



MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.



(Final Report, Revised November 9, 2016)

Condition Assessment & Reserve Fund Plan Update 2016

Hiddenbrook HOA

Herndon, Virginia



Prepared for:
The Board of Directors
&
Spectrum Property Management



MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.



P. O. Box 1 Fort Valley, Virginia 22652 800-776-6980 admin@masonreserves.com Fax 800-776-6408

November 9, 2016

Ms. Lisa Cornaire, General Manager
Spectrum Property Management
Hiddenbrook HOA
P. O. Box 582
Herndon, Virginia 20172

RE: **CONDITION ASSESSMENT AND RESERVE FUND PLAN UPDATE 2016**
Hiddenbrook HOA
(Final Report, Revised November 7, 2016)
Herndon, Virginia
Project No. 8080

Dear Ms. Cornaire:

Mason & Mason Capital Reserve Analysts, Inc. has completed the final report for Hiddenbrook.

The final report reflects changes, directed in our phone conversation and an email on November 2, 2016.

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

Sincerely,

Mason & Mason Capital Reserve Analysts, Inc.

Levi K. Mason, 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 Hiddenbrook HOA'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 approximately fully funded (93%) through 2015. **See Paragraph 3.1. Our goal is to become fully funded by the end of the 20-year period (2035).**

In order to achieve this goal, the Association should:

- **Establish a single year Increase (Table 3.1) of the annual contributions in 2017 from \$38,530 to \$66,700, and plan on annual increases of 2.5% to reflect inflation thereafter.**
- **This represents an increase from \$8.17 to \$14.14 (a net increase of \$5.97) per residential unit, per month (based on 393 units).**

OR

- **Establish a multiple year stepped increase (Table 3.2) of the annual contributions beginning in 2017 by \$16,000 for each of two years, followed by annual adjustments of 2.24 % to reflect inflation thereafter.**
- **This represents a 2017 increase from \$8.17 to \$11.56 (a net increase of \$3.39) per residential unit, per month (based on 393 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 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 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: Hiddenbrook HOA is a single-family home community of 393 residences located west of Dranesville Road in Herndon, Virginia. Hiddenbrook Community Center, located at 1508A Sadlers Wells Drive, consists of single two-story masonry and wood frame community building and bathhouse, two pools, a tot lot, and two tennis courts. The facility was completed in 1974 and provides a management office for Hiddenbrook Homeowners Association. The pool, bathhouse, and tennis courts, while owned by the Association, are the shared financial responsibility of Hiddenbrook Swim & Tennis Club and the Hiddenbrook HOA. The paved entrance and driveways include concrete curbs and gutters, concrete sidewalks, and four off street parking bays providing 91 spaces.

We are providing the Condition Assessment and Reserve Fund Plan based on Proposal Acceptance Agreement No. 8080 dated August 05, 2016. 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 Homeowners 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 Hiddenbrook in 2002, a Level II Update in 2007, and an Administrative Update in 2011. 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 Rachel L. McGranahan R.S.I.T. conducted the field evaluation for this report on September 20, 2016. The weather was clear and the temperature was approximately 82 degrees F. Precipitation had occurred the day prior to the site visit. The pavements, walkways, and grounds were generally dry and clean of debris.

1.2 Principal Findings: The common assets appear to be in overall very good condition. However, we understand that the focus of this generation of reserve study is to focus on the exterior and interior components of the community building and bathhouse. The exterior components, though serviceable are in generally dated condition. At Management's request, we have scheduled the replacement of the asphalt shingle roofing, a partial siding and trim replacement project, and the remaining wood decks will be replaced with composite materials. Interior renovations include the refurbishment of the shower/bathrooms and a partial expenditure to update the associated plumbing fixtures. We understand that the Board is exploring options for these restorations, but that no specific materials or plans, and therefore, costs have been decided upon. We have used general cost projections in this report, which should be updated with actual costs, when more information is available.

There is a significant quantity of differentially settled and/or heaved concrete sidewalks, relative to adjacent panels and curbs, which are potential tripping hazards. 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. At Management's request, we have scheduled the concrete work to be performed in 2016 and the values reflected in the report were provided by Management based upon competitive bids recently received for these projects. We have also scheduled an asphalt repair project to address the single area of deflection observed in the parking lot. It is our opinion that some savings may be realized if a single contractor is used to conduct both asphalt and concrete repairs simultaneously.

It is our understanding that the goal of this, and previous Boards has been to strive to achieve improved funding of the reserves. The funding of the reserves at the outset of the former reserve study (in 2011) was at approximately 73%. The funding at the end of 2015 study period was approximately fully funded at 93%. We commend this Board and previous Boards for their efforts in improved funding of the reserves. We have established two alternative funding scenarios (see tables 3.1 & 3.2). If followed, these plans will help to ensure continued progress toward the goal of adequate reserve funding.

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

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

2. FINANCIAL ANALYSIS

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

2.1 Calculation Basics: The Association is on a calendar fiscal year. Management reported that the un-audited reserve fund balance, including cash and securities, as of **December 31, 2015**, was **\$448,240**. We have used a **1.00%** annual interest income factor and a **2.50%** inflation factor in our calculations. The total expenditures for the twenty-year period for both the **Cash Flow Method** and **Component Method** are projected to be **\$1,408,709**.

2.2 Current Funding Analysis, Cash Flow Method (Table 3): The 2016 annual contribution to reserves has been set at **\$38,530** with a presumed **2.5% annual increase**. At this level, the total for all annual contributions for the twenty-year period would be **\$984,236**, and the total interest income is projected to be **\$58,817**. **This funding results in unrealistically low balances throughout the twenty-year period and never achieves the fully-funded goal.**

2.3 Alternative Funding Analysis, Cash Flow Method, Hybrid Approach (Table 3.1): This plan provides the annual contributions necessary to maintain balances more consistent with the **fully funded goal** by increasing the annual contribution to **\$66,700** in 2017 and providing an annual escalation factor of **2.50%**, matching inflation thereafter. This plan allows for a gradual increase over time after the initial increase, and addresses generational equity issues. The total for all annual contributions for the twenty-year period would be **\$1,635,729**, and the total interest income is projected to be **\$119,808**. **The fully funded balance in 2035 is \$795,068.**

2.4 Alternative Funding Analysis, Cash Flow Method (Table 3.2): This stepped plan provides the annual contributions necessary to maintain balances more consistent with the **fully funded goal** by increasing the annual contribution to **\$54,530** in 2017, **\$70,530** in 2018, and then providing an annual escalation factor of **2.24%** 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 **\$1,635,969**, and the total interest income is projected to be **\$119,568**. **The fully funded balance in 2035 is \$795,068.**

2.5 Funding Analysis, Component Method (Table 4): This method of funding would require variable annual contributions, averaging **\$81,267** over the twenty-year period. The total for all annual contributions would be **\$1,625,330**, and the total interest income is projected to be **\$130,207**. **The fully funded balance in 2035 is \$795,068.** 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 edgemoil 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 asphalt 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 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.

6.6 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.

6.7 Concrete Pool Deck: Cast-in-place concrete, slab-on-grade pool deck sections, which have large cracks, should be removed and replaced periodically to prevent water infiltration behind the pool structure. Minor cracks can be routed and sealed to extend the service life of the deck. In some instances, a breathable cementitious coating can be applied to improve the surface appearance and extend the surface life.

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 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.

6.11 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.

6.12 Brick Component Tuckpointing & Repair: Brick components should be inspected periodically for step cracks in the mortar and shear cracks through the brick and mortar, indicating settlement problems. Signs of efflorescence on the brick face and mortar or spalling brick faces indicate water infiltration and should be investigated. Water infiltration problems are usually initiated at the top of an improperly sealed coping. Eliminating the infiltration of water into the structure from the coping can be accomplished by various methods, depending on the brick detail. Installation of a metal coping is sometimes a cost-effective method of solving these problems and extending the life of the component. Sealing of brick surfaces with breathable coatings will also extend the useful service life of the brick. All vegetation, such as vines or tree limbs should be kept clear of the brick to prevent damage. As brick components age, depending upon the initial quality of the mortar and the long-term environment of the wall, mortar joints may deteriorate. This condition can be corrected by tuckpointing. Applying soft sealants to the deteriorated joints or to cover up mortar joint cracks is not recommended. Deteriorated or cracked mortar joints should be repaired by cutting damaged material $\frac{3}{4}$ -inch deep with a diamond blade masonry saw. The void should then be filled with new mortar and the joints struck to match the original work.

