scheduled in about four years.

PHOTO #3
Most longitudinal and transverse cracking was filled circa 2017. Pavement maintenance should include full-depth repair of deflected pavement, crack filling, and seal coating, every six years.

PHOTO #4
The asphalt footpaths range from fair to generally continuing good condition.

PHOTO #5
Many concrete sidewalk panels are heaved or settled, due to significant tree root systems. These height differentials are potential tripping hazards, which should be repaired when present.

PHOTO #6
Several lineal areas of concrete sidewalk panels settled at curbs were identified, which are also potential tripping hazards, requiring repair.

PHOTO #7
Most of the concrete curbs and gutters are in continuing good condition. Some of the root systems are working their way under the pavement and are beginning to heave the asphalt.

PHOTO #8
The entrance sign was recently replaced and is in good condition.

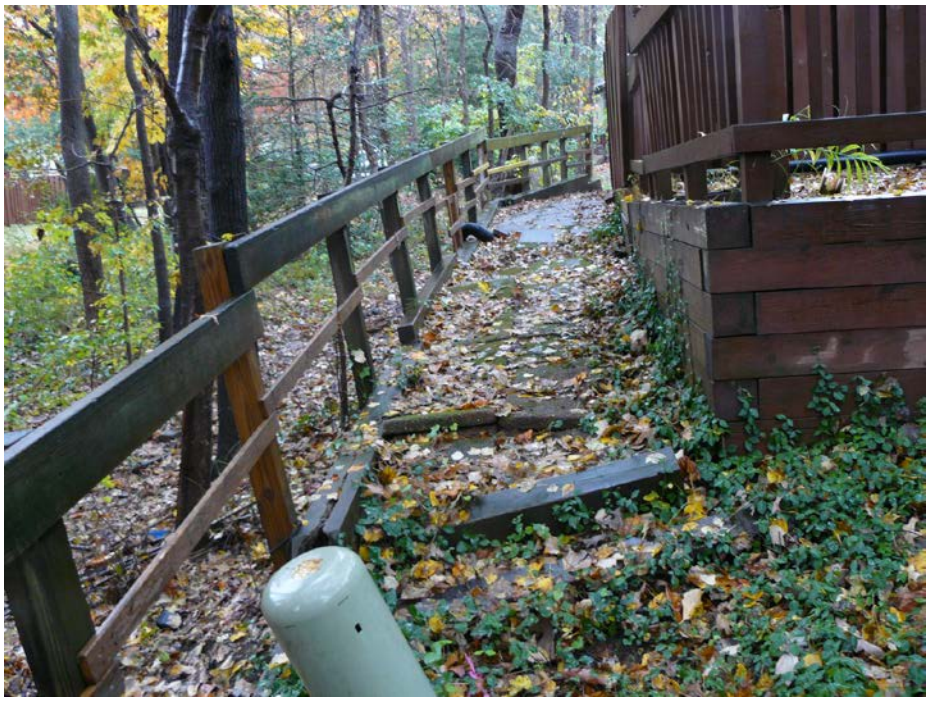

PHOTO #9
The retaining wall and handrailings installed behind unit 2365 are in fair condition. However, severe tripping hazards have still not been repaired in this area.

PHOTO #10
The street and informational signage ranges from fair to generally continuing good condition.

PHOTO #11
The concrete light poles and fixtures appear to be in fair condition. One light was in the process of having the underground wiring replaced. We have scheduled street light replacement near-term, as these fixtures and wiring are deteriorating.

PHOTO #12
Both of the tot lots appear to be in fair condition. Pressure-washing/cleaning the play modules may help to maximize the service life. If this is accomplished, the play module replacement may be deferred by a couple of years.