MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

MEMBER OF community ASSOCIATIONS INSTITUTE

Condition Assessment
&
Reserve Fund Plan Update
2020
Martin Pond
Burke, Virginia

Prepared for:
The Board of Trustees
Burke Centre Conservancy

MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.

MEMBER OF community ASSOCIATIONS INSTITUTE

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March 27, 2020

Mr. Bob Bray, Finance Administrator
Burke Centre Conservancy
6060 Burke Centre Parkway
Burke, Virginia 22015-3702

RE: CONDITION ASSESSMENT AND RESERVE FUND PLAN UPDATE 2020
Martin Pond Cluster
Burke, Virginia
Project No. 8903#21

Dear Mr. Bray:

Mason & Mason Capital Reserve Analysts, Inc. has completed the report for Martin Pond.

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 genuinely appreciate the opportunity to work with you and the Cluster.

Sincerely,

Mason & Mason Capital Reserve Analysts, Inc.

Levi K. Mason, R. S.
Vice President

James G. Mason, R. S.
Principal

TABLE OF CONTENTS

RESERVE FUND PLAN

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 Martin Pond Cluster'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 reserve fund is fully funded through 2019. Our goal is to maintain fully funded status through the end of the 20-year period (2039).

To maintain fully funded status, the Board should:

- Reduce the annual contribution in 2021 from $10,008 to $8,094, followed by annual adjustments of 1.0% thereafter.
- This represents a reduction from $13.03 to $10.54 (a net reduction of $2.49) per residence, per month (based on 64 single-family homes).

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 safety, 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 are 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: Martin Pond Cluster is comprised of 64 single-family homes located on the south side of Marshall Pond Road (Route 6440) in Burke, Virginia. The cluster was constructed circa 1978. Five private drivelanes serve the cluster designated as Geranium, Holly, Iris, Juniper, and Kalanchoe. The pavement layout does not include concrete sidewalks, curbs and gutters, or parking areas. Site features include storm water drainage.

We are providing the Condition Assessment and Reserve Fund Plan Update based on Proposal Acceptance Agreement No. 8903#21 dated October 9, 2019. 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. Ultimately, the establishment, management, and expenditure of reserves are within the discretion of the Cluster and its Board of Directors pursuant to their organizational documents and subject to the laws of the applicable jurisdiction. We are not financially associated with Burke Centre Conservancy Management or the Cluster, and 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 Martin Pond Cluster in 2006, and Level II Updates in 2010 and 2015. This report is an additional Level II Update 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.

Levi K. Mason R. S. and Eva Pastalkova, Ph.D., Analyst conducted the field evaluation for this report on March 17, 2020. The sky was partially overcast, and the temperature was approximately 64 degrees F. Light precipitation occurred the night before the site visit. The pavements and grounds were partially wet and generally clean of debris.

1.2 Principal Findings: The asphalt pavements of 4 pipestems (Germanium, Holly, Juniper, and Kalanchoe) are in overall continuing good condition as indicated by only a small amount of deflective, transverse, and longitudinal cracking. However, the fifth pipestem (Iris) is in fair condition due to a larger amount of deflective and linear cracking. These pavement deficiencies should be selectively addressed during the next scheduled cycle of repairs to maximize asphalt service life.

The pricing provided by Management indicates that moderate price reductions have occurred since 2015 resulting in a slightly lower than projected level of contribution. Currently the reserve fund appears to be fully funded for the current cycle and the contributions should be slightly lowered to address generational equity issues, while maintaining fully funded status long-term. The Association has adequate reserve funding and should be proactive in making the necessary common component repairs and replacements.

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 timeline that is more convenient to schedule and logical to accomplish. Please see the Table 1 Discussion, Column 18, and the Asphalt Pavement Report in Section 7, 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. Substantially higher inflation rates have not materialized since then. So, we are using a 2% annual rate of inflation in our calculations. Interest income has also remained low since 2008, and many smaller Associations and Condominiums are earning less than 2% on savings accounts. So, we are using a 1.5% interest income rate of return in our calculations. However, unlike reserves, interest income is taxable, which may reduce the net gain even further. 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 Cluster is on a calendar fiscal year. Management reported that the audited reserve fund balance, including cash and securities, as of December 31, 2019, was $104,320. We have used 2.00% annual inflation and 1.50% annual interest income in our calculations. The total expenditures for the twenty-year period for both the Cash Flow Method and Component Method are projected to be $204,464.