6.13 Wood Fence: 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.

6.14 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.

6.15 Tennis Court Restoration: Court surface overlays are usually required when settlement of the sub-base causes cracks to appear at the surface. Direct overlays usually allow any cracks to migrate (reflective cracking) to the new surface. A technique to eliminate this problem is to separate the old surface from the new surface with a layer of fine marble dust. This allows the two surfaces to move independently and results in a more stable top surface. Since net tension is the most common cause of court damage, homeowners should be advised that tension on the nets should be released when not in use, and nets should not be over-tensioned when in use. Net post footings can be repaired or replaced without overlaying the court. In this region, tennis courts usually give about fifteen to twenty years of service before a restoration is necessary. Some courts fail much sooner and some last much longer depending upon initial construction and site preparation. Cut and fill sites are much more prone to settlement issues. It is prudent to plan for overlay now because of the large expense involved if required. Good maintenance practices, including frequent sweeping, periodic color coating of the surface, and proper tensioning of the net cable can extend the service life of tennis courts.

6.16 Tennis Court Color Coat: Color coating extends the life of the surface if cracking and other surface problems are not present. An average five-year life for color coating is scheduled, except within a year or two of scheduled surface overlay. Any cracking around net post footings should be sealed to prevent moisture infiltration.

6.17 Chain Link Fencing: Very little maintenance is necessary for chain link fencing and gates. Periodic removal of encroaching vegetation should be performed to prevent damage to components. Damaged components should be repaired or replaced. Rusted fencing components may be painted to improve appearance.

6.18 Pool Structure: The swimming pools are in-ground, cast-in-place concrete structures. Most outdoor pools of this type, in this area, require a major renovation between twenty and forty years of age. The service life is dependent upon initial construction and site preparation. Pools built on a cut and fill site are more prone to have settlement issues. It is prudent to plan for structural renovation now because of the large expense involved if required. Core samples should be taken periodically, as the pool ages, to determine the condition of the gunnite and concrete. Water infiltration will weaken the concrete and early detection can prevent higher repair costs.

6.19 Pool White Coat: Pool white coating seals the pool surface and helps prevent water infiltration into the structure of the pool. White coat generally has a service life of 6 to 10 years. Prior to white coating, the old surface must be cleaned and sandblasted or acidized to prepare the surface to accept the new white coat. Surfaces adjacent to all fittings, lap lane tiles, waterline tiles, and lights must be prepared by chipping the surface so that the new plaster feathers in around the edges. Any damaged tiles or coping or loose or hollow plaster in the pool shell should be removed and repaired prior to white coating. Sometimes a bond coat will be applied to increase adhesion. White coating should be done on a dry day when temperatures will remain above freezing. The pool should be refilled immediately, the filter system started, and the surface brushed frequently for several days to prevent residue buildup, which creates a rough surface. Eggshell cracking is part of the curing process of white coat and is not indicative of problems. Pool covers help extend the life of the white coat by preventing seasonal damage and discoloration, which may require acid treatments to maintain appearance.

6.20 Pool Coping: The coping around the pool perimeter is standard commercial bullnose cast stone, bedded and grouted to the pool structure. In order to extend the useful life of the pool structure and adjacent pool deck, it is important to keep the coping sections watertight. This will prevent water from infiltrating beneath the pool structure, which, if not controlled may cause damage during freeze/thaw cycles. Sealant should be applied between the pool coping and the pool deck. Deteriorated or separated sealant should be removed completely before new sealant is applied. Any loose, cracked, or "hollow" copings should be re-bedded or replaced annually as part of the long-term preventative maintenance required for pools. Deteriorated or cracked mortar between coping tiles or below the coping tiles at the pool structure should be diligently repaired.

6.21 Pool Sealant: The joint between coping tiles and pool deck should be sealed with a flexible sealant to prevent water infiltration behind the pool structure. Over time, this sealant deteriorates and water infiltration can cause damage to the pool structure during freeze/thaw cycles. Sealant should periodically be removed and replaced to prevent damage, and annual inspections and repairs should be performed between replacements. Sealant should be applied when coping stones are replaced or re-bedded. Other signs of problems include loose or missing mortar between the coping stones and between the coping stones and the pool structure below.

6.22 Pool Covers: Pool covers help extend the life of the white coat by preventing seasonal damage and discoloration, which may require acid treatments to maintain appearance.

6.23 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: <div style="display: inline-block; vertical-align: top; margin-left: 20px;"> SY = Square Yards SF = Square Feet LF = Linear Feet EA = Each LS = Lump Sum PR = Pair CY = Cubic Yards </div>
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
HIDDENBROOK HOA
Herndon, Virginia

