



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



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(Final Report, Revised October 16, 2018)  
**Condition Assessment  
&  
Reserve Fund Plan Update  
2018**

# *Lakewood Hills*

Springfield, Virginia



Prepared for:  
The Board of Directors  
&  
Cardinal Management Group, Inc.

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



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October 16, 2018

Mr. Steve Rugen, CMCA®, AMS®, Community Manager  
Cardinal Management Group, Inc.  
4330 Prince William Parkway, Suite 201  
Woodbridge, Virginia 22192

RE: **CONDITION ASSESSMENT AND RESERVE FUND PLAN UPDATE 2018**  
**Lakewood Hills #1 Community Association**  
(Final Report, Revised October 16, 2018)  
Springfield, Virginia  
Project No. 8439

Dear Mr. Rugen:

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

We have revised the report to reflect changes requested by you and the Board on September 26, 2018.

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

Sincerely,

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

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

James G. Mason, R. S.  
Principal



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## **FOREWORD**

### **PLEASE READ THIS FIRST**

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

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

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

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## 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 Lakewood Hills' Reserve Fund Plan Update. Each is discussed in greater detail in the body of the report. We encourage the reader to "go deeper" into the report, and we have written it in a way that's understandable to a first-time reader.

Analyzing the capital reserves reveals that:

The fund is approximately 97% funded through 2017, **See Paragraph 3.1**. This is a significant improvement from past years. Our goal is to become fully funded by the end of the 20-year period (2037).

To achieve this goal, the Board should:

- Reduce the annual contribution in **2019** from **\$82,208** to **\$57,801**, and plan on annual increases of **2.5%** to reflect inflation thereafter.
- This represents a reduction from **\$26.55** to **\$18.66** (a net reduction of **\$7.89**) per residence, per month (based on **258** Townhomes).

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

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## VISUAL EVALUATION METHODOLOGY

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

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

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

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

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

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## 1. INTRODUCTION

**1.1 Background:** Lakewood Hills #1 Community Association is comprised of 258 townhomes located on Golden Ball Tavern Court, in Springfield, Virginia. The community was constructed between 1977 and 1978. Eight private streets, Gist Court, Giltinan Court, Galbreth Court, Golden Leaf Court, Glendower Court, Grandstaff Court, Gutman Court, Golden Horseshoe Court, and a recreational parking area, are within the community. Gavelwood Court and Golden Iris Court are part of a separate community, which are not included.

We are providing the Condition Assessment and Reserve Fund Plan based on Proposal Acceptance Agreement No. 8439 dated January 23, 2018. Our services are subject to all terms and conditions specified therein.

Mason & Mason did not review the declarations, covenants, or other organization documents pertaining to the establishment and governance of the Community 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 Lakewood Hills #1 in 2008 and a Level II Update in 2013. 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.

James G. Mason III, R. S. conducted the field evaluation for this report on March 28, 2018. The weather was overcast, and the temperature was approximately 52 degrees F. Precipitation had occurred for several days prior to the site visit. The pavements, walkways, and grounds were generally wet and clean of debris.

**1.2 Principal Findings:** The common assets appear to be in overall fair condition. The community is now reaching a 40-year benchmark in terms of replacement of major systems. The asphalt driveways and parking bays are in overall poor condition with a significant amount of deflected pavement (indicative of sub-base damage), coupled with a large quantity of unfilled longitudinal and transverse cracking. All pavements require full restoration near-term. Due to the size of the community, and a lack of public street parking, Management requested that we split the pavement project between two years, starting this year. We have therefore included the worst of the pavement, in Phase 1 the first year, and Phase 2 the following year. Dominion Paving provided an estimate for full-width profile milling and replacement asphalt of all streets in 2016. We have based the cost on the proposal, plus inflation. We have also included replacement of the speed humps throughout the community. About six years after the restoration project, pavement maintenance, such as full-depth repairs of deflected

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asphalt, crack filling, and seal coating should be accomplished, repeating every six years thereafter.

The concrete sidewalks and the curbs and gutters are all in generally continuing good condition. The differential sidewalk panel heights were recently saw-cut, which helped eliminate the significant tripping hazards throughout the entire community. When there are cracked, settled and/or heaved concrete sidewalks, they are potential tripping hazards. The liability and costs associated with personal injury lawsuits resulting primarily from sidewalk and curb tripping hazards are too great to defer repair. Management requested that we include saw-cutting every two years. However, any cracked or scaled concrete should be replaced, as usual. It is our opinion that addressing deficiencies, which pose a hazard to pedestrians, should not be deferred. As such, we recommend correcting the tripping hazards when present throughout the sidewalks as soon as practicable.

Site features such as the entrance monument, monument sign, basketball goals, some street signage, wood steps, wood retaining wall, and light poles range from fair to continuing good condition. Management reported that all but three of the street lights are leased through Dominion Power, and so we have removed them from the total quantity. Most community wood retaining walls were replaced circa 2014 with modular block retaining walls. The cost of replacement was included in this update. The walls appear to be in continuing good condition. However, we did not observe any provisions for drainage, nor did we observe a safety railing above the wall along Golden Horseshoe Court.

The tot lots range from poor to fair condition. We observed significant safety issues, especially with the tot lot located near the multi-purpose court. One storm drain cover is removed on the lower side of the multi-purpose court, which should be replaced and secured to prevent injury.

