

(Final Report, Revised January 15, 2016)
**Condition Assessment
&
Reserve Fund Plan Update
2016
KINGS PARK WEST**

Fairfax, Virginia



Prepared for:
The Board of Directors
&
Summit Management Services, Inc.



MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.



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January 15, 2016

Ms. Jean Spangler, CMCA, Community Manager
Summit Management Services, Inc.
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Alexandria, Virginia 22309

RE: **CONDITION ASSESSMENT AND RESERVE FUND PLAN UPDATE 2016**
Park West Community Association/Kings Park West
(Final Report, Revised January 15, 2016)
Fairfax, Virginia
Project No. 7993

Dear Ms. Spangler:

Mason & Mason Capital Reserve Analysts, Inc. has completed the final report for Kings Park West.

We have revised the report to reflect changes the Board requested via email on December 28, 2015.

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



TABLE OF CONTENTS

TABLE OF CONTENTS	i
FOREWORD.....	ii
SUMMARY OF KEY ISSUES.....	iii
VISUAL EVALUATION METHODOLOGY	iv
1. INTRODUCTION	1
2. FINANCIAL ANALYSIS	4
3. METHODS OF FUNDING	5
4. RESERVE PROGRAMMING.....	6
5. UPDATING THE RESERVE FUND PLAN	8
6. PREVENTIVE MAINTENANCE.....	9
7. ASPHALT PAVEMENT REPORT	15

RESERVE FUND PLAN

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE	TABLE 1
CALENDAR OF EXPENDITURES	TABLE 2
CURRENT FUNDING ANALYSIS, CASH FLOW METHOD	TABLE 3
ALTERNATIVE FUNDING ANALYSIS, CASH FLOW METHOD	TABLE 3.1
FUNDING ANALYSIS, COMPONENT METHOD	TABLE 4
PHOTOGRAPHS	#1 - #15

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 Kings Park West'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 **84%** funded through 2015. **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:

- Step increase the annual contribution beginning in **2017** by **\$16,250** for **each of three years**, followed by annual adjustments of **2.10%** to reflect inflation.
- This represents a 2017 increase from **\$17.37** to **\$22.39** (a net increase of **\$5.02**) per residential unit, per month (based on **270** 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: Kings Park West is a 270-unit townhome community located on Braddock Road and Roberts Road in Fairfax, Virginia. Amenities include a pool facility, tot lot, multi-purpose court, and asphalt footpaths. Park West Community Association (PWCA) is the legal entity that represents the development and its common assets. The community was constructed circa 1980. Five private streets are the responsibility of PWCA, which include Carriage Park Court, Carriage Park Road, Gainsborough Drive, Malone Court, Treasure Court, and the pool parking area. The street layout includes concrete sidewalks, curbs and gutters, and 47 parking bays providing 568 spaces. Additional curb parallel parking is permitted in specific locations throughout the community.

We are providing the Condition Assessment and Reserve Fund Plan based on Proposal Acceptance Agreement No. 7993 dated August 14, 2015. 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 and the Board 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 Kings Park West in 2007 and a Level II Update in 2012. 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 November 11, 2015. We met with Mr. Mark Griffin, ACC Chairperson, to review the previous report, review new information, and took a tour of the property including the pool facility. The weather was clear and the temperature was approximately 63 degrees F. Precipitation had not occurred for several days prior to the site visit. The pavements, walkways, and grounds were generally dry, but covered with seasonal leaf foliage.

1.2 Principal Findings: The common assets appear to be in overall fair to good condition. The community is now reaching a 35-year benchmark in terms of replacement of major systems. The asphalt driveways and parking bays were last restored in 1998 and 1999. The streets and parking bays are reaching 18 years of service life with some pavement maintenance performed over the years. A typical amount of deflection was observed. The pavement is reaching the end of its service life. Restoration should include full-depth repair of all deflected asphalt, edgemilling, and overlay. The second option is to do full-width profile milling, which will be at a slightly higher cost than what we have used in the reserve fund plan.

