



**MASON & MASON**  
CAPITAL RESERVE ANALYSTS, INC.



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Condition Assessment  
and  
Reserve Fund Plan  
2006

for

**Beacon Pond**

Burke, Virginia



Prepared for:  
The Board of Trustees

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**MASON & MASON**  
CAPITAL RESERVE ANALYSTS, INC.



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May 31, 2006

Ms. Karen Rae Frank, Finance Administrator  
The Burke Centre Conservancy  
6060 Burke Centre Parkway  
Burke, Virginia 22015-3702

RE: **CONDITION ASSESSMENT AND RESERVE FUND PLAN 2006**  
**Beacon Pond**  
Burke, Virginia  
Project No. 5983-16

Dear Ms. Frank:

Mason & Mason Capital Reserve Analysts, Inc. has completed the report for the above community.

As outlined in our proposal, the report is being submitted to you and the Board of Trustees for review and comment. A review of Section 1.0 and 2.0 will provide you with our findings and financial analyses.

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

Sincerely,

**Mason & Mason Capital Reserve Analysts, Inc.**

James G. Mason, R. S.  
Principal

N. K. Mason, R. S.  
Principal



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### RESERVE FUND PLAN

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## FOREWORD

One of the most important assets held by a common-property owner's association is its replacement reserve fund. The goal of the fund is to protect property values, not only for common areas, but also the individual properties within the community whose values depend upon the condition of the common assets. Reserve fund plans protect property by providing a methodology for replacement of deteriorating capital assets. The end result of a successfully implemented reserve fund plan is an increased quality of life for community residents.

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## 1.0 INTRODUCTION

**1.1 Background:** Beacon Pond Cluster is comprised of 35 villa-style townhomes within seven buildings and six single-family homes located on Beacon Pond Lane off Marshall Pond Road (Route 643) in Burke, Virginia. The community was constructed in 1984. The street layout includes concrete sidewalks, curbs and gutters, driveway aprons at the single-family homes, and eleven parking bays providing eighty spaces. Site features include a storm water drainage system.

James G. Mason, R. S., and N. K. Mason, R. S. conducted the field evaluation for this report on May 30, 2006. The weather was clear and the temperature was approximately 95 degrees F. Precipitation had not occurred for several days prior to the site visit. Pavements, walkways, and grounds were generally dry and clean of debris.

**1.2 Principal Findings:** The common assets appear to be in overall fair to good condition. The cluster is now at twenty-two years of age in terms of replacement of major systems. We understand that the first full asphalt pavement restoration project was deferred in favor of localized repairs and the original pavement appears to be reaching the end of its service life with recent seal coat and crack-filling maintenance. Concrete sidewalks and curbs and gutters have received periodic replacements and appear to be in generally good condition. 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.

The net effect of these changes to the reserve fund plan is that there is a required increase to \$6.72 per residential unit (41 total) per month for the 2007 reserve contribution to properly fund at levels consistent with the Component Method. **Anything less than a Component Method level is deficit funding** and will eventually result in a shortage of funds possibly requiring large increases, bank loans, or special assessments, all of which should be avoided. Please see the Financial Overview, Section 2 below, for specific information, and a Cash Flow Alternative Funding Plan.

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 18, and the Asphalt Pavement Supplemental Report in Section 7, for specific information.

## 2.0 FINANCIAL OVERVIEW

**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, 2005, was **\$40,594**. We have used the **DMB projected, five-year average 4.00% annual interest income factor** and the **3.50% inflation factor** in our model. The total expenditures for the twenty-year study period for both the **Cash Flow Method and Component Method** are projected to be **\$150,268**.

**2.2 Current Funding Analysis, Cash Flow Method (Table 3 & Graph):** The current annual contribution to reserves is **\$2,408**. At this level, the total for all annual contributions for the twenty-year study period would be **\$48,160**, and the total interest income is projected to be **\$16,727**. **Continued funding at this level results in the depletion of the reserve fund by 2025, the last year of the reserve fund plan.**

**2.3 Alternative Funding Analysis, Cash Flow Method (Table 3.1 and Graph):** This alternative provides the annual contributions necessary to maintain balances more consistent with the **Component Method funding** by **increasing the annual contribution to \$3,304 in 2007** and providing an annual escalation factor of **3.50%**

(matching inflation) thereafter. This alternative allows for a gradual increase over time after the initial increase and addresses generational equity issues. The total for all annual contributions for the twenty-year study period would be **\$89,496**, and the total interest income is projected to be **\$31,505**. The reserve fund balance in the last year of the study (2025) is **\$11,327**, or a **4%** balance to asset base ratio.