2.2 Current Funding Analysis, Cash Flow Method (Table 3): The 2020 annual contribution to reserves has been set at $10,008 with a presumed 2.0% annual increase. At this level, the total for all annual contributions for the twenty-year period would be $243,168, and the total interest income is projected to be $38,830. This funding results in unnecessarily high balances throughout the twenty-year period and over funds the reserves.

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 reducing the annual contribution to $8,094 in 2021 and providing a 1.00% annual adjustment thereafter. This plan allows for a gradual increase over time after the initial reduction, and addresses generational equity issues. The total for all annual contributions for the twenty-year period would be $178,457, and the total interest income is projected to be $30,147. The fully funded balance in 2039 is $108,460.

2.4 Funding Analysis, Component Method (Table 4): This method of funding would require variable annual contributions, averaging $9,103 over the twenty-year period. The total for all annual contributions would be $182,066, and the total interest income is projected to be $26,538. The fully funded balance in 2039 is $108,460. 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 ensuring 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.

7. ASPHALT PAVEMENT REPORT

Street Name	Total SY Asphalt Pavement	SY Full-Depth Repairs	Linear Footage Cracks	Parking Spaces	Parking Bays
Geranium,10143 to 10167	1,800	53	1,688	0	0
Holly, 10169 to 10187	1,187	30	1,113	0	0
Iris, 10197 to 10209	1,200	92	1,350	0	0
Juniper, 10211 to 11235	1,492	26	1,958	0	0
Kalanchoe, 10237 to 10255	982	6	921	0	0
TOTALS	6,661	207	7,030	0	0

All quantities approximate

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
21. MARTIN POND CLUSTER
Burke, Virginia

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE
TABLE 1
2020 Through 2039

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

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**	**6,661**	**SY**	**$10.00**	**$66,610**	**18**	**2029**	**100%**	**$79,605**	**2047**	**100%**	**$113,696**				**The asphalt pavement throughout the community appears to be in generally good condition. As a result, we have not made any changes to the restoration project schedule that was established in our 2015 report. The thickness of the pavement could not be visually determined. Restoration includes full-width milling to a depth of 2" 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 re-striping, but not replacement of any inadequate sub-base. A full service life is dependent on Preventive maintenance being performed as suggested in Preventive Maintenance section of the report and scheduled in Items 1.2 and 1.3 below. See the Asphalt Pavement Report, Section 7, for additional details.**
1.2	**Asphalt Seal Coat**	**6,661**	**SY**	**$1.05**	**$6,994**	**6**	**2023**	**100%**	**$7,422**	**2035**	**100%**	**$9,413**	**2041**	**100%**	**$10,601**	**It appears the pavement was appropriately seal coated approximately three years ago. 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 Full-Depth Repairs & Crack Fill Allowance**	**1**	**LS**	**$40,279.00**	**$40,279**	**6**	**2023**	**50%**	**$21,372**	**2029**	**100%**	**$48,137**	**2035**	**25%**	**$13,553**	**A small amount of deflected pavement (approximately 115 square yards, which is less than 2% of the total surface area), indicative of sub-base damage, and a small amount of random longitudinal and transverse cracking (approximately 5,680 linear feet) were observed in four out of the five pipestems. The fifth pipestem (Iris) had higher rate of deficiencies (approximately 92 s.y. of deflective cracking, or almost 8% of the surface area), and approximately 1,350 l.f. of transverse and longitudinal cracking). Deficiencies of this pipestem should be addressed more aggressively during the next scheduled phase of repairs. Repairs are essential in order to achieve the projected remaining service life of the pavement. Full-depth repairs and crack filling are scheduled progressively every six years throughout the study period, including the year of the asphalt restoration project.**
2 SITE FEATURES																
2.1	**Storm Water Drainage System Allowance**	**1**	**LS**	**$3,600.00**	**$3,600**	**5**	**2023**	**100%**	**$3,820**	**2028**	**100%**	**$4,218**	**2033**	**100%**	**$4,657**	**Storm water drainage is provided by underground structures. We did not observe any significant settlement within the Cluster. Though storm water drainage systems are a long life component and catastrophic failure is not anticipated, it is prudent to plan for localized repairs and repairs to ancillary damage as the system ages. 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.**
3 ENGINEERING																
3.1	**Cyclic Updates**	**1**	**LS**	**$1,526.00**	**$1,526**	**5**	**2020**	**100%**	**$1,526**	**2025**	**100%**	**$1,685**	**2030**	**100%**	**$1,860**	**At the direction of Management, we have included an allowance to cover the cost of future updates, which are performed on a five-year basis.**