Pavement maintenance, including full-depth repair of deflected pavement, proper crack filling, and seal coating should be completed every six years. Some work was completed on the footpaths, but we understand that some sections are ponding between the newer asphalt sections, which can freeze in the winter, causing potential slipping hazards. We have scheduled footpath repair of these areas to coincide with the street restoration near-term.

There is a significant quantity of cracked, settled and/or heaved concrete sidewalks, 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.

A concrete bridge was constructed near the tot lot area, which has improved drainage of the seasonal creek bed leading to the large detention pond. The Board plans to have an additional concrete bridge constructed on the path leading to the pool, as this drainage area is problematic. The concrete pool deck is in fair condition, with some cracking observed. We have scheduled repair of the pool deck near-term, which should include re-sealing the older, previously routed cracks.

Site features such as the entrance monuments, monument lighting, flagpole, light poles and fixtures, street signage, mailbox modules, message boards, wood fencing, metal handrailings, multi-purpose court, basketball goals, chain-link fencing, and the tot lot components range from fair to new condition. We were requested to include a Tree Trimming, Removal, and Replacement Allowance with this update. The budget and timing were established by the Board.

Pool building components including the wood trim, most doors, lighting and electrical, and the plumbing fixtures range from fair to continuing good condition. The shingle roofing and the water heater are nearing the end of their service lives, requiring near-term repair/replacement.

The pools were covered for the season, and we could not evaluate them, but we understand that there are no problems with either pool, and that they have received recent white coating and coping repair. Therefore, we have moved the pool restoration out by a few years. The pool fencing, perimeter equipment, covers, furniture, chlorinators, pumps, filters, storage sheds, kitchen equipment and tools range from fair to continuing good or serviceable condition.

Components new to this update include:

Concrete bridges, mailbox modules, tree trimming, removal, and replacement allowance, message boards, metal handrailings, basketball goals, chain-link fencing, kitchen appliances, and pool related tools.

Financially, the Association requires an increase in contributions to reserves. We have stepped the increases over three years to minimize the impact on individual homeowners, but have established a sufficient contribution schedule to achieve the fully funded goal by the end of the 20-year period.

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

Generally, our approach is to group appropriately related component replacement items into projects. This creates a more realistic model and allows a grouping time line that is more convenient to schedule and logical to accomplish. Please see the Table 1 Discussion, Column 18, and the Asphalt Pavement Report in Section 7, for specific information.

2. FINANCIAL ANALYSIS

We track the annual inflation rate among our clients based on their reported costs for typical services. 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**, is projected to be **\$550,000**. We have used a **2.10%** annual interest income factor and a **2.10%** 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 **\$2,465,902**.

2.2 Current Funding Analysis, Cash Flow Method (Table 3): The 2016 annual contribution to reserves has been set at **\$56,302 with a presumed 2.10% annual increase**. At this level, the total for all annual contributions for the twenty-year period would be **\$1,381,696**, and the total interest income is projected to be **\$42,494**. **This funding results in the depletion of the reserve fund by 2025.**

2.3 Alternative Funding Analysis, Cash Flow Method (Table 3.1): This stepped plan provides the annual contributions necessary to maintain balances more consistent with the **fully funded goal by increasing the annual contribution by \$16,250 beginning in 2017, for each of three years, followed by annual adjustments of 2.10%, matching inflation thereafter. This alternative allows for a gradual increase over time after the initial series of stepped increases and addresses generational equity issues.** The total for all annual contributions for the twenty-year period would be **\$2,337,519**, and the total interest income is projected to be **\$220,767**. **The approximate fully funded balance in 2035 is \$642,384.**

2.4 Funding Analysis, Component Method (Table 4): This method of funding would require variable annual contributions, averaging **\$112,194** over the twenty-year period. The total for all annual contributions would be **\$2,243,889**, and the total interest income is projected to be **\$317,944**. **The fully funded balance in 2035 is \$645,931.** 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 asphaltic concrete pavement. Seal coating is generally not scheduled for up to five years after an asphalt restoration project.