**2.4 Funding Analysis, Component Method (Table 4 & Graph):** This method of funding would require annual contributions ranging from a low of **\$899** to a high of **\$7,259** for an average annual contribution throughout the twenty-year study period of **\$4,727**. The total for all annual contributions for the twenty-year study period would be **\$94,531**, and the total interest income is projected to be **\$26,470**. The **Fully Funded** ending balance in 2025 is **\$11,327**. The Component Method model considers the current reserve fund balance in computing individual component contributions for current cycles. **The Component Method model distributes the current reserve fund balance proportionally to all components prior to calculating the individual component contributions for each component cycle.**

**2.5 Reserve Funding Philosophy:** The condition assessment and reserve fund plan is intended to be a working tool for Management and the Board for planning over the long term in order to help them understand the complex issues before them and make informed decisions. The Board of Directors, in consultation with Management and accounting professionals, should decide which of the two reserve funding methods is appropriate for the community. **We believe that funding using the Cash Flow Method based on levels determined by the Component Method is the most appropriate and manageable approach.**

### **3.0 VISUAL EVALUATION METHODOLOGY**

The condition assessment forming the basis for this report was visual and non-invasive. We did not perform any destructive testing to uncover or expose hidden conditions. No operational testing of mechanical, electrical, plumbing, fire protection, or other internal systems was performed. No spaces were entered that were inaccessible or potentially hazardous. Code compliance, capacities and equipment adequacy for current loads were not addressed. Mason & Mason makes no warranty that every defect is disclosed. Our scope of work does not 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 evaluation, this report should not be considered a full safety evaluation of components.

Repair and replacement costs are based upon commonly accepted references and our experience with similar components installed in similar circumstances. Our opinions of costs are based on published construction cost data, experience with similar projects, information provided by local contractors and management personnel. 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 presume a normal level of past, present and future maintenance. No warranties or guarantees of component service life expectancies are expressed or implied and none should be inferred by this report. Actual experience in replacing components may differ significantly from the projections in the Reserve Fund Plan, because of conditions beyond our control or that were not visually apparent at the time of the evaluation. This report is not a mandate, but is intended to be a guide for future planning.

### **4.0 ACCOUNTING METHODS**

**4.1 Cash Flow Method of Funding (Tables 3, 3.1 etc.):** The balance of the reserve fund and corresponding annual contribution is determined by setting a level above a pre-determined minimum balance computed after the yearly expenditures. The minimum balance is typically expressed as a percentage, or ratio, of the total reserve fund balance to the asset base. The appropriate level is determined by a variety of factors including condition, age, and complexity of the community. This method is becoming widely accepted in part because of advanced computer modeling but also

because it can be a more efficient use of capital. **The goal should be to set the first year contribution at a level requiring only small annual inflationary increases, to fully fund the reserves long-term. This addresses generational equity issues, as the first year contribution will be equal to the last year in terms of the cost of money. We have determined through many years of experience that funding under the Cash Flow Method at levels determined by the Component Method will produce the best results. The combination of the two systems is the most manageable.** This method is depicted on Table 3, Current Funding Analysis Cash Flow Method, and Alternatives, if appropriate.

**4.2 Component Method of Funding (Table 4):** Each component is fully funded at 100% of its replacement value on a ratio directly proportionate to its remaining life cycle years. Each component is also allotted a percentage of the fund's total reserves (balance on hand) as part of this complex calculation prior to determining the actual annual contribution. **Fully funded** means the fund is on target, including time considerations. Funds set aside for replacement of individual components are not normally used for the replacement of other components. In rare cases where a reserve fund is actually overfunded, \$0 will be displayed on the component tables, indicating that the component is fully funded for that cycle. The Component Method usually results in annual contribution fluctuations and fund balances, but is considered the most conservative method for accruing reserve funds. This method is depicted on **Table 4, Funding Analysis Component Method.**

**4.3 Interest Income on Reserve Funds:** In order to replicate approximate financial conditions, interest income on reserve funds should be recognized. The financial tables have been programmed to calculate interest income based on a pre-determined rate. This rate can be set at any level, including zero, for those desiring to not recognize interest. **Typically, the rate used reflects OMB's (Office of Management and Budget) projection for T-Note rates during the 2005 through 2015 time period.** The rate should reflect, as accurately as possible, the actual combined rate of return on all securities and other instruments of investment.

Interest calculations are segregated into three individual asset components, and the results are summed to generate the yearly interest accumulations. Interest accrued by the reserve fund assets are compartmentalized and calculated according to the following three categories; beginning reserve fund balance, interest accumulated upon the reserve fund contributions, and interest lost by the capital expenditures.

Interest earned on the yearly beginning reserve fund balance is calculated by compounding the beginning reserve fund balance on a monthly period by the interest rate. Interest earned for the reserve fund contributions are calculated by assuming that twelve equal installments are deposited, and interest is accrued and compounded monthly upon the accumulating balance. Likewise, the interest lost on the capital expenditures is calculated on the assumption that expenditures are deducted from the reserve balance on a monthly basis, and the interest that is lost is calculated upon the aggregate monthly balance. 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.

**4.4 Future Replacement Costs (Inflation):** In order to replicate actual financial conditions, 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. Typically, the rate used reflects **OMB's average annual Consumer Price Index (urban) for the period of 2005 through 2015.**

**4.5 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. Example: Funding for a re-roofing project, while, at the same time, funding for a second re-roofing project. This method often results in higher annual contribution

requirements and leads to generational equity issues. Mason & Mason employs this method only in special circumstances.