COMPONENT DATA AND
ASSET REPLACEMENT SCHEDULE
TABLE 1
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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	4,160	SY	\$12.50	\$52,000	18	2025	100%	\$64,941	2043	100%	\$101,286				The asphalt pavement serving the community center was overlay restored in 2007 by Espina Paving, Inc., and appears to be conforming to typical aging patterns. A full service life of the pavement is dependent on preventative maintenance being performed. Restoration includes edgemilling and overlay with 1-½" 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	4,160	SY	\$1.20	\$4,992	6	2020	100%	\$5,510	2031	100%	\$7,230	2037	100%	\$8,384	The pavement was seal coated in 2016. 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 generally 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.
1.3	Asphalt Full-Depth Repair & Crack Filling Allowance	1	LS	\$8,700.00	\$8,700	6	2017	50%	\$4,459	2020	25%	\$2,401	2025	100%	\$10,865	We observed a significant amount of filled cracking (about 3,800 l.f.) and one large area (approximately 105 s.y.) of deflected asphalt, indicative of sub-base failure. We have scheduled the repair of this deflected area near-term to help insure a full service life of the asphalt is achieved. Repairs will be essential in order to achieve the projected remaining service life of the new pavement. Full-depth repairs and crack filling are scheduled every six years throughout the study period, including the year of the asphalt restoration projects.
2 CONCRETE COMPONENTS																
2.1	Concrete Sidewalks	4,732	SF	\$9.50	\$44,954	5	2016	9.70%	\$4,361	2022	3%	\$1,564	2027	3%	\$1,770	Concrete sidewalks throughout the community center site are generally 4' wide with a few larger sections of concrete. Sidewalk condition is generally good with no significantly cracked sections. However, we observed a moderate number of settled and/or heaved sections observed. 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. At Management's request, we have scheduled the concrete work to be performed in 2016. Management provided the budget for the project. Concrete repairs are scheduled to coincide with work on other concrete components to take advantage of economies of scale in packaging concrete restoration work. The Board should be aware that repairs to small quantities of concrete may be more costly because of the difficulty of attracting competitive bids for small projects, which may not meet contractor minimums. Any trip hazards or hazardous surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2.2	Concrete Curbs & Gutters	2,052	LF	\$36.00	\$73,872	5	2016	4.30%	\$3,176	2022	2%	\$1,713	2027	2%	\$1,939	The driveways and some parking bays are lined with standard-profile, cast-in-place, concrete curbs. We observed approximately 102 linear feet of curb, which is differentially higher than the adjacent concrete sidewalk and may be a hazard to pedestrians. We have scheduled a remediation project near-term. 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. Precision concrete cutting may be a cost effective alternative to the replacement of the curb and gutter or adjacent sidewalk panels. Casting a topping slab on to of the sidewalk is not a good alternative to addressing the height differential.
2.3	Concrete Steps	62	LF	\$100.00	\$6,200	10	2017	58%	\$3,686	2027	41%	\$3,335	2037	59%	\$6,144	Cast-in-place concrete steps are constructed at the front and rear entrances to the building and at grade differentials. The front steps have minor settlement and deterioration. We have scheduled their replacement at the request of the Board near-term. Concrete repairs are scheduled to coincide with other concrete components to promote cost efficiencies.
2.4	Concrete Pool Deck	9,338	SF	\$10.50	\$98,049	5	2017	5%	\$5,025	2022	5%	\$5,685	2027	5%	\$6,432	The pool deck is cast-in-place concrete on grade and is generally in good condition. Some minor cracking in the deck surface were observed. These cracks and any additional cracks should be routed and sealed to prevent water infiltration into the deck. Additionally, we observed some stress cracking along the eastern side of the deck. This cracking may be the result of deflection of the small retaining wall that contains the fill upon which the pool deck is constructed. This does not appear to be a severe problem at this time, however, the cracking should be monitored. Cyclic repairs are scheduled as full replacement of the entire deck at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with other concrete components to promote cost efficiencies. Any settlement or surface-defect trip hazards should be repaired as soon as observed to prevent personal injury.
3 SITE FEATURES																
3.1	Entrance Signs	1	LS	\$8,200.00	\$8,200	20	2017	60%	\$5,043	2022	40%	\$3,804	2037	60%	\$8,264	A painted wood message board with acrylic lens and a painted, carved wood name sign is constructed at the entrance to the community center parking lot. We understand hydraulic struts may be added so the acrylic lens will open and close with ease. The Board may opt for an entirely different style of sign, which was briefly discussed during the meeting. Management and the Board have requested approximately \$5,000 dollars to replace or improve the sign near-term. Another carved wood sign is installed on 6" by 6" painted posts at the front of the building. It appears to be in continuing good condition. The projected service life will be dependent on periodic preventative maintenance being performed such as re-painting.
3.2	Storage Shed	1	EA	\$2,000.00	\$2,000	15	2027	100%	\$2,624	2042	100%	\$3,801				Management reported the painted T1-11 plywood utility shed with composite shingle roofing was purchased from Lowe's in 2012. This shed is the responsibility of the HOA. The second shed belongs to the Swim & Tennis Club and has been removed from this study.
3.3	Wood Retaining Walls	1	LS	\$4,000.00	\$4,000	20	2036	100%	\$6,554							Small pressure-treated wood timber retaining walls are constructed at the grade differentials adjacent to the community center building, which provide planter boxes for landscaping. They were replaced in 2016. Management provided the cost of the project, which was used as a benchmark in this report.
3.4	Perimeter Wood Fencing	1,110	LF	\$14.84	\$16,472	20	2031	29%	\$6,919	2034	71%	\$18,241	2051	100%	\$39,092	6'-high, pressure-treated wood fencing is constructed at the east, west, and portions of the south perimeter of the facility. The fencing appears to be in overall good condition. Management reported 322 linear feet was installed in 2011, and approximately 788 linear feet was replaced in 2014. Although the fencing is different ages we have scheduled it's full replacement in 2051 to take advantage of economies of scale. Throughout the life of the fencing, any deteriorated or missing boards should be replaced to achieve a full service life.

Reserve Fund Plan for
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COMPONENT DATA AND
ASSET REPLACEMENT SCHEDULE
TABLE 1
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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
3.5	Tot Lot & Outdoor Furniture Allowance	1	LS	\$35,000.00	\$35,000	15	2018	100%	\$36,772	2033	100%	\$53,257	2048	100%	\$77,131	The tot lot is equipped with pressure-treated wood borders, a painted metal post swing set, two spring toys, two vinyl coated metal benches, one vinyl coated picnic table, one wood and metal picnic table, two new pet waste stations, and a painted metal, square tubular metal post play module with vinyl coated metal steps and platforms, painted metal climbing equipment and rails, plastic slides and a plastic gazebo roof. The equipment appears to be in serviceable condition. However, Management requested a near-term expenditure to replace the equipment. We understand the scope of the project has not been determined. We understand it may include new play modules and the leveling of the surface under the picnic tables. 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	Tot Lot Mulch	1	LS	\$3,000.00	\$3,000	2	2017	100%	\$3,075	2019	100%	\$3,231	2021	100%	\$3,394	Management requested an increase in the budget to purchase better quality mulch near-term.
3.7	Tennis Court Restoration Project	1	LS	\$28,750.00	\$28,750	20	2021	100%	\$32,528	2041	100%	\$53,301				The tennis courts were restored in 2001. Since net post damage is the most common type of problem, homeowners should be advised that tension on the nets should be released when not in use, and nets should not be over-tensioned when in use. The full service life of the tennis courts is dependent on preventative maintenance being performed as outlined in the Preventive Maintenance section of the report.
3.8	Tennis Court Color Coat	2	EA	\$8,500.00	\$17,000	5	2017	10.71%	\$1,866	2026	100%	\$21,761	2032	100%	\$25,237	The tennis courts were crack repaired and color coated in 2011. However, we observed additional cracking which, without intervention, may be more costly in the future. We have scheduled a partial expenditure near-term which was provided by Management. The Board reported that the court appears to be settling at the southeast corner, and we have scheduled an expenditure in the Storm Water Drainage Allowance 3.12 below. This may be used to investigate erosion or possibly the construction of a retaining wall. Tennis court color coat helps to seal the court surface and may help to prevent water infiltration. It generally has a service life of approximately five years.
3.9	Tennis Court Benches	4	EA	\$600.00	\$2,400	10	2021	100%	\$2,715	2031	100%	\$3,476	2041	100%	\$4,449	Management reported that two new benches were installed at the tennis courts. We have included the timber benches that are now adjacent to the court in this component for a total of two plastic and two wooden.
3.10	Tennis Court Fencing	660	LF	\$24.00	\$15,840	30	2021	100%	\$17,922	2051	100%	\$37,592				Ten-foot-high, vinyl-coated chain link fencing is installed around the perimeter of the tennis courts, which is scheduled to be replaced coinciding with the full court restoration project.
3.11	Tree Trimming, Removal, & Replacement Allowance	1	LS	\$4,000.00	\$4,000	3	2019	100%	\$4,308	2022	100%	\$4,639	2025	100%	\$4,995	Due to the age of the property, the site has many mature trees. In later years, trees require trimming to prevent damage to adjacent structures and components. Also, occasionally trees must be removed due to damage, disease, or if they outsize their location. Management established a budget amount to address tree removal, trimming, or replacement periodically throughout the study period.
3.12	Storm Water Drainage System Allowance	1	LS	\$7,500.00	\$7,500	7	2017	50%	\$3,844	2024	100%	\$9,138	2031	100%	\$10,862	Storm water drainage is provided by concrete curb drop inlets and underground structures. 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.
4 COMMUNITY CENTER BUILDING																
4.1	Re-Roofing Projects	2,970	SF	\$5.75	\$17,078	20	2017	100%	\$17,504	2037	100%	\$28,683				The 6/12 pitched roof has architectural grade composite shingles. Ventilation is achieved through soffit vents and gable vents. The roof is a second cycle replacement accomplished in the early 1990s and has been scheduled for replacement near-term. Pre-finished aluminum gutters and downspouts are installed at all proper roof terminations. Downspouts are directed away from building foundations with flex tubing. Re-roofing projects include replacement of shingles, deteriorated sheathing, flashing and gutters and downspouts.
4.2	Wood Siding & Trim	1,908	SF	\$10.65	\$20,320	40	2017	50%	\$10,414	2027	25%	\$6,665	2037	100%	\$34,129	Original clapboard wood siding provides the main building envelope. The basement walls are masonry. The siding has been painted. Painted wood trim occurs at windows, doors, soffits and rake boards. The wooden components appear to be in generally good condition with a moderate amount of deterioration observed. The paint is in poor condition. We have scheduled the replacement of any deteriorated wood to coincide with other exterior replacement and painting projects near-term.
4.3	Glass French Doors	6	EA	\$4,779.00	\$28,674	25	2038	100%	\$49,364							Management reported that the six original sliding-glass doors were replaced with high-end French doors in 2013. Management provided the cost for the project. We have scheduled the replacement of the doors after a typical statistical service life.
4.4	Door Allowance	23	EA	\$675.00	\$15,525	40	2017	3%	\$477	2022	20%	\$3,601	2027	20%	\$4,074	This category includes all exterior and interior doors of the community center building. All six lower level exterior doors were replaced with fiberglass doors. We have budgeted an allowance to address replacement of damaged or deteriorated doors throughout the study period. At Management's request we have scheduled the replacement of two doors near-term.
4.5	Split-System Heat Pump	1	LS	\$13,380.00	\$13,380	15	2030	100%	\$18,906	2045	100%	\$27,381				A Lennox fourth cycle replacement, split-system heat pump installed in 2015 provides heating and cooling for the community center building. The replacement Lennox air handler is located on the ground floor level and is a Model CBX32-060-230-6-06. The condensing unit is a Lennox Model 14HPX-060-230-19 located adjacent to the main entrance. The refrigerant lines do not appear to have been replaced.
4.6	Wood Decks & Railings	1	LS	\$33,000.00	\$33,000	20	2017	50%	\$16,913	2034	25%	\$12,867	2039	75%	\$43,674	There are four wood decks totaling 730 square feet with 28 steps and 213 linear feet of railings. The deck on the rear elevation has Trex decking, and railings. The remaining decks are pressure-treated timber and the railing caps have been replaced with Trex. We have scheduled the replacement of the remaining wood decking and railings with Trex to coincide with other exterior restoration projects near-term. The final cost of the project should be integrated into this report.