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

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

6.5 Asphalt Footpaths: Transverse and longitudinal cracks should be cleaned of debris and plant growth (lanced) and filled with a rubberized asphaltic compound to prevent water infiltration. Cracks and deflection of the asphalt pavement can develop in the areas where tree roots cross the path. Tree roots should be removed and damaged areas repaired. An additional maintenance issue with footpaths is vegetation control. In areas where vegetation encroaches on the paths, both underfoot and overhead, visibility is reduced and personal injury can occur from low-growing branches. Vegetation control should be accomplished on a regular basis under the maintenance budget for safety considerations and to extend the useful service life of the pavement.

6.6 Concrete Sidewalks: When sidewalks are cracked or scaled or sections have settled, the resulting differential or "tripping hazard" can present a liability problem for the Association if personal injury should occur as a result. Tripping hazards should be repaired expeditiously to promote safety and prevent liability problems for the community. Generally, where practical and appropriate, concrete element repairs and replacements are scheduled in the same years to promote cost efficiencies. Replacements are usually scheduled in cycles because the necessity of full replacement at one time is unlikely. Typically, damaged or differentially settled sections can be removed by saw cutting or jack hammer and re-cast. Concrete milling of the differential surfaces is sometimes an appropriate, cost-effective alternative to re-casting. Skim coating is not an effective repair for scaled or settled concrete surfaces and, over time, will usually worsen the problem.

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

6.8 Concrete 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.

6.9 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.

6.10 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

6.11 Light Poles: Outdoor lighting has a limited service life because of the accelerated aging process due to weather extremes. Remediation of the pole fixtures is a viable alternative to full replacement and would include painting the poles along with lamp housing replacement, including ballasts and capacitors. Any poles observed to be out of plumb should be straightened. Periodic cleaning of peeling paint and rust, priming and re-painting of poles and fixtures will help extend the useful service life.

6.12 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.

6.13 Tree Trimming, Removal, and Replacement: As communities age, trees, both native and planted, may become problematic if periodic care is not accomplished. Trees may become damaged by weather or disease, or they may outsize their location. Proper, diligent tree trimming may alleviate future problems with regard to damage to adjacent structures. Proper tree trimming also helps maintain a healthy tree and may reduce windage in inclement weather. Proper tree trimming should not be confused with the common practice of topping, which produces not only an unattractive tree, but also an unhealthy one due to weakening of the root structure. Tree root damage of asphalt footpaths and sidewalks is also a common problem. The best solution is re-routing the adjacent structure, if possible, to prevent future damage. If re-routing is not possible, tree roots causing the damage may be pruned back when replacement of the damaged component is accomplished. The practice of moderate mulching is beneficial for trees. However, repeated mulching against the tree trunk, year after year, without removal of the old mulch can eventually kill trees by trapping moisture against the bark, allowing fungi and insects to easily infiltrate the tree. Mulch should be placed around trees to the drip line, but should not be touching the bark.

6.14 Metal Handrailings: Metal handrailings should be periodically straightened, loose connections repaired, cleaned of rust, primed, and painted to maintain appearance and extend the useful service life. Bases should be periodically cleaned and sealed to prevent moisture infiltration, which will cause damage to the concrete in freeze/thaw cycles. Welding new bases to replace deteriorated bases is a viable alternative to replacing handrailings.

6.15 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.

6.16 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.

6.17 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.

6.18 Storm Water Retention Ponds: Vegetation control in ponds and on adjacent banks is required to prevent root damage to the earthen structures. Sedimentation problems can result in dredging requirements to maintain capacity of the pond in the long term. Pond sediment levels should be monitored to establish the rate over a multi-year period. The information would be helpful in determining future reserve funding for dredging if found to be necessary. Inflow and outflow structures should be periodically inspected for damage, leaks, or deterioration, and cleaned of debris to prevent clogging.