**4.6 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. 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. This method is the standard by which Mason & Mason calculates funding.

## 5.0 REPLACEMENT METHODS

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

**5.2 Cyclic Replacement:** Components are replaced in stages over a period of time. Example: Sidewalks are typically replaced in sections rather than as complete units.

**5.3 Minor Components:** A minimum component value should be established for inclusion in the reserve fund. Components of insignificant value in relation to the scale of the community should not be included and should be deferred to the maintenance budget. A small community might exclude components with aggregate values less than \$1,000, while a large community might exclude components with aggregate values of less than \$5,000.

**5.4 Long Life Components:** Almost all communities have some components with useful service lives typically ranging between thirty and sixty years. Traditionally, this type of component has been ignored completely or included at full replacement value far beyond the twenty-year study period. Example: Storm water drainage systems have a useful service life of approximately forty to sixty years. However, they typically require expensive repairs sometime during their service life. Mason & Mason programming addresses these issues by calculating partial funding over a period of time to provide for anticipated localized repairs.

**5.5 Projected Useful Service Life:** Useful service lives of components are established using construction industry standards as a guideline. Useful service lives can vary greatly due to initial quality and installation, inappropriate materials, maintenance practices, environment 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 replacements and for accumulating reserve funds.

## 6.0 UPDATING THE RESERVE FUND PLAN

In order for a reserve fund plan to remain a viable planning tool, it should be periodically updated. Changing financial conditions and widely varying aging patterns of components dictate that revisions should be undertaken every three 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 typically involve a site visit to observe current conditions, adjusting fund balances and contributions, and recalculating the financial tables. This updating process insures the integrity of the reserve fund plan and contributes to the financial health of the community. Mason & Mason encourages certain types of communities to perform Administrative Updates on complex properties that are undergoing several costly projects simultaneously. These updates include adjustments to the replacement schedules, annual contributions, balances, replacement costs, and interest income. The Administrative Update does not require a site visit and can be a cost-effective way of keeping the Reserve Fund Plan current between Full Update cycles. Updates are particularly important for those communities employing the Cash Flow Method because it maintains the twenty-year window. The Cash Flow Method does not consider expenditures beyond the study period. Those expenditures are brought into the study as it is periodically updated.

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**7.0 ASPHALT PAVEMENT SUPPLEMENTAL REPORT\***

<b>Street Name</b>	<b>Total SY Asphalt Pavement</b>	<b>SY Full- Depth Repairs (A)</b>	<b>Linear Footage Cracks (B)</b>	<b>Parking Spaces</b>	<b>Parking Bays</b>
Beacon Pond Lane	3,418	117	700	80	11
<b>TOTALS</b>	<b>3,418</b>	<b>117</b>	<b>700</b>	<b>80</b>	<b>11</b>

\* All quantities approximate (A) Quantity of deflected pavement that will require full-depth repairs near-term (B) Cracks that will require crack-filling maintenance near-term