Currently the reserve fund appears to be just short of the fully-funded goal for the current cycle. The contributions should be lowered to address generational equity issues, and to eventually achieve the fully funded goal long-term. The Association has adequate reserve funding and should be proactive in making the necessary common component repairs and replacements.

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

Generally, our approach is to group appropriately related component replacement items into projects. This creates a more realistic model and allows a grouping time line that is more convenient to schedule and logical to accomplish. Please see the Table 1 Discussion, Column 17, and the Asphalt Pavement Report in Section 7, for specific information.

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## 2. FINANCIAL ANALYSIS

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

**2.1 Calculation Basics:** The Association is on a calendar fiscal year. Management reported that the un-audited reserve fund balance, including cash and securities, as of **December 31, 2017**, was **\$427,666**. 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 **\$1,597,269**.

**2.2 Current Funding Analysis, Cash Flow Method (Table 3):** The 2018 annual contribution to reserves has been set at **\$82,208 with a presumed 2.5% annual increase**. At this level, the total for all annual contributions for the twenty-year period would be **\$2,099,975**, and the total interest income is projected to be **\$148,950**. **This funding results in unrealistically high balances throughout the twenty-year period and over 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 reducing the annual contribution to \$57,801 in 2019 and providing an annual escalation factor of 2.50%, matching inflation thereafter. This plan allows for a gradual increase over time after the initial reduction, and addresses generational equity issues.** The total for all annual contributions for the twenty-year period would be **\$1,466,311**, and the total interest income is projected to be **\$89,629**. **The fully funded balance in 2037 is \$386,337.**

**2.4 Funding Analysis, Component Method (Table 4):** This method of funding would require variable annual contributions, averaging **\$72,588** over the twenty-year period. The total for all annual contributions would be **\$1,451,751**, and the total interest income is projected to be **\$104,189**. **The fully funded balance in 2037 is \$386,337.** 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

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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.

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**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.

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## 6. PREVENTIVE MAINTENANCE

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

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

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

**6.2 Asphalt Seal Coating:** The purpose is to seal and add new life to a roadway surface. It protects the existing pavement but does not add significant structural strength. A surface treatment can range from a single, light application of emulsified asphalt as a "fog" seal, to a multiple-surface course made up of alternate applications of asphalt and fine aggregate. Seal coating of all asphalt pavements should be performed at approximately six-year intervals, or approximately twice during the service life of the asphalt pavement. Seal coating more often is generally not cost-effective. The material used should be impervious to petroleum products and should be applied after crack filling, oil-spot cleaning, and full-depth repairs have been accomplished. Seal coating is a cost-effective way of extending the life of asphaltic concrete pavement. Seal coating is generally not scheduled for up to five years after an asphalt restoration project.

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

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**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 Brick Entrance Monument:** Brick monuments 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 should be investigated. Efflorescence, a residue of fine white crystals resulting from salts leaching from the mortar, serves as a warning that water is infiltrating the structure. Water infiltration problems are usually initiated at the top of an improperly sealed coping. Eliminating the infiltration of water into the monument 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 brick structure. 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 monument to prevent damage. As brick components age, depending upon the initial quality of the mortar and the long-term environment of the monument, 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.

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**6.8 Modular Block Retaining Walls:** Because of the extended service life achieved by modular block retaining walls, the slight additional installation cost is often a sound investment. This type of installation requires little maintenance over its service life, which would include diligent control and removal of adjacent vegetation to prevent root damage and displacement. If repairs are required, usually the block modules may be re-used in the restoration. Such restoration might include removal of the wall and backing materials, re-grading and compacting of soil, installation of new geotextile material, and reinstallation of the blocks.

**6.9 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.

**6.10 Bare Wood 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, warped, 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.

**6.11 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.

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

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**6.13 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.

**6.14 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.

## 7. ASPHALT PAVEMENT REPORT

Street Name	Total SY Asphalt Pavement	SY Full-Depth Repairs	Linear Footage Cracks	Parking Spaces	Parking Bays
<b>Phase 1</b>					
Golden Leaf Court	2,868	1,720	701	79	6
Glendower Court	2,272	568	888	49	4
Golden Horseshoe Court	4,380	1,314	1,134	109	7
Gutman Court	1,416	566	430	33	3
<b>Phase 1 Sub-totals</b>	<b>10,936</b>	<b>4,168</b>	<b>3,153</b>	<b>270</b>	<b>20</b>
<b>Phase 2</b>					
Gist Court	807	242	200	21	2
Galbreth Court	2,335	583	536	62	5
Giltinan Court	5,048	2,019	1,203	130	13
Grandstaff Court	2,802	700	653	54	4
Recreational Vehicle Lot	908	12	147	27	2
<b>Phase 2 Sub-totals</b>	<b>11,900</b>	<b>3,556</b>	<b>2,739</b>	<b>294</b>	<b>26</b>
<b>TOTALS</b>	<b>22,836</b>	<b>7,724</b>	<b>5,892</b>	<b>564</b>	<b>46</b>