Reserve Fund Plan for HIDDENBROOK HOA Herndon, Virginia

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TABLE 1
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Component No.	Component	Quantity	Unit of Measurement	Unit Cost	Total Asset Base	Typical Service on 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
4.7	Kitchen Refurbishment Project	1	LS	\$10,000.00	\$10,000	35	2045	100%	\$20,464							This category includes the wall-mounted and base-mounted millwork, a refrigerator, a range and hood, a dishwasher and a stainless steel sink. We understand that the kitchen was updated in 2012 for a cost of \$8,550 but the appliances were not replaced as they are only lightly used and in good condition.
4.8	Office Equipment & Furnishings Allowance	1	LS	\$6,000.00	\$6,000	10	2019	50%	\$3,231	2024	50%	\$3,655	2029	50%	\$4,136	This category includes the computers in the management office and lifeguard office, the desk, files, fax machine, stacking chairs, and folding tables of the community room. At Management's request we have reduced the budget.
4.9	Building Lighting & Electrical Allowance	1	LS	\$34,000.00	\$34,000	35	2022	75%	\$29,572	2027	25%	\$11,153	2032	25%	\$12,618	This category includes the wall-mounted fixtures, ceiling-mounted and recessed incandescent and fluorescent fixtures, exit lights, emergency lights, exhaust fan, a hanging globe light, ceiling fans, and wall heaters of the upper level of the clubhouse; the exterior carriage fixtures and porch lights, and security lighting of the building exterior; and the site light poles and fixtures. We have increased the budget to include the additional square tubular light pole with three security fixtures and four new building-mounted metal halide fixtures. Most lighting appears to be in good condition. While this line item is scheduled as a single expenditure, it is likely that individual units will be replaced on an as needed basis. Replacement timing and cost is generally discretionary.
4.10	Carpeting	155	SY	\$26.77	\$4,149	10	2017	100%	\$4,253	2027	100%	\$5,444	2037	100%	\$6,969	The carpet of the meeting room is a commercial-grade, direct-glue, which was installed in 2006. The cost is based on the actual replacement project. Replacement cost and timing is generally discretionary. We understand that the board may replace the carpet with an alternative material.
4.11	Resilient Vinyl Tile	923	SF	\$5.75	\$5,307	25	2026	80%	\$5,435	2034	20%	\$1,655	2044	80%	\$8,477	The flooring of the entrance, restroom, and kitchen is vinyl floor tiles. The tiles appear to be in serviceable condition with no significant deterioration observed.
4.12	Shower Room Finishes	1	LS	\$20,000.00	\$20,000	20	2017	100%	\$20,500	2037	100%	\$33,592	2057	100%	\$55,044	The finishes of the showers/restrooms are generally outdated and very poor. Management reported that a major renovation has been planned for 2017, but that no specific plan or budget has been developed. We have used a placeholder figure of \$20,000 for budgeting purposes. This figure should be updated when more information is available. This line item includes the tile in the lower level hallways. We understand that the tile was replaced in 2014.
4.13	Surveillance & Security Systems Allowance	1	LS	\$3,000.00	\$3,000	5	2019	100%	\$3,231	2024	100%	\$3,655	2029	100%	\$4,136	We understand that major upgrades to the surveillance system have been conducted over past years. The current system has an asset value of approximately \$12,816. Management requested an allowance to address periodic system replacements now that the system has been fully upgraded. This category may also be used for the installation/replacement of interior/exterior security lighting, area lighting, door locks, alarm system, automated security system, or other components related to surveillance/security related needs.
5 POOL FACILITY																
5.1	Pool Restoration Project	5,805	SF	\$40.00	\$232,200	30	2026	100%	\$297,236	2056	100%	\$623,472				The swimming pools are in-ground, cast-in-place concrete structures. The main pool underwent a partial restoration project in 2006 during which the coping, waterline tiles, and approximately 2' of pool shell gunnite were replaced. Prior to that in 2003, the pool plumbing and perimeter pool deck were replaced. The pool appears to be in currently good condition. However, it may be nearing the end of its statistical service life. Restoration does not include coping tile replacement, which is scheduled in 5.3 below. It is prudent to plan for another structural renovation now because of the large expense involved if required.
5.2	Pool White Coat	5,805	SF	\$7.49	\$43,479	7	2020	100%	\$47,993	2033	100%	\$66,159	2040	100%	\$78,642	The pool white coat was replaced in 2013 at a reported cost of \$43,500. Replacement is scheduled after a typical service life. Pool white coating seals the pool surface and helps prevent water infiltration into the structure of the pool. White coat generally has a service life of seven years. No deficiencies were observed.
5.3	Pool Coping	471	LF	\$32.00	\$15,072	4	2017	10%	\$1,545	2020	4%	\$665	2026	100%	\$19,293	Standard cast stone bullnose coping is installed around the perimeter of the pools, which was replaced during the 2006 pool restoration. We measured approximately 18 linear feet of loose tile. However, the sections were generally associated with skimmer bays. We observed some minor cracking associated with several of the skimmers, suggesting there may be structural issues. We have scheduled an allowance throughout the study period to address replacements of cracked, loose, or "hollow" tiles and to investigate and possibly repair the skimmers. Diligent maintenance of the coping and the soft joint sealant will prevent water infiltration behind the pool shell, which, if not controlled, will cause freeze/thaw damage.
5.4	Pool Fencing	1	LS	\$53,227.00	\$53,227	30	2034	100%	\$83,016	2064	100%	\$174,132				474 linear feet of painted, six-foot-high, aluminum picket fencing was installed at the perimeter of the pool deck in 2004. 173 linear feet of four-foot-high picket fencing separates the wading pool and the picnic area from the main pool. The fencing appears to be in good condition.
5.5	Pool Perimeter Equipment	1	LS	\$33,310.00	\$33,310	20	2026	100%	\$42,640	2046	100%	\$69,870				Pool perimeter equipment consists of three fixed lifeguard stands, five stainless steel ladders, one stainless steel handrail, and a diving board. The category has been updated to include the water slide, which was installed in 2012 for a cost of \$21,310. We understand that the original stairs were replaced in 2016 for a cost of \$12,453. They are scheduled for replacement coinciding with the pool restoration project. However, we understand that periodic replacements of individual components have occurred on an as needed basis and that full replacement during the restoration may not be necessary.
5.6	Pool Furniture Allowance	1	LS	\$14,360.00	\$14,360	10	2019	50%	\$7,732	2024	50%	\$8,748	2029	50%	\$9,898	This category includes aluminum-frame and vinyl webbing lounges, chairs, and tables, all of several types, large and small umbrellas, wood and metal picnic tables, wood picnic tables, and wood benches. We understand that the furnishings were replaced in 2014 by the Swim & Tennis Club. We have budgeted an allowance throughout the study period to replace a percentage of the furniture as necessary. Re-webbing of damaged pieces periodically may extend the service life of the entire set of furniture.
5.7	Main Pool Pump & Filters	1	LS	\$20,000.00	\$20,000	15	2030	100%	\$28,259	2045	100%	\$40,928				The main pool is served by a Baldor Reliance, 15hp metal pump and strainer assembly and is filtered by five Triton 36" TR-140C, permanent media filters. We understand that the pump was replaced in 2016 for a price of \$4,980.