Reserve Fund Plan for  
16. BEACON POND CLUSTER  
Burke, Virginia

COMPONENT DATA AND  
ASSET REPLACEMENT SCHEDULE  
TABLE 1  
2006 Through 2025

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	18
Component No.	Component	Quantity	Unit of Measurement	Unit Cost	Total Asset Base	Typical Service Life (Yrs)	1st Cycle Year	Percentage of Replacement	Cost F or 1st Cycle	2nd Cycle Year	Percentage of Replacement	Cost F or 2nd Cycle	3rd Cycle Year	Percentage of Replacement	Cost F or 3rd Cycle	DISCUSSION
<b>1. ASPHALT COMPONENTS</b>																
1.1	Asphalt Restoration Project	3,418	SY	\$8.00	\$27,344	18	2007	100%	\$28,317	2025	100%	\$53,119	2043	100%	\$99,645	The asphalt pavement throughout the cluster appears to be original and in generally fair to poor condition, reaching the end of its service life at approximately twenty two years of service. We observed wide-area cracking and deflection indicative of sub-base damage. The thickness of the pavement could not be visually determined. We understand that the pavement was originally installed in approximately 1984. The cost is based on edgemoiling and a 1-1/2" compacted overlay. A full useful service life is dependent on preventative maintenance being performed as scheduled in Items 1.2 and 1.3 below. See the Asphalt Pavement Supplemental Report, Section 7, for additional details.
1.2	Asphalt Seal Coat	3,418	SY	\$1.00	\$3,418	6	2013	100%	\$4,365	2019	100%	\$5,384	2031	100%	\$8,189	The pavement was recently seal coated. In order to help extend the useful service life of the new pavement and improve curb appeal after repairs are performed, we have scheduled seal coating projects every six years, except in the year of the pavement restoration project.
1.3	Asphalt Full-Depth Repair & Crack Fill Allowance	1	LS	\$7,000.00	\$7,000	6	2007	75%	\$5,437	2013	25%	\$2,235	2019	50%	\$5,513	Deflected pavement (approximately 117 square yards), indicative of sub-base damage, was observed in the cluster. Unfilled random longitudinal and transverse cracking (approximately 700 linear feet) were observed. Repairs are essential in order to achieve the projected remaining useful service life of the new pavement. Full depth repairs and crack filling are scheduled progressively approximately every six years throughout the study period, including the year of the asphalt restoration project. See the Asphalt Pavement Supplemental Report, Section 7, for additional details.
<b>2. CONCRETE COMPONENTS</b>																
2.1	Concrete Sidewalks	3,560	SF	\$8.00	\$28,480	5	2007	5%	\$1,475	2012	3%	\$1,054	2017	3%	\$1,255	Concrete sidewalks throughout the community are generally 4' wide. We measured approximately 890 linear feet of sidewalks. The thickness of the concrete could not be visually determined. Sidewalk condition ranges from new to fair. We observed approximately 160 square feet of deficient concrete sidewalks. Some sidewalk sections have settlement between sections causing tripping hazards. Some sidewalk sections are new. As sidewalks age, scaled surfaces, cracking, and settlement should be anticipated. Replacement of some of the more severely scaled sections should be addressed with each replacement cycle as they will tend to deteriorate more quickly over time. Cyclic repairs are scheduled as full replacement at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with other concrete components to promote cost efficiencies.