6.19 Composite Shingle Roofs: Roofs and attic spaces should be inspected annually for damage and leaks. During the attic inspection, check to make sure that mechanical ventilation systems, such as bathroom exhaust fans and dryer ducts, are routed through the roof and not discharging into the attic space. Loose or missing shingles should be replaced on a regular basis. Signs of deflected roof sheathing or discoloration of the sheathing are indicative of moisture problems and should be investigated. It is important to ensure that proper ventilation is occurring at the soffit vents and that insulation is not obstructing the airflow. If attic ventilation appears to be inadequate, the installation of ridge vents and/or through-the-roof mechanical vents is usually a cost-effective way of extending the useful service life of the sheathing. Roof penetrations, such as plumbing vents, are a major source of leaks. During the inspection, these areas should be checked carefully for signs of leakage or rotten sheathing. Gutters and downspouts should be inspected annually. Loose, damaged, or leaking sections should be secured, repaired, or replaced. All gutters should be kept clean of leaf material and debris. Clogged downspouts should be cleared. In areas where gutters collect fallen leaves, gutters should have screens installed. Downspouts should be directed away from buildings. Erosion can be minimized by the use of properly located splash blocks or plastic flexible tubing. In all cases, water should be directed away from building foundations. Splash blocks must be properly placed, and flexible plastic extensions require diligent maintenance.

6.20 Painted Wood Components: The service life of painted wood components depends greatly on the type of wood used, the initial installation method, level of exposure to the elements, and preventative maintenance practices during its service life. Kiln dried trim pieces should be primed on all surfaces prior to installation. Re-painting projects should be performed every four years or as needed. Loose and flaking paint should be thoroughly removed and deteriorated trim pieces replaced with primed trim pieces prior to repainting projects.

6.21 Painted Metal Doors: Painted metal doors should be periodically cleaned of rust and peeling paint, primed, and re-painted. Damaged or deteriorated hardware should be replaced to prevent damage to the door.

6.22 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.

6.23 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.

6.24 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.

6.25 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.

6.26 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.

7. ASPHALT PAVEMENT REPORT

Street Name	Total SY Asphalt Pavement	SY Full-Depth Repairs	Linear Footage Cracks	Parking Spaces	Parking Bays
Pool Parking Lot	600	26	20	13	3
Carriage Park Court	2,700	11	100	56	5
Carriage Park Road	9,200	65	195	198	14
Gainsborough Drive	6,300	308	1,390	153	13
Malone Court	3,300	80	363	93	6
Treasure Court	2,600	133	273	55	6
TOTALS	24,700	623	2,341	568	47

All quantities approximate

COMPONENT DATA AND ASSET REPLACEMENT SCHEDULE TABLE 1 EXPLANATION

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

- Column 1 **Component No.** is consistent throughout all tables.
- Column 2 **Component** is a brief description of the component.
- Column 3 **Quantity** of the component studied, which may be an exact number, a rough estimate, or simply a (1) if the expenditure forecast is a lump sum allowance for replacement of an unquantified component.
- Column 4 **Unit of Measurement** used to quantify the component: SY = Square Yards
 SF = Square Feet
 LF = Linear Feet
 EA = Each
 LS = Lump Sum
 PR = Pair
 CY = Cubic Yards
- Column 5 **Unit Cost** used to calculate the required expenditure. This unit cost includes removal of existing components and installation of new components, including materials, labor, and overhead and profit for the contractor.
- Column 6 **Total Asset Base** is the total value of common assets included in the study in current dollars. In addition to capital assets, this figure includes one cycle of maintenance liability.
- Column 7 **Typical Service Life (Yrs) or Cycle** is the typical life expectancy of similar components in average conditions or the length of years between replacement cycles, and does not necessarily reflect the conditions observed during the field evaluation. This number is furnished for reference and is not necessarily computed in the system.
- Column 8 **1st Cycle Year** is the scheduled year of the first projected replacement or repair.
- Column 9 **Percentage of Replacement** is the percentage of component value to be replaced in the first replacement cycle.
- Column 10 **Cost for 1st Cycle** is the future cost (with inflation) of the replacement. It is the product of Column 6 times Column 9 in future dollars.
- Column 11 **2nd Cycle Year** is the scheduled year of the second projected replacement or repair. If a second cycle is not listed, it is because the first cycle is beyond the end of the study.
- Column 12 **Percentage of Replacement** is the percentage of component value to be replaced in the second replacement cycle. This can vary from the percentage of the first cycle for various reasons, such as the increased age of a component may require a larger amount of repair.
- Columns 13 **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
KINGS PARK WEST
Fairfax, Virginia