Reserve Fund Plan for
HIDDENBROOK HOA
Herndon, Virginia

COMPONENT DATA AND
ASSET REPLACEMENT SCHEDULE
TABLE 1
2016 Through 2035



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
5.8	Wading Pool Pump & Filter	1	LS	\$2,100.00	\$2,100	10	2021	100%	\$2,376	2031	100%	\$3,041	2041	100%	\$3,893	The wading pool is served by a Pac Fab, plastic pump and strainer assembly and is filtered by one Triton 24" TR-60, permanent media filter. No records of replacement were available. However, we understand that it replaced a pump, which was installed in 2001.
5.9	Pool Chlorinators	1	LS	\$1,250.00	\$1,250	10	2021	100%	\$1,414	2031	100%	\$1,810	2041	100%	\$2,317	The pool has two chemical feeders, which were replaced in 2009 along with a CAT controller and an acid feeder, which were replaced in 2014. All four of these components are in good operating condition, but do require occasional maintenance, which is accounted for out of the annual operational budget.
5.10	Water Heater	1	EA	\$4,000.00	\$4,000	20	2029	100%	\$5,514	2049	100%	\$9,035				Domestic hot water is provided to the shower rooms and kitchen by a 2014 replacement State Sandblaster, commercial, 80-gallon, electric water heater. Management reported that the unit was replaced for a price of \$6,158. This price included the cost of relocation, and therefore, was not used in our calculations.
5.11	Plumbing Fixtures	1	LS	\$25,000.00	\$25,000	35	2017	50%	\$12,813	2052	100%	\$60,813				This category consists of sinks, commodes, urinals, showers, and partitions of the shower rooms, the sink, commode, and scrub sink of the restroom, and the drinking fountain. We understand that the renovation of the shower rooms will include the replacement of many of the plumbing fixtures. We have scheduled a general expenditure near-term.
5.12	Electrical Equipment & Electrical Service Panels	1	LS	\$9,000.00	\$9,000	45	2036	100%	\$14,748	2061	100%	\$27,341				This category includes the exhaust fans, emergency light, wall-mounted heaters, ceiling-mounted fluorescent fixtures, and wall-mounted fixtures of the lower level of the building and the electric panels. We understand that two replacement Square D panels total 625 amps were installed in 2016 for \$4,017.
5.13	Pool Covers	1	LS	\$13,000.00	\$13,000	10	2023	100%	\$15,453	2033	100%	\$19,781	2043	100%	\$25,321	Nylon mesh pool covers were purchased in 2006. They were not observed. Pool covers may extend the service life of the white coat and reduce overall maintenance costs.
5.14	Pool Soft Joint	1	LS	\$3,300.00	\$3,300	2	2017	33%	\$1,116	2018	33%	\$1,144	2019	33%	\$1,173	The joint between coping tiles and pool deck is sealed with a flexible sealant to prevent water infiltration behind the pool structure. Over time, this sealant deteriorates and water infiltration can cause damage to the pool structure during freeze/thaw cycles. We observed several "soft" areas and at least one section, which has settled, suggesting water intrusion and possible cavitation. Sealant should periodically be removed and replaced to prevent damage. Management has requested this budget for a total of 1/3 every year such that all sealant is replaced every three years.

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
HIDDENBROOK HOA
Herndon, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2016 Through 2035



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2016	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2016					2016	
	2.1	Concrete Sidewalks	\$4,361	\$4,361	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$3,176	\$3,176		
					\$7,537	
2017					2017	
	1.3	Asphalt Full-Depth Repair & Crack Filling Allowance	\$4,350	\$4,459	TOTAL EXPENDITURES	
	2.3	Concrete Steps	\$3,596	\$3,686		
	2.4	Concrete Pool Deck	\$4,902	\$5,025		
	3.1	Entrance Signs	\$4,920	\$5,043		
	3.6	Tot Lot Mulch	\$3,000	\$3,075		
	3.8	Tennis Court Color Coat	\$1,821	\$1,866		
	3.12	Storm Water Drainage System Allowance	\$3,750	\$3,844		
	4.1	Re-Roofing Projects	\$17,078	\$17,504		
	4.2	Wood Siding & Trim	\$10,160	\$10,414		
	4.4	Door Allowance	\$466	\$477		
	4.6	Wood Decks & Railings	\$16,500	\$16,913		
	4.10	Carpeting	\$4,149	\$4,253		
	4.12	Shower Room Finishes	\$20,000	\$20,500		
	5.3	Pool Coping	\$1,507	\$1,545		
	5.11	Plumbing Fixtures	\$12,500	\$12,813		
	5.14	Pool Soft Joint	\$1,089	\$1,116		
					\$112,533	
2018					2018	
	3.5	Tot Lot & Outdoor Furniture Allowance	\$35,000	\$36,772	TOTAL EXPENDITURES	
	5.14	Pool Soft Joint	\$1,089	\$1,144		
					\$37,916	
2019					2019	
	3.6	Tot Lot Mulch	\$3,000	\$3,231	TOTAL EXPENDITURES	
	3.11	Tree Trimming, Removal, & Replacement Allowance	\$4,000	\$4,308		
	4.8	Office Equipment & Furnishings Allowance	\$3,000	\$3,231		
	4.13	Surveillance & Security Systems Allowance	\$3,000	\$3,231		
	5.6	Pool Furniture Allowance	\$7,180	\$7,732		
	5.14	Pool Soft Joint	\$1,089	\$1,173		
					\$22,904	
2020					2020	
	1.2	Asphalt Seal Coat	\$4,992	\$5,510	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repair & Crack Filling Allowance	\$2,175	\$2,401		
	5.2	Pool White Coat	\$43,479	\$47,993		
	5.3	Pool Coping	\$603	\$665		
	5.14	Pool Soft Joint	\$1,089	\$1,202		
					\$57,772	
2021					2021	
	3.6	Tot Lot Mulch	\$3,000	\$3,394	TOTAL EXPENDITURES	
	3.7	Tennis Court Restoration Project	\$28,750	\$32,528		
	3.9	Tennis Court Benches	\$2,400	\$2,715		
	3.10	Tennis Court Fencing	\$15,840	\$17,922		
	5.8	Wading Pool Pump & Filter	\$2,100	\$2,376		
	5.9	Pool Chlorinators	\$1,250	\$1,414		
	5.14	Pool Soft Joint	\$1,089	\$1,232		
					\$61,581	
2022					2022	
	2.1	Concrete Sidewalks	\$1,349	\$1,564	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$1,477	\$1,713		
	2.4	Concrete Pool Deck	\$4,902	\$5,685		
	3.1	Entrance Signs	\$3,280	\$3,804		
	3.11	Tree Trimming, Removal, & Replacement Allowance	\$4,000	\$4,639		

Reserve Fund Plan for
HIDDENBROOK HOA
Herndon, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2016 Through 2035