All quantities approximate

## COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE TABLE 1 EXPLANATION

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

- Column 1 **Component No.** is consistent throughout all tables.
- Column 2 **Component** is a brief description of the component.
- Column 3 **Quantity** of the component studied, which may be an exact number, a rough estimate, or simply a (1) if the expenditure forecast is a lump sum allowance for replacement of an unquantified component.
- Column 4 **Unit of Measurement** used to quantify the component:
- SY = Square Yards
  - SF = Square Feet
  - LF = Linear Feet
  - EA = Each
  - LS = Lump Sum
  - PR = Pair
  - CY = Cubic Yards
- Column 5 **Unit Cost** used to calculate the required expenditure. This unit cost includes removal of existing components and installation of new components, including materials, labor, and overhead and profit for the contractor.
- Column 6 **Total Asset Base** is the total value of common assets included in the study in current dollars. In addition to capital assets, this figure includes one cycle of maintenance liability.
- Column 7 **Typical Service Life (Yrs) or Cycle** is the typical life expectancy of similar components in average conditions or the length of years between replacement cycles, and does not necessarily reflect the conditions observed during the field evaluation. This number is furnished for reference and is not necessarily computed in the system.
- Column 8 **1<sup>st</sup> 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 1<sup>st</sup> 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 **2<sup>nd</sup> 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 **Cycles, Percentage, and Cost** repeat as itemized above. Although not shown on the tables, Through 16 the cycles continue throughout the study period and beyond.
- Column 17 **Discussion** is the description and observed condition of the component and the methodology employed in the decision-making process. Includes the photo reference, **(Photo #1, #2, etc.)** and Maintenance Protocol reference numbers **(7.1, 7.2 etc.)** if applicable.

Reserve Fund Plan for  
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COMPONENT DATA AND  
ASSET REPLACEMENT SCHEDULE  
TABLE 1  
2018 Through 2037



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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	17
<b>1 ASPHALT COMPONENTS</b>																
1.1	Phase 1 Asphalt Restoration Project	10,936	SY	\$13.50	\$147,636	18	2018	100%	\$147,636	2036	100%	\$230,262	2054	100%	\$359,130	Phase 1 includes Golden Leaf Court, Glendower Court, Golden Horseshoe Court, and Gutman Court asphalt driveways and parking bays. Neither the depth nor the sub-base of the pavement could be visually determined. We understand that the pavement was last restored circa 1998, and it is in poor condition. Significant areas of deflected cracking (indicative of sub-base damage or insufficient asphalt depth) were observed on the driveways or parking bays. Restoration includes full-width profile milling and new compacted asphalt and new speed humps (approximately six). 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	Phase 2 Asphalt Restoration Project	11,900	SY	\$13.50	\$160,650	18	2019	100%	\$164,666	2037	100%	\$256,823	2055	100%	\$400,556	Phase 2 includes Gist Court, Galbreth Court, Giltinan Court, Grandstaff Court, and the recreational vehicle lot asphalt driveways and parking bays. Neither the depth nor the sub-base of the pavement could be visually determined. We understand that the pavement was last restored circa 1998, and it is in poor condition. Significant areas of deflected cracking (indicative of sub-base damage or insufficient asphalt depth) were observed on the driveways or parking bays. Restoration includes full-width profile milling and new compacted asphalt and new speed humps (approximately six). 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.
1.3	Asphalt Seal Coat	30,424	SY	\$1.20	\$36,509	6	2024	100%	\$42,339	2030	100%	\$49,100	2042	100%	\$66,034	The pavement does not appear to have been seal coated in several years. Seal coating may help prevent water infiltration into the sub-base through micro-cracks, but is largely a cosmetic issue. To help improve curb appeal after repairs, we have scheduled seal coating projects every six years, except in the year of the pavement restoration project when it is not necessary. Crack filling and full-depth repairs should be completed prior to application to achieve maximum benefit from the seal coating. Seal coating projects include re-striping. It should be understood that coal-tar based seal coating products have been banned from use in many localities throughout the country due to heavy contamination of ground water.
1.4	Asphalt Repair Allowance	1	LS	\$36,000.00	\$36,000	6	2018	100%	\$36,000	2024	25%	\$10,437	2030	50%	\$24,208	Approximately 7,724 square yards of deflected pavement (indicative of sub-base damage), and about 5,892 linear feet of un-filled longitudinal or transverse cracking were observed. Repairs are essential in order to achieve the projected remaining service life of the pavement, once restoration is complete. Full-depth repairs and crack filling are scheduled every six years throughout the study period, including the year of the asphalt restoration project. See the Asphalt Pavement Report, Section 7, for additional details.
<b>2 CONCRETET COMPONENTS</b>																
2.1	Concrete Sidewalks & Steps	34,448	SF	\$11.50	\$396,152	5	2022	3%	\$13,118	2027	3%	\$14,842	2032	3%	\$16,793	Concrete sidewalks, generally 4' wide, are present on one or both sides of streets within the community. Their thickness could not be visually determined. They are in generally good condition. About 128 square feet (less than 1% of the total area) is either cracked, settled or heaved between sections. We have not scheduled replacement of all sections with lesser surface defects. Severely scaled sections will tend to deteriorate more quickly over time and should be replaced in each replacement cycle. Cyclic repairs are scheduled, as full replacement at one time is not appropriate or anticipated. Concrete repairs are scheduled to coincide with work on other concrete components to take advantage of economies of scale in packaging concrete restoration work. Any trip hazards or hazardous surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2.2	Concrete Curbs & Gutters	15,988	LF	\$36.00	\$575,568	5	2022	2%	\$12,706	2027	2%	\$14,376	2032	2%	\$16,265	The driveways and parking bays are lined with standard-profile, cast-in-place, concrete curbs and gutters. They are in generally continuing good condition with about less than 1% of the length exhibiting transverse cracks or settlement. We observed approximately seven damaged sections. Minor chips usually do not justify replacement. Curb paint is in poor condition and curbs can typically be repainted under the operations budget. However, the first cycle is included in the pavement restoration cost. Cyclic repairs are scheduled, as full replacement at one time is not appropriate or anticipated. Curb repairs are scheduled to coincide with work on other concrete components to maximize economies of scale. Any trip hazards or hazardous surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2.3	Sidewalk Saw-Cut Allowance	1	LS	\$3,000.00	\$3,000	2	2020	100%	\$3,152	2022	100%	\$3,311	2024	100%	\$3,479	Concrete sidewalk panels were saw-cut at height differentials recently in order to prevent tripping hazards. All height differentials were eliminated during this project. Management requested that we include a saw-cutting project every two years and provided the budget. This allowance should not take the place of panel replacement when cracked or heavily scaled concrete is present.
<b>3 SITE FEATURES</b>																
3.1	Brick Entrance Monument	1	LS	\$5,900.00	\$5,900	50	2027	100%	\$7,368	2077	100%	\$25,326				The entrance monument at Golden Ball Tavern and Golden Leaf Court is a brick wall approximately 9' wide and 5' high with a curved, rowlock brick coping. The wall appears to be in fair condition with no major deterioration or damage observed. The wall is heavily stained and would benefit from pressure-washing and/or acid washing. With periodic maintenance under the Operations budget, the wall should have a long service life.
3.2	Carved Wood Entrance Sign	1	EA	\$3,500.00	\$3,500	15	2019	100%	\$3,588	2034	100%	\$5,196	2049	100%	\$7,525	A painted, carved wood community sign is mounted to the brick monument wall. We understand that the sign was installed circa 2001. The sign ranges from fair to continuing good condition, but would benefit from a fresh coat of paint. Annual maintenance should be completed under Operations.
3.3	Multi-Purpose Court Restoration Project	1	EA	\$21,000.00	\$21,000	20	2018	100%	\$21,000	2038	100%	\$34,411				One 50' x 70' multi-purpose court is located off of Golden Horseshoe Court next to the tot lot. The court was previously striped for basketball with spray paint and has not had color coating. The court is in fair to poor condition, with approximately 180 feet of large transverse cracking. We have scheduled court restoration near-term.
3.4	Basketball Goals	2	EA	\$2,600.00	\$5,200	20	2028	100%	\$6,656	2048	100%	\$10,907				The multi-purpose court has a basketball goal mounted on double galvanized metal standards installed at each end. They appear to range from fair to continuing good condition. The goals are not mounted on the court surface, so replacement shouldn't need to coincide with court restoration.