COMPONENT DATA AND
ASSET REPLACEMENT SCHEDULE
TABLE 1
2016 Through 2035



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
1 ASPHALT COMPONENTS																
1.1	Asphalt Restoration Project	24,700	SY	\$12.00	\$296,400	18	2017	100%	\$302,624	2035	100%	\$439,914	2053	100%	\$639,485	This component includes the asphalt driveways and parking bays of the community. Neither the depth nor the sub-base of the pavement could be visually determined. The asphalt appears to range from poor to fair condition. We understand the pavement was restored circa 1998 and 1999. Significant areas of deflected cracking (indicative of sub-base damage or insufficient asphalt depth) were observed on the driveways or parking bays. The pavement is reaching the end of its service life, requiring near-term restoration. Restoration includes edgemoiling and overlay with 1-1/2" 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	24,700	SY	\$1.20	\$29,640	6	2023	100%	\$34,281	2029	100%	\$38,834	2041	100%	\$49,834	The pavement does not appear to have been seal coated since circa 2007. 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.
1.3	Asphalt Repair Allowance	1	LS	\$28,000.00	\$28,000	6	2017	100%	\$28,588	2023	25%	\$8,096	2029	50%	\$18,343	Approximately 623 square yards of deflected pavement (indicative of sub-base damage), and about 2,341 linear feet of non-filled longitudinal or transverse cracking were observed. Repairs are essential in order to achieve the projected remaining service life of the pavement. Full-depth repairs and crack filling are scheduled every six years throughout the study period, including the year of the asphalt restoration project. See the Asphalt Pavement Report, Section 7, for additional details.
1.4	Asphalt Footpaths	416	SY	\$36.00	\$14,976	15	2017	50%	\$7,645	2035	100%	\$22,227	2050	100%	\$30,358	Asphalt footpaths 3', 4', or 6' in width provide access between sections of the community. The footpaths range from like-new to fair condition. There are sections of newer asphalt mainly near the pool fencing. Ponding issues between the new sections at the old asphalt have been reported to us. We have scheduled for replacement of areas that pose hazards, such as ponding or tripping hazards. These should be replaced as soon as practicable to prevent personal injury. The footpath restoration project is scheduled to coincide with other asphalt projects to promote cost efficiencies.
2 CONCRETE COMPONENTS																
2.1	Concrete Sidewalks	44,750	SF	\$11.50	\$514,625	5	2016	4%	\$20,585	2021	3%	\$17,129	2026	3%	\$19,005	Concrete sidewalks throughout the community are either 4', 5', or 6' wide. Their thickness could not be visually determined. They range from continuing good to poor condition. About 1,450 square feet (3.2% of the total area) is either cracked, settled or heaved between sections. We have not scheduled replacement of all sections with lesser surface defects. This quantity includes the mailbox concrete pads. 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	14,032	LF	\$36.00	\$505,152	5	2016	2%	\$10,103	2021	2%	\$11,209	2026	2%	\$12,437	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 less than 1% of the length exhibiting transverse cracks or settlement. We observed approximately seven damaged sections, which should be replaced. Minor chips usually do not justify replacement. Curb paint is in continuing good condition and curbs can be repainted under the operations budget. 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. 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.