2.2	Concrete Curbs & Gutters	2,176	LF	\$30.00	\$65,280	5	2012	2%	\$1,610	2017	2%	\$1,918	2022	2%	\$2,284	The driveways and parking bays are lined with standard-profile, cast-in-place, concrete curbs. The curbs are generally in good condition with no deficiencies observed other than some minor settlement or heaving, which is not currently problematic. Many sections have been recently replaced. As curbs age, cracks, vehicle impact damage, and settlement should be anticipated. Cyclic repairs are scheduled as full replacement at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with other concrete components to promote cost efficiencies.
2.3	Concrete Driveway Aprons	588	SF	\$9.00	\$5,292	5	2017	20%	\$1,555	2022	20%	\$1,851	2027	20%	\$2,205	Access to driveways at the six single-family residences is provided by double or single concrete aprons, which are adjacent to sidewalk sections. The thickness of the concrete could not be visually determined. Most aprons appear to be in good condition with no major deterioration or cracking, but extensive surface scaling observed. Over time, scaling, cracking, and settlement should be anticipated. Cyclic repairs are scheduled as full replacement at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with other concrete components to promote cost efficiencies.
<b>3. SITE FEATURES</b>																
3.1	Storm Water Drainage System Allowance	1	LS	\$4,000.00	\$4,000	5	2012	100%	\$4,933	2017	100%	\$5,875	2022	100%	\$6,997	Storm water drainage is provided by curb drop inlets, and underground structures. All observable components appear to be in good condition. 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 and drainage issues.

## 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.

Reserve Fund Plan for  
**16. BEACON POND CLUSTER**  
 Burke, Virginia

**CALENDAR OF EXPENDITURES**  
**TABLE 2**  
 2006 Through 2025



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2006	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2006					2006 NO EXPENDITURES	
2007					2007 TOTAL EXPENDITURES	
	1.1	Asphalt Restoration Project	\$27,344	\$28,317		
	1.3	Asphalt Full-Depth Repair & Crack Fill Allowance	\$5,250	\$5,437		
	2.1	Concrete Sidewalks	\$1,424	\$1,475		
					\$35,228	
2008					2008 NO EXPENDITURES	
2009					2009 NO EXPENDITURES	
2010					2010 NO EXPENDITURES	
2011					2011 NO EXPENDITURES	
2012					2012 TOTAL EXPENDITURES	
	2.1	Concrete Sidewalks	\$854	\$1,054		
	2.2	Concrete Curbs & Gutters	\$1,306	\$1,610		
	3.1	Storm Water Drainage System Allowance	\$4,000	\$4,933		
					\$7,597	
2013					2013 TOTAL EXPENDITURES	
	1.2	Asphalt Seal Coat	\$3,418	\$4,365		
	1.3	Asphalt Full-Depth Repair & Crack Fill Allowance	\$1,750	\$2,235		
					\$6,600	
2014					2014 NO EXPENDITURES	
2015					2015 NO EXPENDITURES	
2016					2016 NO EXPENDITURES	
2017					2017 TOTAL EXPENDITURES	
	2.1	Concrete Sidewalks	\$854	\$1,255		
	2.2	Concrete Curbs & Gutters	\$1,306	\$1,918		
	2.3	Concrete Driveway Aprons	\$1,058	\$1,555		
	3.1	Storm Water Drainage System Allowance	\$4,000	\$5,875		
					\$10,602	
2018					2018 NO EXPENDITURES	
2019					2019 TOTAL EXPENDITURES	
	1.2	Asphalt Seal Coat	\$3,418	\$5,384		
	1.3	Asphalt Full-Depth Repair & Crack Fill Allowance	\$3,500	\$5,513		
					\$10,897	
2020					2020 NO EXPENDITURES	
2021					2021 NO EXPENDITURES	
2022					2022 TOTAL EXPENDITURES	
	2.1	Concrete Sidewalks	\$854	\$1,495		
	2.2	Concrete Curbs & Gutters	\$1,306	\$2,284		
	2.3	Concrete Driveway Aprons	\$1,058	\$1,851		
	3.1	Storm Water Drainage System Allowance	\$4,000	\$6,997		
					\$12,627	