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
21. MARTIN POND CLUSTER
Burke, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2020 Through 2039

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

YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2020	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2020					2020	
	3.1	Cyclic Updates	$1,526	$1,526	TOTAL EXPENDITURES	
					$1,526	
2021					2021	
					NO EXPENDITURES	
2022					2022	
					NO EXPENDITURES	
2023					2023	
	1.2	Asphalt Seal Coat	$6,994	$7,422	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repairs & Crack Fill Allowance	$20,140	$21,372		
	2.1	Storm Water Drainage System Allowance	$3,600	$3,820		
					$32,615	
2024					2024	
					NO EXPENDITURES	
2025					2025	
	3.1	Cyclic Updates	$1,526	$1,685	TOTAL EXPENDITURES	
					$1,685	
2026					2026	
					NO EXPENDITURES	
2027					2027	
					NO EXPENDITURES	
2028					2028	
	2.1	Storm Water Drainage System Allowance	$3,600	$4,218	TOTAL EXPENDITURES	
					$4,218	
2029					2029	
	1.1	Asphalt Restoration Project	$66,610	$79,605	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repairs & Crack Fill Allowance	$40,279	$48,137		
					$127,742	
2030					2030	
	3.1	Cyclic Updates	$1,526	$1,860	TOTAL EXPENDITURES	
					$1,860	
2031					2031	
					NO EXPENDITURES	
2032					2032	
					NO EXPENDITURES	
2033					2033	
	2.1	Storm Water Drainage System Allowance	$3,600	$4,657	TOTAL EXPENDITURES	
					$4,657	
2034					2034	
					NO EXPENDITURES	
2035					2035	
	1.2	Asphalt Seal Coat	$6,994	$9,413	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repairs & Crack Fill Allowance	$10,070	$13,553		
	3.1	Cyclic Updates	$1,526	$2,054		
					$25,019	
2036					2036	
					NO EXPENDITURES	
2037					2037	
					NO EXPENDITURES	
2038					2038	
	2.1	Storm Water Drainage System Allowance	$3,600	$5,142	TOTAL EXPENDITURES	
					$5,142	
2039					2039	
					NO EXPENDITURES	

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
21. MARTIN POND CLUSTER
Burke, 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:
104,320	10,008	2.00%	2.00%	1.50%

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
2020	119,009	104,320	10,008	1,645	1,526	114,447
2021	121,389	114,447	10,208	1,812	0	126,467
2022	123,817	126,467	10,412	1,995	0	138,874
2023	126,293	138,874	10,621	1,919	32,614	118,799
2024	128,819	118,799	10,833	1,883	0	131,515
2025	131,396	131,515	11,050	2,063	1,685	142,943
2026	134,024	142,943	11,271	2,251	0	156,464
2027	136,704	156,464	11,496	2,457	0	170,417
2028	139,438	170,417	11,726	2,635	4,218	180,560
2029	142,227	180,560	11,960	1,784	127,742	66,563
2030	145,071	66,563	12,200	1,090	1,860	77,993
2031	147,973	77,993	12,444	1,280	0	91,716
2032	150,932	91,716	12,693	1,489	0	105,898
2033	153,951	105,898	12,946	1,667	4,657	115,854
2034	157,030	115,854	13,205	1,858	0	130,917
2035	160,171	130,917	13,469	1,884	25,020	121,250
2036	163,374	121,250	13,739	1,943	0	136,932
2037	166,641	136,932	14,014	2,183	0	153,128
2038	169,974	153,128	14,294	2,388	5,142	164,668
2039	173,374	164,668	14,580	2,606	0	181,854
STUDY PERIOD TOTALS			243,168	38,830	204,464	

Reserve Fund Plan for
21. MARTIN POND CLUSTER
Burke, 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:
104,320	10,008	1.00%	2.00%	1.50%