Reserve Fund Plan for  
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COMPONENT DATA AND  
ASSET REPLACEMENT SCHEDULE  
TABLE 1  
2018 Through 2037



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1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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
3.5	Street and Informational Signage	16	EA	\$155.00	\$2,480	20	2018	75%	\$1,860	2028	25%	\$794	2038	75%	\$3,048	Standard metal or wood traffic, parking and access control signs, typically 12" by 18" and mounted on perforated metal posts or 4x4 wood posts are located throughout the community. A total of approximately sixteen signs are installed. Posts and signs range from fair to poor condition, with rusted posts and out-of-plumb signs observed. Most of the signage is deteriorating.
3.6	Modular Block Retaining Walls	1,680	SF	\$56.92	\$95,626	40	2057	100%	\$250,498							We understand that the wood retaining walls were replaced with modular block in 2014 by Drainage & Erosion Solutions, L.L.C. The three walls appear to be properly constructed, however, we did not observe any drainage provisions. We have used the actual cost, which at the time, included some tree removal and engineering costs. These observations should be viewed in the context of capital reserve budget projections, and not as a structural analysis. Any questions regarding the safety or structural integrity of the walls should be referred to a professional engineer.
3.7	Pressure-Treated Wood Steps	1	LS	\$8,200.00	\$8,200	20	2023	100%	\$9,278	2043	100%	\$15,202				Pressure-treated wood steps with a handrail are constructed adjacent to the multi-purpose court and at other locations throughout the community. They appear to range from fair to generally continuing good condition. Any deteriorated or missing boards should be replaced to achieve a full service life of the steps.
3.8	Split-Rail Fencing	278	LF	\$13.00	\$3,614	15	2020	100%	\$3,797	2035	100%	\$5,499	2050	100%	\$7,964	Wood split-rail fencing is located between the townhomes off Golden Horseshoe Court and Grandstaff Court and at the entrance to the multi-purpose court. The majority of the fencing ranges from poor to fair condition. Split-rail fencing was previously installed above the retaining wall, however, it was removed. Fencing should be re-installed to prevent falls from above the wall. Preventative maintenance, as outlined in the Preventive Maintenance section of the report, will improve appearance and maximize the service life of fencing.
3.9	Tot Lot & Outdoor Furniture	2	EA	\$36,000.00	\$72,000	15	2019	100%	\$73,800	2034	100%	\$106,884	2049	100%	\$154,800	Two tot lots are located within the community. One tot lot is located on Giltinan Court and has a painted metal, six-post play module with climbing equipment, plastic slide, three swings, a spring-mounted horse, a spring-mounted motorcycle, a tic-tac-toe game, and two benches. Equipment ranges from poor to fair condition. The other tot lot is located at Golden Horseshoe Court and has 235' of six by six wood borders, a painted metal, 14-post play module with climbing equipment and two plastic slides, four swings, and two metal benches. The equipment in this tot lot was installed in 2006 and is in generally poor condition. The slides are cracked and two swings are damaged. Overall, the equipment in both tot lots is in deteriorated condition. Frequent, periodic safety checks of all components should be conducted to prevent personal injury. Replacement costs are based on replacement with U.S. Consumer Product Safety Commission (CPSC)-compliant play modules and was set by the Board.
3.10	Light Poles & Fixtures	3	EA	\$2,200.00	\$6,600	35	2023	100%	\$7,467	2058	100%	\$17,721				Street and area lighting along Golden Leaf Court are provided by 12-foot-high painted metal poles with carriage fixtures. These are the only Association-owned light fixtures. The remaining poles and fixtures are leased through Dominion Power and are not responsibility of the Association. We have adjusted the quantity with this update.
3.11	Tree Trimming, Removal, & Replacement Allowance	1	LS	\$5,000.00	\$5,000	1	2018	100%	\$5,000	2019	100%	\$5,125	2020	100%	\$5,253	The site has many mature, natural 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 to address tree removal, trimming, or replacement periodically throughout the study period, per request.
3.12	Storm Water Drainage System Allowance	1	LS	\$8,500.00	\$8,500	7	2018	100%	\$8,500	2025	100%	\$10,104	2032	100%	\$12,010	Storm water drainage is provided by concrete yard drains, curb drop inlets and underground structures. All observable components appear to range from fair to continuing good condition. Though storm water drainage systems are a long life component and catastrophic failure is not anticipated, it is prudent to plan for localized repairs and repairs to ancillary damage as the system ages. This category may also be used to address localized erosion issues. Some storm water run-off projects have been completed throughout the community in past years, facilitating large rip-rap stream beds. Some of these areas require repair. Additional significant erosion prone areas were observed, requiring eventual repair.
3.13	Timber Retaining Wall	160	SF	\$38.00	\$6,080	20	2028	100%	\$7,783	2048	100%	\$12,753				One pressure-treated wood retaining wall is constructed behind the townhomes at 7411 Golden Horseshoe Court. This wall is approximately 50' x 3' high and is in fair condition. Eventually, this wall should be replaced with modular block, as other walls are constructed.