2.3	Concrete Steps	272	LF	\$85.00	\$23,120	5	2016	25%	\$5,780	2021	25%	\$6,413	2026	25%	\$7,115	Cast-in-place concrete steps are constructed at many locations within the community providing access at grade differentials. These appear to be in generally good condition. A few steps, mainly near the tot lot, are cracked or settled, requiring near-term repairs. 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. Any trip hazards or hazardous surface deficiencies should be addressed as soon as practicable to prevent personal injury.
2.4	Concrete Bridges	2	EA	\$8,787.00	\$17,574	40	2016	50%	\$8,787	2052	50%	\$18,568				A 15' cast in place concrete bridge was installed circa 2012 at the streambed crossing near the tot lot. The concrete is about two feet in depth with a cast in place tunnel about six feet in width, to allow proper water flow. Metal handrailings are installed on each side, which are addressed in Component 3.10 below. We understand that the existing lower footpath stream crossing, leading to the pool will be removed and a concrete bridge of similar construction will be installed near-term and is being included in this component. Pricing was provided by the Board.
2.5	Concrete Pool Deck	8,870	SF	\$12.50	\$110,875	10	2016	20%	\$22,175	2026	20%	\$27,297	2036	20%	\$33,603	The pool deck is cast-in-place concrete on grade and is generally in continuing good condition. About 196 linear feet of minor cracks in the deck and some newer concrete sections were observed, but we did not see signs of extensive settlement. Cracks should be routed and sealed to prevent water infiltration into the pool deck. The older crack sealant has shrunk, requiring removal and re-sealing. 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 trip hazards or hazardous surface deficiencies should be addressed as soon as practicable to prevent personal injury.
3 SITE FEATURES																
3.1	Entrance Monuments	1	LS	\$42,000.00	\$42,000	50	2030	100%	\$56,184	2080	100%	\$158,817				A brick or block and mortar monument is constructed at each entrance to the community. The Braddock Road monument walls are solid brick with double rowlock copings. The embedded cast stone sign is in continuing good condition. The end bollards have a cast stone cap, and the taller bollards have a double cast stone cap with pineapple finials. The walls are in generally good condition with no extensive deterioration or damage observed. The Roberts Road monument is constructed of mortared concrete block with brick veneer with rowlock coping and two square bollards at each end. It was constructed circa 2002. The monument wall has a community name sign embedded. All brick and mortar appear to be in continuing good condition with no deteriorated mortar, cracked mortar or brick, or spalled brick faces observed. With periodic, diligent maintenance performed under the operations budget, the monuments should achieve a long service life.