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
2020	119,009	104,320	10,008	1,645	1,526	114,447
2021	121,389	114,447	8,094	1,795	0	124,336
2022	123,817	124,336	8,175	1,945	0	134,456
2023	126,293	134,456	8,257	1,833	32,614	111,931
2024	128,819	111,931	8,340	1,759	0	122,029
2025	131,396	122,029	8,423	1,898	1,685	130,665
2026	134,024	130,665	8,507	2,043	0	141,215
2027	136,704	141,215	8,592	2,203	0	152,011
2028	139,438	152,011	8,678	2,332	4,218	158,803
2029	142,227	158,803	8,765	1,430	127,742	41,256
2030	145,071	41,256	8,853	680	1,860	48,929
2031	147,973	48,929	8,941	812	0	58,682
2032	150,932	58,682	9,031	960	0	68,672
2033	153,951	68,672	9,121	1,074	4,657	74,210
2034	157,030	74,210	9,212	1,196	0	84,618
2035	160,171	84,618	9,304	1,150	25,020	70,052
2036	163,374	70,052	9,397	1,135	0	80,584
2037	166,641	80,584	9,491	1,295	0	91,370
2038	169,974	91,370	9,586	1,416	5,142	97,231
2039	173,374	97,231	9,682	1,548	0	108,460
STUDY PERIOD TOTALS			178,457	30,147	204,464	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
21. MARTIN POND CLUSTER
Burke, Virginia

FUNDING ANALYSIS
COMPONENT METHOD
TABLE 4

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

Beginning Reserve Fund Balance:

In Dollars **104,320**

Component Number	COMPONENT	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
1 ASPHALT COMPONENTS																					
1.1	Asphalt Restoration Project	0	0	0	0	0	0	0	0	0	5,413	5,413	5,413	5,413	5,413	5,413	5,413	5,413	5,413	5,413	5,413
1.2	Asphalt Seal Coat	0	0	0	704	704	704	704	704	704	704	704	704	704	704	704	1,687	1,687	1,687	1,687	1,687
1.3	Asphalt Full-Depth Repairs & Crack Fill Allow	0	0	0	7,542	7,542	7,542	7,542	7,542	7,542	2,157	2,157	2,157	2,157	2,157	2,157	4,859	4,859	4,859	4,859	4,859
2 SITE FEATURES																					
2.1	Storm Water Drainage System Allowance	0	0	0	799	799	799	799	799	896	896	896	896	896	990	990	990	990	990	1,093	1,093
3 ENGINEERING																					
3.1	Cyclic Updates	319	319	319	319	319	358	358	358	358	358	395	395	395	395	395	436	436	436	436	436
ANNUAL COMPONENT CONTRIBUTION TOTALS		319	319	319	9,364	9,364	9,403	9,403	9,403	9,500	9,528	9,565	9,565	9,565	9,659	9,659	13,385	13,385	13,385	13,488	13,488

COMPONENT METHOD SUMMARY	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039
BEGINNING RESERVE FUND BALANCE	104,320	104,691	106,594	108,526	86,991	97,745	107,016	118,113	129,376	136,690	20,618	28,713	38,789	49,018	54,839	65,406	54,868	69,191	83,730	93,451
PLUS ANNUAL COMPONENT CONTRIBUTION	319	319	319	9,364	9,364	9,403	9,403	9,403	9,500	9,528	9,565	9,565	9,565	9,659	9,659	13,385	13,385	13,385	13,488	13,488
CAPITAL EXPENDITURES	1,526	0	0	32,614	0	1,685	0	0	4,218	127,742	1,860	0	0	4,657	0	25,020	0	0	5,142	0
SUBTOTAL	103,113	105,010	106,913	85,276	96,355	105,463	116,419	127,516	134,658	18,476	28,323	38,278	48,354	54,020	64,498	53,771	68,253	82,576	92,076	106,939
PLUS INTEREST INCOME @ 1.50%	1,578	1,584	1,613	1,716	1,390	1,553	1,693	1,861	2,032	2,142	389	512	664	819	907	1,097	938	1,154	1,375	1,522
FULLY FUNDED RESERVE FUND BALANCE	104,691	106,594	108,526	86,991	97,745	107,016	118,113	129,376	136,690	20,618	28,713	38,789	49,018	54,839	65,406	54,868	69,191	83,730	93,451	108,460

FULLY FUNDED BALANCE GOAL

PERCENT FUNDED FOR CURRENT CYCLE	203%	TOTAL EXPENDITURES	204,464	TOTAL CONTRIBUTIONS	182,066	STUDY PERIOD TOTAL INTEREST	26,538	AVERAGE ANNUAL CONTRIBUTION	9,103