## 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  
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**CALENDAR OF EXPENDITURES**

**TABLE 2**  
 2018 Through 2037



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2018	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
<b>2018</b>						<b>2018</b>
	1.1	Phase 1 Asphalt Restoration Project	\$147,636	\$147,636	<b>TOTAL EXPENDITURES</b>	
	1.4	Asphalt Repair Allowance	\$36,000	\$36,000		
	3.3	Multi-Purpose Court Restoration Project	\$21,000	\$21,000		
	3.5	Street and Informational Signage	\$1,860	\$1,860		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,000		
	3.12	Storm Water Drainage System Allowance	\$8,500	\$8,500		
						\$219,996
<b>2019</b>						<b>2019</b>
	1.2	Phase 2 Asphalt Restoration Project	\$160,650	\$164,666	<b>TOTAL EXPENDITURES</b>	
	3.2	Carved Wood Entrance Sign	\$3,500	\$3,588		
	3.9	Tot Lot & Outdoor Furniture	\$72,000	\$73,800		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,125		
					\$247,179	
<b>2020</b>						<b>2020</b>
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$3,152	<b>TOTAL EXPENDITURES</b>	
	3.8	Split-Rail Fencing	\$3,614	\$3,797		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,253		
					\$12,202	
<b>2021</b>						<b>2021</b>
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,384	<b>TOTAL EXPENDITURES</b>	
					\$5,384	
<b>2022</b>						<b>2022</b>
	2.1	Concrete Sidewalks & Steps	\$11,885	\$13,118	<b>TOTAL EXPENDITURES</b>	
	2.2	Concrete Curbs & Gutters	\$11,511	\$12,706		
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$3,311		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,519		
					\$34,655	
<b>2023</b>						<b>2023</b>
	3.7	Pressure-Treated Wood Steps	\$8,200	\$9,278	<b>TOTAL EXPENDITURES</b>	
	3.10	Light Poles & Fixtures	\$6,600	\$7,467		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,657		
					\$22,402	
<b>2024</b>						<b>2024</b>
	1.3	Asphalt Seal Coat	\$36,509	\$42,339	<b>TOTAL EXPENDITURES</b>	
	1.4	Asphalt Repair Allowance	\$9,000	\$10,437		
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$3,479		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,798		
					\$62,054	
<b>2025</b>						<b>2025</b>
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$5,943	<b>TOTAL EXPENDITURES</b>	
	3.12	Storm Water Drainage System Allowance	\$8,500	\$10,104		
					\$16,047	
<b>2026</b>						<b>2026</b>
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$3,655	<b>TOTAL EXPENDITURES</b>	
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$6,092		
					\$9,747	
<b>2027</b>						<b>2027</b>
	2.1	Concrete Sidewalks & Steps	\$11,885	\$14,842	<b>TOTAL EXPENDITURES</b>	
	2.2	Concrete Curbs & Gutters	\$11,511	\$14,376		
	3.1	Brick Entrance Monument	\$5,900	\$7,368		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$6,244		
					\$42,831	

Reserve Fund Plan for  
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**CALENDAR OF EXPENDITURES**