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2016	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
	4.4	Door Allowance	\$3,105	\$3,601		
	4.9	Building Lighting & Electrical Allowance	\$25,500	\$29,572		
	5.14	Pool Soft Joint	\$1,089	\$1,263		
					\$51,841	
2023					2023	
	3.6	Tot Lot Mulch	\$3,000	\$3,566	TOTAL EXPENDITURES	
	5.13	Pool Covers	\$13,000	\$15,453		
	5.14	Pool Soft Joint	\$1,089	\$1,294		
					\$20,313	
2024					2024	
	3.12	Storm Water Drainage System Allowance	\$7,500	\$9,138	TOTAL EXPENDITURES	
	4.8	Office Equipment & Furnishings Allowance	\$3,000	\$3,655		
	4.13	Surveillance & Security Systems Allowance	\$3,000	\$3,655		
	5.6	Pool Furniture Allowance	\$7,180	\$8,748		
	5.14	Pool Soft Joint	\$1,089	\$1,327		
					\$26,523	
2025					2025	
	1.1	Asphalt Restoration Project	\$52,000	\$64,941	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repair & Crack Filling Allowance	\$8,700	\$10,865		
	3.6	Tot Lot Mulch	\$3,000	\$3,747		
	3.11	Tree Trimming, Removal, & Replacement Allowance	\$4,000	\$4,995		
	5.14	Pool Soft Joint	\$1,089	\$1,360		
					\$85,908	
2026					2026	
	3.8	Tennis Court Color Coat	\$17,000	\$21,761	TOTAL EXPENDITURES	
	4.11	Resilient Vinyl Tile	\$4,246	\$5,435		
	5.1	Pool Restoration Project	\$232,200	\$297,236		
	5.3	Pool Coping	\$15,072	\$19,293		
	5.5	Pool Perimeter Equipment	\$33,310	\$42,640		
	5.14	Pool Soft Joint	\$1,089	\$1,394		
					\$387,759	
2027					2027	
	2.1	Concrete Sidewalks	\$1,349	\$1,770	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$1,477	\$1,939		
	2.3	Concrete Steps	\$2,542	\$3,335		
	2.4	Concrete Pool Deck	\$4,902	\$6,432		
	3.2	Storage Shed	\$2,000	\$2,624		
	3.6	Tot Lot Mulch	\$3,000	\$3,936		
	4.2	Wood Siding & Trim	\$5,080	\$6,665		
	4.4	Door Allowance	\$3,105	\$4,074		
	4.9	Building Lighting & Electrical Allowance	\$8,500	\$11,153		
	4.10	Carpeting	\$4,149	\$5,444		
	5.14	Pool Soft Joint	\$1,089	\$1,429		
					\$48,802	
2028					2028	
	3.11	Tree Trimming, Removal, & Replacement Allowance	\$4,000	\$5,380	TOTAL EXPENDITURES	
	5.14	Pool Soft Joint	\$1,089	\$1,465		
					\$6,844	
2029					2029	
	3.6	Tot Lot Mulch	\$3,000	\$4,136	TOTAL EXPENDITURES	
	4.8	Office Equipment & Furnishings Allowance	\$3,000	\$4,136		
	4.13	Surveillance & Security Systems Allowance	\$3,000	\$4,136		
	5.6	Pool Furniture Allowance	\$7,180	\$9,898		
	5.10	Water Heater	\$4,000	\$5,514		
	5.14	Pool Soft Joint	\$1,089	\$1,501		
					\$29,320	

Reserve Fund Plan for
HIDDENBROOK HOA
Herndon, Virginia

CALENDAR OF EXPENDITURES
TABLE 2
2016 Through 2035



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2016	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2030					2030	
	3.6	Tot Lot Mulch	\$3,000	\$4,239	TOTAL EXPENDITURES	
	4.5	Split-System Heat Pump	\$13,380	\$18,906		
	5.3	Pool Coping	\$603	\$852		
	5.7	Main Pool Pump & Filters	\$20,000	\$28,259		
	5.14	Pool Soft Joint	\$1,089	\$1,539		
					\$53,795	
2031					2031	
	1.2	Asphalt Seal Coat	\$4,992	\$7,230	TOTAL EXPENDITURES	
	1.3	Asphalt Full-Depth Repair & Crack Filling Allowance	\$2,871	\$4,158		
	3.4	Perimeter Wood Fencing	\$4,777	\$6,919		
	3.9	Tennis Court Benches	\$2,400	\$3,476		
	3.11	Tree Trimming, Removal, & Replacement Allowance	\$4,000	\$5,793		
	3.12	Storm Water Drainage System Allowance	\$7,500	\$10,862		
	5.8	Wading Pool Pump & Filter	\$2,100	\$3,041		
	5.9	Pool Chlorinators	\$1,250	\$1,810		
	5.14	Pool Soft Joint	\$1,089	\$1,577		
					\$44,867	
2032					2032	
	2.1	Concrete Sidewalks	\$1,349	\$2,002	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$1,477	\$2,193		
	2.4	Concrete Pool Deck	\$4,902	\$7,278		
	3.6	Tot Lot Mulch	\$3,000	\$4,454		
	3.8	Tennis Court Color Coat	\$17,000	\$25,237		
	4.4	Door Allowance	\$3,105	\$4,609		
	4.9	Building Lighting & Electrical Allowance	\$8,500	\$12,618		
	5.14	Pool Soft Joint	\$1,089	\$1,617		
					\$60,007	
2033					2033	
	3.5	Tot Lot & Outdoor Furniture Allowance	\$35,000	\$53,257	TOTAL EXPENDITURES	
	5.2	Pool White Coat	\$43,479	\$66,159		
	5.13	Pool Covers	\$13,000	\$19,781		
	5.14	Pool Soft Joint	\$1,089	\$1,657		
					\$140,854	
2034					2034	
	3.4	Perimeter Wood Fencing	\$11,695	\$18,241	TOTAL EXPENDITURES	
	3.6	Tot Lot Mulch	\$3,000	\$4,679		
	3.11	Tree Trimming, Removal, & Replacement Allowance	\$4,000	\$6,239		
	4.6	Wood Decks & Railings	\$8,250	\$12,867		
	4.8	Office Equipment & Furnishings Allowance	\$3,000	\$4,679		
	4.11	Resilient Vinyl Tile	\$1,061	\$1,655		
	4.13	Surveillance & Security Systems Allowance	\$3,000	\$4,679		
	5.3	Pool Coping	\$603	\$940		
	5.4	Pool Fencing	\$53,227	\$83,016		
	5.6	Pool Furniture Allowance	\$7,180	\$11,198		
	5.14	Pool Soft Joint	\$1,089	\$1,698		
					\$149,892	
2035					2035	
	5.14	Pool Soft Joint	\$1,089	\$1,741	TOTAL EXPENDITURES	
					\$1,741	

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
HIDDENBROOK HOA
Herndon, Virginia

CURRENT FUNDING ANALYSIS
CASH FLOW METHOD
TABLE 3



Beginning Reserve Fund Balance: **448,240** Annual Contribution To Reserves: **38,530** Contribution Percentage Increase: **2.50%** Annual Inflation Factor: **2.50%** Annual Interest Income Factor: **1.00%**

In Dollars

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
2016	1,112,661	448,240	38,530	4,671	7,537	483,904
2017	1,140,478	483,904	39,493	4,465	112,532	415,331
2018	1,168,990	415,331	40,481	4,187	37,916	422,082
2019	1,198,214	422,082	41,493	4,341	22,906	445,010
2020	1,228,170	445,010	42,530	4,388	57,771	434,157
2021	1,258,874	434,157	43,593	4,264	61,581	420,434
2022	1,290,346	420,434	44,683	4,185	51,841	417,461
2023	1,322,604	417,461	45,800	4,332	20,313	447,281
2024	1,355,670	447,281	46,945	4,605	26,523	472,307
2025	1,389,561	472,307	48,119	4,540	85,908	439,058
2026	1,424,300	439,058	49,322	2,575	387,759	103,196
2027	1,459,908	103,196	50,555	1,047	48,801	105,996
2028	1,496,406	105,996	51,819	1,309	6,845	152,279
2029	1,533,816	152,279	53,114	1,659	29,321	177,731
2030	1,572,161	177,731	54,442	1,789	53,795	180,168
2031	1,611,465	180,168	55,803	1,870	44,866	192,974
2032	1,651,752	192,974	57,198	1,924	60,008	192,088
2033	1,693,046	192,088	58,628	1,484	140,854	111,346
2034	1,735,372	111,346	60,094	632	149,891	22,181
2035	1,778,756	22,181	61,596	548	1,741	82,584