Reserve Fund Plan for  
**16. BEACON POND CLUSTER**  
 Burke, Virginia

**CALENDAR OF EXPENDITURES**  
**TABLE 2**  
 2006 Through 2025



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2006	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2023					2023 NO EXPENDITURES	
2024					2024 NO EXPENDITURES	
2025					2025 NO EXPENDITURES	
	1.1	Asphalt Restoration Project	\$27,344	\$53,119	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repair & Crack Fill Allowance	\$7,000	\$13,598		
					\$66,717	

## 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  
**16. BEACON POND CLUSTER**  
 Burke, Virginia

**CURRENT FUNDING  
 ANALYSIS**  
**CASH FLOW METHOD**  
**TABLE 3**



**MASON & MASON**

Reston, Virginia

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Beginning Reserve Fund Balance: **\$40,594**      Annual Contribution To Reserves: **\$2,408**      Contribution Percentage Increase: **0.00%**  
 Annual Inflation Factor: **3.50%**      Annual Interest Income Factor: **4.00%**

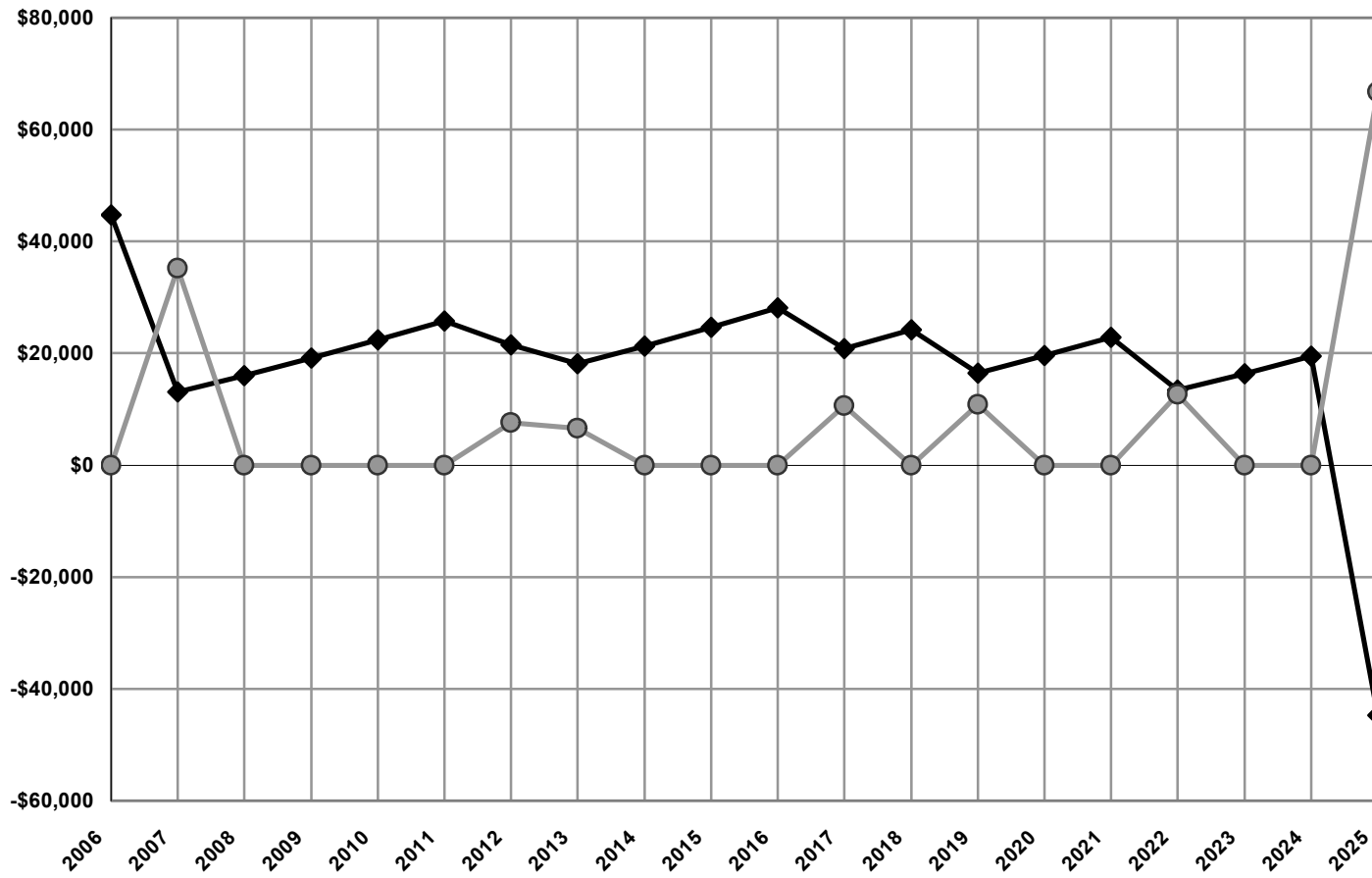
YEAR	TOTAL ASSET BASE	BEGINNING RESERVE FUND BALANCE	ANNUAL CONTRIBUTION	INTEREST INCOME	CAPITAL EXPENDITURES	ENDING RESERVE FUND BALANCE	BALANCE TO ASSET BASE RATIO
1	2	3	4	5	6	7	8
2006	\$140,814	\$40,594	\$2,408	\$1,759	\$0	\$44,761	32%
2007	\$145,742	\$44,761	\$2,408	\$1,109	\$35,228	\$13,050	9%
2008	\$150,843	\$13,050	\$2,408	\$584	\$0	\$16,043	11%
2009	\$156,123	\$16,043	\$2,408	\$706	\$0	\$19,157	12%
2010	\$161,587	\$19,157	\$2,408	\$833	\$0	\$22,398	14%
2011	\$167,243	\$22,398	\$2,408	\$965	\$0	\$25,772	15%
2012	\$173,096	\$25,772	\$2,408	\$937	\$7,597	\$21,520	12%
2013	\$179,155	\$21,520	\$2,408	\$786	\$6,600	\$18,113	10%
2014	\$185,425	\$18,113	\$2,408	\$791	\$0	\$21,312	11%
2015	\$191,915	\$21,312	\$2,408	\$921	\$0	\$24,641	13%
2016	\$198,632	\$24,641	\$2,408	\$1,057	\$0	\$28,106	14%
2017	\$205,584	\$28,106	\$2,408	\$967	\$10,602	\$20,878	10%
2018	\$212,780	\$20,878	\$2,408	\$903	\$0	\$24,189	11%
2019	\$220,227	\$24,189	\$2,408	\$801	\$10,897	\$16,502	7%
2020	\$227,935	\$16,502	\$2,408	\$725	\$0	\$19,635	9%
2021	\$235,913	\$19,635	\$2,408	\$853	\$0	\$22,895	10%
2022	\$244,170	\$22,895	\$2,408	\$710	\$12,627	\$13,387	5%
2023	\$252,715	\$13,387	\$2,408	\$598	\$0	\$16,393	6%
2024	\$261,560	\$16,393	\$2,408	\$721	\$0	\$19,522	7%
2025	\$270,715	\$19,522	\$2,408	\$0	\$66,717	-\$44,787	-17%