**TABLE 2**  
 2018 Through 2037



YEAR	COMPONENT NO.	COMPONENT	PRESENT COST 2018	FUTURE COST (INFLATED)	TOTAL ANNUAL EXPENDITURES	ACTION
1	2	3	4	5	6	7
2028					2028	
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$3,840	TOTAL EXPENDITURES	
	3.4	Basketball Goals	\$5,200	\$6,656		
	3.5	Street and Informational Signage	\$620	\$794		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$6,400		
	3.13	Timber Retaining Wall	\$6,080	\$7,783		
					\$25,474	
2029					2029	
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$6,560	TOTAL EXPENDITURES	
					\$6,560	
2030					2030	
	1.3	Asphalt Seal Coat	\$36,509	\$49,100	TOTAL EXPENDITURES	
	1.4	Asphalt Repair Allowance	\$18,000	\$24,208		
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$4,035		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$6,724		
					\$84,067	
2031					2031	
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$6,893	TOTAL EXPENDITURES	
					\$6,893	
2032					2032	
	2.1	Concrete Sidewalks & Steps	\$11,885	\$16,793	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$11,511	\$16,265		
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$4,239		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$7,065		
	3.12	Storm Water Drainage System Allowance	\$8,500	\$12,010		
					\$56,372	
2033					2033	
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$7,241	TOTAL EXPENDITURES	
					\$7,241	
2034					2034	
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$4,454	TOTAL EXPENDITURES	
	3.2	Carved Wood Entrance Sign	\$3,500	\$5,196		
	3.9	Tot Lot & Outdoor Furniture	\$72,000	\$106,884		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$7,423		
					\$123,956	
2035					2035	
	3.8	Split-Rail Fencing	\$3,614	\$5,499	TOTAL EXPENDITURES	
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$7,608		
					\$13,107	
2036					2036	
	1.1	Phase 1 Asphalt Restoration Project	\$147,636	\$230,262	TOTAL EXPENDITURES	
	1.4	Asphalt Repair Allowance	\$36,000	\$56,148		
	2.3	Sidewalk Saw-Cut Allowance	\$3,000	\$4,679		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$7,798		
					\$298,887	
2037					2037	
	1.2	Phase 2 Asphalt Restoration Project	\$160,650	\$256,823	TOTAL EXPENDITURES	
	2.1	Concrete Sidewalks & Steps	\$11,885	\$18,999		
	2.2	Concrete Curbs & Gutters	\$11,511	\$18,403		
	3.11	Tree Trimming, Removal, & Replacement Allowanc	\$5,000	\$7,993		
					\$302,218	

**CURRENT FUNDING ANALYSIS CASH FLOW METHOD**  
**TABLE 3.0 EXPLANATION**  
and, if applicable,  
**ALTERNATIVE FUNDING ANALYSIS CASH FLOW METHOD**  
**TABLE 3.1, 3.2, 3.3 (etc.) EXPLANATION**

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

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

A description of the columns in the table follows:

- Column 1    **Year**
- Column 2    **Total Asset Base** of all common capital assets included in the reserve fund with costs adjusted for inflation.
- Column 3    **Beginning Reserve Fund Balance** is the reserve fund balance after all activity in the prior year is completed.
- Column 4    **Annual Contribution**, on Table 3, is the amount contributed annually to the reserve fund as reported by the Board of Directors. On the Alternative Funding Analysis tables (3.1, 3.2, etc.), the annual contribution is projected to maintain positive balances throughout the study period.
- Column 5    **Interest Income**, which is indicated in the heading of the table, is applied to the reserve fund balance and is accrued monthly throughout each year after the yearly expenditures are deducted. The interest income percentage may be varied to reflect actual experience of the community investments.
- Column 6    **Capital Expenditures** are annual totals of expenditures for each year of the study period adjusted by the inflation percentage listed in the heading of the table.
- Column 7    **Ending Reserve Fund Balance** is the result of the beginning reserve fund balance plus the annual contribution, plus interest income, less capital expenditures for the year.

Reserve Fund Plan for  
LAKEWOOD HILLS #1 COMMUNITY  
ASSOCIATION  
Springfield, Virginia

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



Beginning Reserve Fund Balance: **427,666**      Annual Contribution To Reserves: **82,208**      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
2018	1,599,214	427,666	82,208	3,550	219,996	293,428
2019	1,639,195	293,428	84,263	2,065	247,179	132,576
2020	1,680,175	132,576	86,370	1,735	12,202	208,479
2021	1,722,179	208,479	88,529	2,546	5,384	294,170
2022	1,765,233	294,170	90,742	3,260	34,654	353,519
2023	1,809,364	353,519	93,011	3,935	22,402	428,063
2024	1,854,598	428,063	95,336	4,482	62,053	465,828
2025	1,900,963	465,828	97,719	5,124	16,047	552,624
2026	1,948,487	552,624	100,162	6,043	9,747	649,082
2027	1,997,200	649,082	102,667	6,846	42,830	715,765
2028	2,047,130	715,765	105,233	7,624	25,473	803,149
2029	2,098,308	803,149	107,864	8,619	6,560	913,072
2030	2,150,766	913,072	110,561	9,317	84,067	948,883
2031	2,204,535	948,883	113,325	10,111	6,893	1,065,425
2032	2,259,648	1,065,425	116,158	11,029	56,372	1,136,239
2033	2,316,139	1,136,239	119,062	12,022	7,241	1,260,082
2034	2,374,043	1,260,082	122,038	12,649	123,957	1,270,813
2035	2,433,394	1,270,813	125,089	13,375	13,107	1,396,170
2036	2,494,229	1,396,170	128,216	13,101	298,887	1,238,601
2037	2,556,584	1,238,601	131,422	11,517	302,218	1,079,322
<b>STUDY PERIOD TOTALS</b>			<b>2,099,975</b>	<b>148,950</b>	<b>1,597,269</b>	