STUDY PERIOD TOTALS

984,236 **58,817** **1,408,709**

Reserve Fund Plan for
HIDDENBROOK HOA
Herndon, Virginia

**ALTERNATIVE FUNDING ANALYSIS
CASH FLOW METHOD
HYBRID APPROACH, SINGLE YEAR INCREASE
TABLE 3.1**



Beginning Reserve Fund Balance: **448,240** Annual Contribution To Reserves: **38,530** Contribution Percentage Increase: **2.50%** Annual Inflation Factor: **2.50%** Annual Interest Income Factor: **1.00%**

In Dollars						
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
2016	1,112,661	448,240	38,530	4,671	7,537	483,904
2017	1,140,478	483,904	66,700	4,613	112,532	442,686
2018	1,168,990	442,686	68,368	4,613	37,916	477,750
2019	1,198,214	477,750	70,077	5,056	22,906	529,977
2020	1,228,170	529,977	71,829	5,401	57,771	549,435
2021	1,258,874	549,435	73,624	5,586	61,581	567,064
2022	1,290,346	567,064	75,465	5,825	51,841	596,514
2023	1,322,604	596,514	77,352	6,303	20,313	659,855
2024	1,355,670	659,855	79,285	6,916	26,523	719,533
2025	1,389,561	719,533	81,268	7,204	85,908	722,097
2026	1,424,300	722,097	83,299	5,603	387,759	423,240
2027	1,459,908	423,240	85,382	4,451	48,801	464,272
2028	1,496,406	464,272	87,516	5,102	6,845	550,045
2029	1,533,816	550,045	89,704	5,854	29,321	616,282
2030	1,572,161	616,282	91,947	6,399	53,795	660,833
2031	1,611,465	660,833	94,245	6,907	44,866	717,120
2032	1,651,752	717,120	96,602	7,403	60,008	761,117
2033	1,693,046	761,117	99,017	7,420	140,854	726,699
2034	1,735,372	726,699	101,492	7,039	149,891	685,339
2035	1,778,756	685,339	104,029	7,441	1,741	795,068
STUDY PERIOD TOTALS			1,635,729	119,808	1,408,709	FULLY FUNDED BALANCE GOAL

Reserve Fund Plan for
HIDDENBROOK HOA
Herndon, Virginia

**ALTERNATIVE FUNDING ANALYSIS
CASH FLOW METHOD
HYBRID APPROACH, MULTIPLE YEAR STEPPED INCREASE
TABLE 3.2**



Beginning Reserve Fund Balance: **448,240** Annual Contribution To Reserves: **38,530** Contribution Percentage Increase: **2.24%** Annual Inflation Factor: **2.50%** Annual Interest Income Factor: **1.00%**

In Dollars						
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
2016	1,112,661	448,240	38,530	4,671	7,537	483,904
2017	1,140,478	483,904	54,530	4,547	112,532	430,450
2018	1,168,990	430,450	70,530	4,502	37,916	467,565
2019	1,198,214	467,565	72,111	4,965	22,906	521,735
2020	1,228,170	521,735	73,727	5,329	57,771	543,019
2021	1,258,874	543,019	75,380	5,531	61,581	562,349
2022	1,290,346	562,349	77,069	5,787	51,841	593,364
2023	1,322,604	593,364	78,796	6,279	20,313	658,126
2024	1,355,670	658,126	80,563	6,905	26,523	719,071
2025	1,389,561	719,071	82,368	7,205	85,908	722,736
2026	1,424,300	722,736	84,214	5,615	387,759	424,806
2027	1,459,908	424,806	86,102	4,471	48,801	466,578
2028	1,496,406	466,578	88,032	5,128	6,845	552,893
2029	1,533,816	552,893	90,005	5,884	29,321	619,462
2030	1,572,161	619,462	92,022	6,431	53,795	664,120
2031	1,611,465	664,120	94,085	6,940	44,866	720,278
2032	1,651,752	720,278	96,194	7,433	60,008	763,897
2033	1,693,046	763,897	98,350	7,444	140,854	728,837
2034	1,735,372	728,837	100,554	7,055	149,891	686,555
2035	1,778,756	686,555	102,808	7,446	1,741	795,068
STUDY PERIOD TOTALS			1,635,969	119,568	1,408,709	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.

**FUNDING ANALYSIS
COMPONENT METHOD
TABLE 4**



Component Number	COMPONENT	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
1 ASPHALT COMPONENTS																					
1.1	Asphalt Restoration Project	3,690	3,690	3,690	3,690	3,690	3,690	3,690	3,690	3,690	5,134	5,134	5,134	5,134	5,134	5,134	5,134	5,134	5,134	5,134	
1.2	Asphalt Seal Coat	927	927	927	927	622	622	622	622	622	622	622	622	622	622	622	1,355	1,355	1,355	1,355	1,355
1.3	Asphalt Full-Depth Repair & Crack Filling All	1,065	788	788	788	2,118	2,118	2,118	2,118	2,118	672	672	672	672	672	672	1,559	1,559	1,559	1,559	1,559
2 CONCRETE COMPONENTS																					
2.1	Concrete Sidewalks	654	253	253	253	253	253	345	345	345	345	345	390	390	390	390	390	442	442	442	442
2.2	Concrete Curbs & Gutters	569	277	277	277	277	277	378	378	378	378	378	428	428	428	428	428	484	484	484	484
2.3	Concrete Steps	718	317	317	317	317	317	317	317	317	317	317	584	584	584	584	584	584	584	584	584
2.4	Concrete Pool Deck	1,333	1,108	1,108	1,108	1,108	1,108	1,254	1,254	1,254	1,254	1,254	1,419	1,419	1,419	1,419	1,419	1,605	1,605	1,605	1,605
3 SITE FEATURES																					
3.1	Entrance Signs	970	742	742	742	742	742	510	510	510	510	510	510	510	510	510	510	510	510	510	510
3.2	Storage Shed	136	136	136	136	136	136	136	136	136	136	136	235	235	235	235	235	235	235	235	235
3.3	Wood Retaining Walls	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296	296
3.4	Perimeter Wood Fencing	427	427	427	427	427	427	427	427	427	427	427	427	427	427	427	5,987	5,987	5,987	2,109	2,109
3.5	Tot Lot & Outdoor Furniture Allowance	4,320	4,320	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	3,290	4,764	4,764	4,764
3.6	Tot Lot Mulch	1,636	1,599	1,599	1,680	1,680	1,765	1,765	1,854	1,854	1,948	1,948	2,046	2,046	4,216	2,204	2,204	2,315	2,315	2,432	2,432
3.7	Tennis Court Restoration Project	2,139	2,139	2,139	2,139	2,139	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407	2,407
3.8	Tennis Court Color Coat	495	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310	2,310	4,080	4,080	4,080	4,080	4,080	4,080	6,823	6,823	6,823	6,823
3.9	Tennis Court Benches	283	283	283	283	283	330	330	330	330	330	330	330	330	330	330	423	423	423	423	423
3.10	Tennis Court Fencing	1,052	1,052	1,052	1,052	1,052	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074	1,074
3.11	Tree Trimming, Removal, & Replacement All	1,414	1,414	1,414	1,523	1,523	1,523	1,640	1,640	1,640	1,766	1,766	1,766	1,901	1,901	1,901	2,048	2,048	2,048	2,205	2,205
3.12	Storm Water Drainage System Allowance	748	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,497	1,497	1,497	1,497	1,497	1,497	1,497	1,780	1,780	1,780	1,780	

Beginning Reserve Fund Balance:

In Dollars448,240

Component Number		2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
COMPONENT																					
5.5	Pool Perimeter Equipment	1,510	1,510	1,510	1,510	1,510	1,510	1,510	1,510	1,510	1,510	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155	3,155
5.6	Pool Furniture Allowance	1,589	1,589	1,589	1,706	1,706	1,706	1,706	1,706	1,930	1,930	1,930	1,930	1,930	2,183	2,183	2,183	2,183	2,183	2,470	2,470
5.7	Main Pool Pump & Filters	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	1,755	2,528	2,528	2,528	2,528	2,528	2,528
5.8	Wading Pool Pump & Filter	248	248	248	248	248	289	289	289	289	289	289	289	289	289	289	370	370	370	370	370
5.9	Pool Chlorinators	148	148	148	148	148	172	172	172	172	172	172	172	172	172	172	220	220	220	220	220
5.10	Water Heater	345	345	345	345	345	345	345	345	345	345	345	345	345	408	408	408	408	408	408	408
5.11	Plumbing Fixtures	3,470	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451	1,451
5.12	Electrical Equipment & Electrical Service Pa	666	666	666	666	666	666	666	666	666	666	666	666	666	666	666	666	666	666	666	666
5.13	Pool Covers	1,524	1,524	1,524	1,524	1,524	1,524	1,524	1,880	1,880	1,880	1,880	1,880	1,880	1,880	1,880	1,880	1,880	2,407	2,407	2,407
5.14	Pool Soft Joint	594	1,138	1,166	1,196	1,225	1,256	1,287	1,320	1,353	1,386	1,421	1,457	1,493	1,530	1,569	1,608	1,648	1,689	1,732	1,775
ANNUAL COMPONENT CONTRIBUTION TOTALS		81,886	69,429	68,427	68,466	70,140	70,658	68,399	68,877	69,557	69,808	77,315	81,221	81,392	84,127	83,465	91,336	94,965	103,085	111,367	111,410

COMPONENT METHOD SUMMARY	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
BEGINNING RESERVE FUND BALANCE	448,240	527,537	490,111	525,917	577,133	595,680	611,126	634,194	689,504	739,842	731,554	428,879	466,049	545,720	606,466	642,682	696,104	738,570	708,781	677,983
PLUS ANNUAL COMPONENT CONTRIBUTION	81,886	69,429	68,427	68,466	70,140	70,658	68,399	68,877	69,557	69,808	77,315	81,221	81,392	84,127	83,465	91,336	94,965	103,085	111,367	111,410
CAPITAL EXPENDITURES	7,537	112,532	37,916	22,906	57,771	61,581	51,841	20,313	26,523	85,908	387,759	48,801	6,845	29,321	53,795	44,866	60,008	140,854	149,891	1,741
SUBTOTAL	522,589	484,434	520,622	571,477	589,502	604,757	627,684	682,758	732,538	723,742	421,110	461,299	540,596	600,526	636,136	689,152	731,061	700,801	670,257	787,652
PLUS INTEREST INCOME @ 1.00%	4,948	5,677	5,295	5,655	6,179	6,368	6,511	6,745	7,305	7,812	7,769	4,750	5,124	5,939	6,546	6,953	7,509	7,980	7,725	7,416
FULLY FUNDED RESERVE FUND BALANCE	527,537	490,111	525,917	577,133	595,680	611,126	634,194	689,504	739,842	731,554	428,879	466,049	545,720	606,466	642,682	696,104	738,570	708,781	677,983	795,068

PERCENT FUNDED FOR CURRENT CYCLE	93%
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TOTAL EXPENDITURES	1,408,709
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TOTAL CONTRIBUTIONS	1,625,330
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STUDY PERIOD TOTAL INTEREST	130,207
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AVERAGE ANNUAL CONTRIBUTION	81,267
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**PHOTOGRAPHS
WITH
DESCRIPTIVE
NARRATIVES**



MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.



PHOTO #1

The asphalt parking lot is in overall good condition for its age, and was recently seal coated and crack filled. However, adjacent to the dumpster location we observed deflection, indicative of sub base failure. We have scheduled a full depth repair near-term to help ensure a full service life of the pavement is achieved.



PHOTO #2

The pedestrian surface leading to the pool facility exhibits significant tripping hazards, which appear to be caused by the adjacent mature tree's root system. We have scheduled a remediation project near-term to prevent personal injury.



PHOTO #3

Approximately 102 linear feet of the sidewalk panels have settled adjacent to the curb profile creating tripping hazards. We have scheduled a repair project to potentially use precision concrete cutting or replace the curbs, near-term.



PHOTO #4

The concrete pool deck is in overall continuing good condition. Minor unsealed cracking and deterioration was observed and should be repaired coinciding other concrete projects near-term. Cracking along the east side of the deck may be the result of deflection, and should be monitored.



PHOTO #5

We understand the painted wood message board at the entrance of the community center parking lot is problematic. We have scheduled a partial expenditure to replace or repair the sign near-term.



PHOTO #6

The tennis courts are in good condition with minor unfilled cracks and localized delamination of the color coat observed. We have scheduled a remediation project near-term. The cost was provided by Management based on an accepted contractor's proposal.



PHOTO #7

The exterior components of the community center building are in overall fair condition. We have scheduled several significant projects near-term that include re-roofing, replacement of deteriorated trim, and replacement of the remaining wood decks and railings with Trex decking.



PHOTO #8

We understand many partitions were replaced with composite material recently and the remaining wood partitions may be replaced during the shower room renovation project.



PHOTO #9

The shower room finishes appear outdated and at the end of their service lives. We have included a replacement project to coincide with the plumbing fixtures refurbishment project scheduled near-term. Once a budget and scope of the project is established the report should be revised.



PHOTO #10

We observed 18 linear feet of loose or hollow coping stones associated with the wading and main pool. The majority of the deficiencies are located over the skimmer bays.

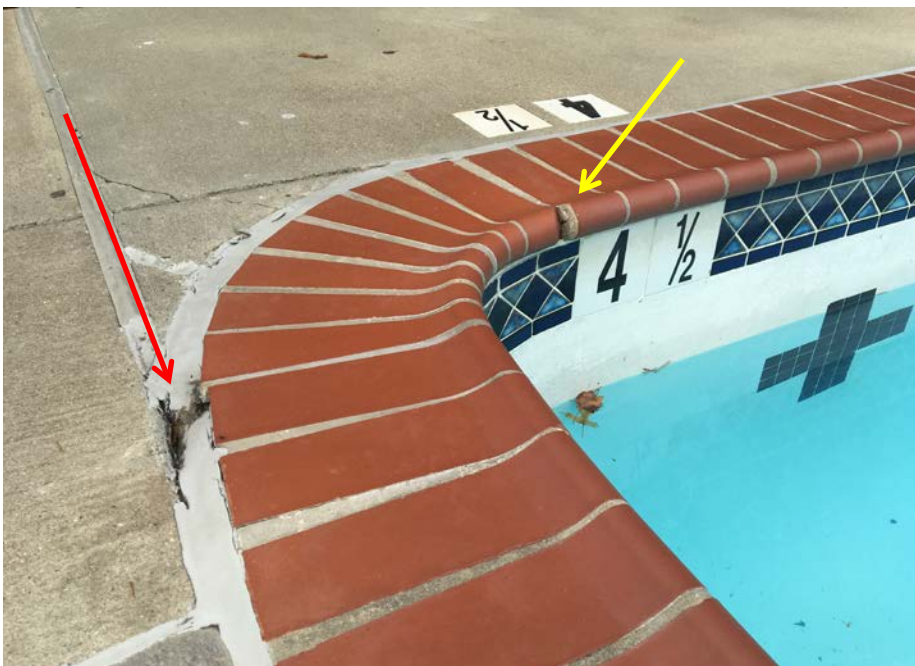


PHOTO #11

Pictured is an example of soft sealant (red) and deteriorated grout (yellow). This should be repaired during the coping stone replacement project near-term.



PHOTO #12

The wading pool pump is statistically at the end of its service life. We have scheduled its replacement near-term.