**STUDY PERIOD TOTALS**

**\$48,160      \$16,727      \$150,268**

**CURRENT FUNDING ANALYSIS**  
**CASH FLOW METHOD**  
**TABLE 3**

◆ **ENDING RESERVE FUND BALANCE**  
● **CAPITAL EXPENDITURES**



Reserve Fund Plan for  
**16. BEACON POND CLUSTER**  
 Burke, Virginia

**ALTERNATIVE FUNDING  
 ANALYSIS**  
**CASH FLOW METHOD**  
**TABLE 3.1**



**MASON & MASON**

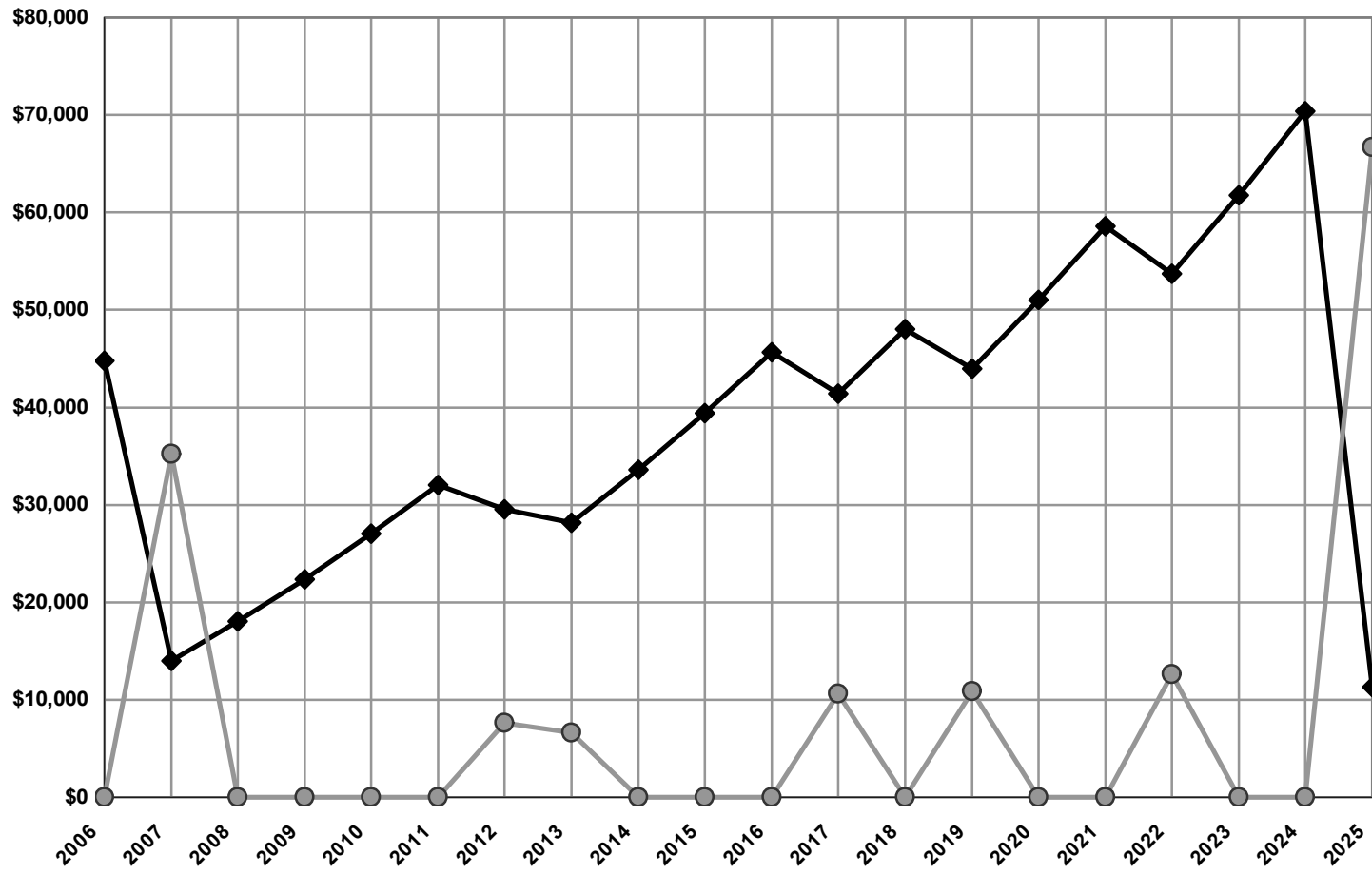
Reston, Virginia reserves@shentel.net 800-776-6980  
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Beginning Reserve Fund Balance: **\$40,594**      Annual Contribution To Reserves: **\$2,408**      Contribution Percentage Increase: **3.50%**      Annual Inflation Factor: **3.50%**      Annual Interest Income Factor: **4.00%**

YEAR	TOTAL ASSET BASE	BEGINNING RESERVE FUND BALANCE	ANNUAL CONTRIBUTION	INTEREST INCOME	CAPITAL EXPENDITURES	ENDING RESERVE FUND BALANCE	BALANCE TO ASSET BASE RATIO
1	2	3	4	5	6	7	8
2006	\$140,814	\$40,594	\$2,408	\$1,759	\$0	\$44,761	32%
2007	\$145,742	\$44,761	\$3,304	\$1,128	\$35,228	\$13,966	10%
2008	\$150,843	\$13,966	\$3,420	\$644	\$0	\$18,030	12%
2009	\$156,123	\$18,030	\$3,539	\$812	\$0	\$22,381	14%
2010	\$161,587	\$22,381	\$3,663	\$992	\$0	\$27,037	17%
2011	\$167,243	\$27,037	\$3,792	\$1,185	\$0	\$32,013	19%
2012	\$173,096	\$32,013	\$3,924	\$1,225	\$7,597	\$29,565	17%
2013	\$179,155	\$29,565	\$4,062	\$1,150	\$6,600	\$28,176	16%
2014	\$185,425	\$28,176	\$4,204	\$1,240	\$0	\$33,620	18%
2015	\$191,915	\$33,620	\$4,351	\$1,465	\$0	\$39,436	21%
2016	\$198,632	\$39,436	\$4,503	\$1,705	\$0	\$45,645	23%
2017	\$205,584	\$45,645	\$4,661	\$1,731	\$10,602	\$41,434	20%
2018	\$212,780	\$41,434	\$4,824	\$1,794	\$0	\$48,052	23%
2019	\$220,227	\$48,052	\$4,993	\$1,830	\$10,897	\$43,978	20%
2020	\$227,935	\$43,978	\$5,168	\$1,905	\$0	\$51,050	22%
2021	\$235,913	\$51,050	\$5,348	\$2,197	\$0	\$58,596	25%
2022	\$244,170	\$58,596	\$5,536	\$2,233	\$12,627	\$53,738	22%
2023	\$252,715	\$53,738	\$5,729	\$2,315	\$0	\$61,783	24%
2024	\$261,560	\$61,783	\$5,930	\$2,647	\$0	\$70,360	27%
2025	\$270,715	\$70,360	\$6,137	\$1,547	\$66,717	\$11,327	4%
<b>STUDY PERIOD TOTALS</b>			<b>\$89,496</b>	<b>\$31,505</b>	<b>\$150,268</b>		