Reserve Fund Plan for  
LAKEWOOD HILLS #1 COMMUNITY  
ASSOCIATION  
Springfield, Virginia

ALTERNATIVE FUNDING ANALYSIS  
CASH FLOW METHOD  
HYBRID APPROACH  
TABLE 3.1



Beginning Reserve Fund Balance: 427,666 Annual Contribution To Reserves: 82,208 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
2018	1,599,214	427,666	82,208	3,550	219,996	293,428
2019	1,639,195	293,428	57,801	1,921	247,179	105,970
2020	1,680,175	105,970	59,246	1,320	12,202	154,335
2021	1,722,179	154,335	60,727	1,851	5,384	211,529
2022	1,765,233	211,529	62,245	2,275	34,654	241,396
2023	1,809,364	241,396	63,801	2,650	22,402	285,445
2024	1,854,598	285,445	65,397	2,886	62,053	291,675
2025	1,900,963	291,675	67,031	3,207	16,047	345,867
2026	1,948,487	345,867	68,707	3,795	9,747	408,622
2027	1,997,200	408,622	70,425	4,255	42,830	440,472
2028	2,047,130	440,472	72,186	4,679	25,473	491,864
2029	2,098,308	491,864	73,990	5,308	6,560	564,602
2030	2,150,766	564,602	75,840	5,628	84,067	562,003
2031	2,204,535	562,003	77,736	6,031	6,893	638,876
2032	2,259,648	638,876	79,679	6,545	56,372	668,729
2033	2,316,139	668,729	81,671	7,122	7,241	750,282
2034	2,374,043	750,282	83,713	7,320	123,957	717,357
2035	2,433,394	717,357	85,806	7,602	13,107	797,658
2036	2,494,229	797,658	87,951	6,870	298,887	593,592
2037	2,556,584	593,592	90,150	4,813	302,218	386,337

STUDY PERIOD TOTALS

1,466,311 89,629 1,597,269

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.

Beginning Reserve Fund Balance:

In Dollars **427,666**

Component Number	COMPONENT	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
<b>1 ASPHALT COMPONENTS</b>																					
1.1	Phase 1 Asphalt Restoration Project	28,899	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	11,671	18,203	18,203
1.2	Phase 2 Asphalt Restoration Project	25,875	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	13,017	20,303
1.3	Asphalt Seal Coat	6,844	6,844	6,844	6,844	6,844	6,844	7,937	7,937	7,937	7,937	7,937	7,937	5,177	5,177	5,177	5,177	5,177	5,177	5,177	5,177
1.4	Asphalt Repair Allowance	3,894	1,687	1,687	1,687	1,687	1,687	3,913	3,913	3,913	3,913	3,913	3,913	9,076	9,076	9,076	9,076	9,076	9,076	2,631	2,631
<b>2 CONCRETET COMPONENTS</b>																					
2.1	Concrete Sidewalks & Steps	2,582	2,582	2,582	2,582	2,894	2,894	2,894	2,894	2,894	3,274	3,274	3,274	3,274	3,274	3,704	3,704	3,704	3,704	3,704	4,191
2.2	Concrete Curbs & Gutters	2,501	2,501	2,501	2,501	2,803	2,803	2,803	2,803	2,803	3,171	3,171	3,171	3,171	3,171	3,588	3,588	3,588	3,588	3,588	4,059
2.3	Sidewalk Saw-Cut Allowance	1,560	1,560	1,639	1,639	1,721	1,721	1,809	1,809	1,900	1,900	1,996	1,996	2,097	2,097	2,204	2,204	2,315	2,315	2,432	2,432
<b>3 SITE FEATURES</b>																					
3.1	Brick Entrance Monument	259	259	259	259	259	259	259	259	259	390	390	390	390	390	390	390	390	390	390	390
3.2	Carved Wood Entrance Sign	553	321	321	321	321	321	321	321	321	321	321	321	321	321	321	321	465	465	465	465
3.3	Multi-Purpose Court Restoration Project	4,193	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554	1,554
3.4	Basketball Goals	246	246	246	246	246	246	246	246	246	246	492	492	492	492	492	492	492	492	492	492
3.5	Street and Informational Signage	224	75	75	75	75	75	75	75	75	75	290	290	290	290	290	290	290	290	290	290
3.6	Modular Block Retaining Walls	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250	5,250
3.7	Pressure-Treated Wood Steps	563	563	563	563	563	686	686	686	686	686	686	686	686	686	686	686	686	686	686	686
3.8	Split-Rail Fencing	390	390	340	340	340	340	340	340	340	340	340	340	340	340	340	340	340	492	492	492
3.9	Tot Lot & Outdoor Furniture	11,542	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	6,602	9,562	9,562	9,562	9,562
3.10	Light Poles & Fixtures	752	752	752	752	752	423	423	423	423	423	423	423	423	423	423	423	423	423	423	423
3.11	Tree Trimming, Removal, & Replacement All	5,285	5,225	5,355	5,489	5,626	5,767	5,911	6,059	6,211	6,366	6,525	6,688	6,855	7,027	7,202	7,382	7,567	7,756	7,950	8,149
3.12	Storm Water Drainage System Allowance	1,954	1,393	1,393	1,393	1,393	1,393	1,393	1,656	1,656	1,656	1,656	1,656	1,656	1,656	1,968	1,968	1,968	1,968	1,968	1,968
3.13	Timber Retaining Wall	383	383	383	383	383	383	383	383	383	383	576	576	576	576	576	576	576	576	576	576
<b>ANNUAL COMPONENT CONTRIBUTION TOTALS</b>		<b>103,749</b>	<b>62,875</b>	<b>63,034</b>	<b>63,168</b>	<b>64,001</b>	<b>63,936</b>	<b>67,487</b>	<b>67,898</b>	<b>68,141</b>	<b>69,175</b>	<b>70,084</b>	<b>70,247</b>	<b>72,918</b>	<b>73,090</b>	<b>74,531</b>	<b>74,711</b>	<b>78,111</b>	<b>78,452</b>	<b>78,850</b>	<b>87,293</b>

COMPONENT METHOD SUMMARY	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037
BEGINNING RESERVE FUND BALANCE	427,666	316,279	135,494	188,030	248,046	280,232	324,929	333,994	389,569	452,247	483,511	533,360	602,787	598,090	670,692	695,994	770,862	733,184	806,321	594,813
PLUS ANNUAL COMPONENT CONTRIBUTION	103,749	62,875	63,034	63,168	64,001	63,936	67,487	67,898	68,141	69,175	70,084	70,247	72,918	73,090	74,531	74,711	78,111	78,452	78,850	87,293
CAPITAL EXPENDITURES	219,996	247,179	12,202	5,384	34,654	22,402	62,053	16,047	9,747	42,830	25,473	6,560	84,067	6,893	56,372	7,241	123,957	13,107	298,887	302,218
SUBTOTAL	311,419	131,975	186,326	245,814	277,393	321,766	330,363	385,845	447,963	478,592	528,122	597,047	591,638	664,287	688,851	763,464	725,016	798,529	586,284	379,888
PLUS INTEREST INCOME @ 1.00%	4,860	3,519	1,704	2,232	2,840	3,163	3,631	3,724	4,284	4,919	5,238	5,740	6,452	6,406	7,143	7,398	8,168	7,792	8,529	6,450
FULLY FUNDED RESERVE FUND BALANCE	316,279	135,494	188,030	248,046	280,232	324,929	333,994	389,569	452,247	483,511	533,360	602,787	598,090	670,692	695,994	770,862	733,184	806,321	594,813	386,337

PERCENT FUNDED FOR CURRENT CYCLE **97%**

TOTAL EXPENDITURES **1,597,269**

TOTAL CONTRIBUTIONS **1,451,751**

STUDY PERIOD TOTAL INTEREST **104,189**

AVERAGE ANNUAL CONTRIBUTION **72,588**

**FULLY FUNDED  
BALANCE GOAL**

**PHOTOGRAPHS  
WITH  
DESCRIPTIVE  
NARRATIVES**



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



**PHOTO #1**

The asphalt driveways and parking bays are in overall poor condition. A significant amount of deflection was observed, requiring near-term restoration.



**PHOTO #2**

Some longitudinal and transverse crack filling has been accomplished in past pavement maintenance cycles. Pavement maintenance should include seal coating.



**PHOTO #3**

Rubber speed humps were installed on some of the streets. The installation has failed here. We have provided for replacement humps in the asphalt restoration project. Replacement of the deteriorated concrete humps should also be accomplished.



**PHOTO #4**  
Major deflection such as this requires full-depth repairs prior to restoration, to prevent the problem areas from re-occurring a year or two after full restoration has been completed.



**PHOTO #5**  
Some sections of concrete sidewalk panels are cracked, requiring eventual replacement.



**PHOTO #6**  
Most of the sidewalk panels, which had height differentials were saw-cut to prevent tripping hazards.



**PHOTO #7**  
Concrete curb and gutters are in generally continuing good condition. However, some sections, such as this settlement at the storm drain should be repaired.



**PHOTO #8**  
The multi-purpose court has significant cracking with vegetation. These cracks can be a potential tripping hazard. The court should be restored near-term.



**PHOTO #9**  
The basketball goals are in fair to generally continuing good condition.



**PHOTO #10**  
The street signage ranges from poor to fair condition. Several posts are out of plumb.



**PHOTO #11**  
Most wood retaining walls were replaced with modular block walls in 2014. The walls appear to be in continuing good condition and a major improvement over the timber walls. However, no drainage provisions were observed. Walls of this height should have railings for safety.



**PHOTO #12**  
The wood steps and handrailings at the multi-purpose court are in fair to continuing good condition.



**PHOTO #13**  
The split-rail fencing ranges from poor to fair condition. This fencing should be re-installed along the new retaining wall.



**PHOTO #14**  
This swing should be removed from use immediately.



**PHOTO #15**  
Cracking was observed on one or two slides. This can cause a potential injury. The play equipment should be replaced near-term. All equipment should be evaluated annually to ensure safety.



**PHOTO #16**

The three street lights and poles along Golden Leaf Court are in fair to continuing good condition. Lighting was not observed after dark.



**PHOTO #17**

This storm water curb drop inlet along Golden Horseshoe Court has settled on one side and is only about 20% efficient. This inlet should be reset or replaced.



**PHOTO #18**

An erosion control project was completed at this location (at the end of Gutman Court) a few years ago. However, it requires additional work, as the end sidewalk panel is heavily undermined, and is being supported by a rock.