ALTERNATIVE FUNDING ANALYSIS  
CASH FLOW METHOD  
TABLE 3.1

◆ ENDING RESERVE FUND BALANCE  
● CAPITAL EXPENDITURES



## 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       | <b>Component Number</b> is consistent throughout the tables.  |
| Column 2       | <b>Component</b> is a brief description of the component.   |
| Columns 3 - 22 | <b>Years</b> 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  
16. BEACON POND CLUSTER  
Burke, Virginia

FUNDING ANALYSIS  
COMPONENT METHOD  
TABLE 4



MASON & MASON

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Beginning Reserve Fund Balance:  
\$40,594

Component Number	COMPONENT	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
1.1	Asphalt Restoration Project	\$604	\$604	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013	\$2,013
1.2	Asphalt Seal Coat	\$62	\$62	\$62	\$62	\$62	\$62	\$62	\$62	\$793	\$793	\$793	\$793	\$793	\$793	\$531	\$531	\$531	\$531	\$531
1.3	Asphalt Full-Depth Repair & Crack Fill Allow	\$15	\$15	\$329	\$329	\$329	\$329	\$329	\$329	\$812	\$812	\$812	\$812	\$812	\$812	\$2,002	\$2,002	\$2,002	\$2,002	\$2,002
2.1	Concrete Sidewalks	\$95	\$95	\$190	\$190	\$190	\$190	\$190	\$226	\$226	\$226	\$226	\$226	\$270	\$270	\$270	\$270	\$270	\$321	\$321
2.2	Concrete Curbs & Gutters	\$27	\$27	\$27	\$27	\$27	\$27	\$27	\$346	\$346	\$346	\$346	\$346	\$412	\$412	\$412	\$412	\$412	\$412	\$491
2.3	Concrete Driveway Aprons	\$14	\$14	\$14	\$14	\$14	\$14	\$14	\$14	\$14	\$14	\$14	\$14	\$334	\$334	\$334	\$334	\$334	\$398	\$398
3.1	Storm Water Drainage System Allowance	\$82	\$82	\$82	\$82	\$82	\$82	\$82	\$1,060	\$1,060	\$1,060	\$1,060	\$1,060	\$1,262	\$1,262	\$1,262	\$1,262	\$1,262	\$1,503	\$1,503
ANNUAL COMPONENT CONTRIBUTION TOTALS		\$899	\$899	\$2,717	\$2,717	\$2,717	\$2,717	\$2,717	\$4,050	\$5,263	\$5,263	\$5,263	\$5,263	\$5,895	\$5,895	\$6,824	\$6,824	\$6,824	\$7,259	\$7,259

COMPONENT METHOD SUMMARY	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
BEGINNING RESERVE FUND BALANCE	\$40,594	\$43,167	\$9,849	\$13,027	\$16,335	\$19,777	\$23,360	\$19,326	\$17,509	\$23,601	\$29,941	\$36,540	\$32,574	\$39,926	\$36,443	\$44,902	\$53,705	\$49,965	\$59,419
PLUS ANNUAL COMPONENT CONTRIBUTION	\$899	\$899	\$2,717	\$2,717	\$2,717	\$2,717	\$2,717	\$4,050	\$5,263	\$5,263	\$5,263	\$5,263	\$5,895	\$5,895	\$6,824	\$6,824	\$6,824	\$7,259	\$7,259
CAPITAL EXPENDITURES	\$0	\$35,228	\$0	\$0	\$0	\$0	\$7,597	\$6,600	\$0	\$0	\$0	\$10,602	\$0	\$10,897	\$0	\$0	\$12,627	\$0	\$0
SUBTOTAL	\$41,493	\$8,838	\$12,566	\$15,745	\$19,052	\$22,495	\$18,481	\$16,776	\$22,772	\$28,864	\$35,205	\$31,201	\$38,470	\$34,925	\$43,267	\$51,726	\$47,903	\$57,224	\$66,679
PLUS INTEREST INCOME @ 4.00%	\$1,674	\$1,010	\$461	\$590	\$725	\$865	\$846	\$732	\$829	\$1,077	\$1,335	\$1,373	\$1,456	\$1,518	\$1,634	\$1,979	\$2,062	\$2,195	\$2,580
ENDING RESERVE FUND BALANCE	\$43,167	\$9,849	\$13,027	\$16,335	\$19,777	\$23,360	\$19,326	\$17,509	\$23,601	\$29,941	\$36,540	\$32,574	\$39,926	\$36,443	\$44,902	\$53,705	\$49,965	\$59,419	\$69,259

STUDY PERIOD TOTAL CONTRIBUTIONS	\$94,531
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STUDY PERIOD INTEREST TOTAL	\$26,470
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AVERAGE ANNUAL CONTRIBUTION	\$4,727
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TOTAL EXPENDITURES	
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<b>2025</b>
\$2,013
\$531
\$2,002
\$321
\$491
\$398
\$1,503
\$7,259

<b>2025</b>
\$69,259
\$7,259
\$66,717
\$9,801
\$1,527
\$11,327

\$150,268

**FUNDING ANALYSIS  
COMPONENT METHOD  
TABLE 4**

◆ ENDING RESERVE FUND BALANCE  
○ CAPITAL EXPENDITURES