Reserve Fund Plan for
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Fairfax, Virginia

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2016 Through 2035



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3.2	Entrance Monument Lighting	1	EA	\$1,200.00	\$1,200	10	2021	100%	\$1,331	2031	100%	\$1,639	2041	100%	\$2,018	One large L.E.D. fixture inside a metal cage provides illumination to the entrance monument at Braddock Road. The light fixture appears to have been recently replaced. Landscape lighting generally has a short service life due to the proximity to ground and moisture and damage from landscaping practices.
3.3	Entrance Flagpole	1	EA	\$2,050.00	\$2,050	30	2022	100%	\$2,322	2052	100%	\$4,332				An aluminum flagpole approximately 20' high is installed at the entrance monument at Braddock Road. We understand that it was installed circa 2002, and it is in continuing good condition.
3.4	Light Poles & Fixtures	35	EA	\$3,300.00	\$115,500	35	2023	100%	\$133,586	2058	100%	\$276,480				32 concrete light poles, one fiberglass pole, and two aluminum poles, generally 12' to 15' high, with carriage lantern fixtures provide illumination for the streets and common areas. They appear to be in generally continuing good to fair condition. A couple of poles were observed to be out of plumb and should be straightened and secured. We understand that all of the fixtures were changed to L.E.D. and that a couple of poles were re-wired in recent years. The fixtures were not observed illuminated. No current problems were reported with lighting.
3.5	Street Signage Allowance	27	EA	\$859.40	\$23,204	25	2040	100%	\$38,210	2065	100%	\$64,242				27 custom signs and posts were installed throughout the community by Address of Distinction circa 2015. These custom posts are painted black and appear to be well constructed and in new condition. We have extended the service life by a few years, due to the high quality signs and posts replacing the old signage. The actual cost was provided by the Board. A VDOT agreement is in place for the two stop signs at Braddock Road and Roberts Road entrances.
3.6	Mailbox Modules	21	EA	\$1,667.00	\$35,007	30	2016	100%	\$35,007	2046	100%	\$65,302				21 metal mailbox modules are installed throughout the community. Units range from fair to continuing good condition. We understand that some units have problems with individual doors not operating as they should. The Board plans to replace all units near-term. Cost and timing was provided by the Board.
3.7	Tree Trimming, Removal, & Replacement Allowance	1	LS	\$17,000.00	\$17,000	1	2016	100%	\$17,000	2017	100%	\$17,357	2018	100%	\$17,721	Due to the age of the property, the site has many mature trees. 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. The Board requested that we include a budget amount to address tree removal, trimming, or replacement periodically throughout the study period. This amount was established by the Board, based on past, current, and future tree work.
3.8	Message Boards	2	EA	\$1,969.00	\$3,938	10	2025	100%	\$4,748	2035	100%	\$5,845	2045	100%	\$7,195	Two community message boards were installed circa 2015. These signs are constructed from two metal poles, mounted on concrete piers, with a glass enclosure. They are in new condition. Their cost and future timing replacement was established by the Board.
3.9	Wood Fencing & Railings	1	LS	\$1,800.00	\$1,800	20	2018	100%	\$1,876	2038	100%	\$2,843				This category includes approximately 64' of three-board fencing mounted on 6" by 6" posts adjacent to a footpath near the storm water management site. The three-board fencing appears to have been in service for many years, but most horizontal timbers have been recently replaced and the tops of the posts have been refurbished. Although the fencing appears to be sound, the post condition could not be verified. The community may save money by re-using the newer horizontal timbers, but replacing the posts. The wood railings along the lower storm water creek crossing will be removed and replaced by metal railings near-term.
3.10	Metal Handrailings	85	LF	\$78.00	\$6,630	40	2016	25%	\$1,658	2026	25%	\$2,040	2036	25%	\$2,512	This category includes the metal handrailings constructed at various locations (about seven total) throughout the community. Some rust and peeling paint was observed on the handrailings and at least one base was deteriorated. This category includes the railings installed at the existing upper creek crossing and the future lower creek crossing. With proper, diligent maintenance, including cleaning of peeling paint, priming, and painting, sealing bases, and repairing deteriorated areas by welding replacement parts, handrailings may provide long service life.
3.11	Multi-Purpose Court	1	LS	\$6,000.00	\$6,000	20	2026	100%	\$7,386	2046	100%	\$11,192				One multi-purpose court is located adjacent to the tot lot at the center of the community. The court appears to be in continuing good condition having been overlaid circa 2006. No major cracking or settlement was observed. Striping is in generally poor condition and should be replaced periodically under the operations budget. Due to the proximity of the tot lot, a significant amount of rubber mulch was observed on the court surface, which may be a potential tripping (or slipping) hazard.
3.12	Basketball Goals	2	EA	\$3,000.00	\$6,000	20	2032	100%	\$8,367	2052	100%	\$12,679				Two Goalsetter basketball goals are installed at each end of the multi-purpose court. These goals are height adjustable, although setting the height was unclear. We understand the goals were installed circa 2012. They appear to be well constructed and are in continuing good condition.
3.13	Chain Link Fencing	21	LF	\$46.00	\$966	30	2042	100%	\$1,658							A 21' by 8' high galvanized chain-link fencing section is installed at one end of the multi-purpose court. The fencing is provided to prevent balls from dropping to the creek bed below. The fencing is in continuing good condition. We are using higher than standard chain-link pricing, due to the small quantity of fencing.
3.14	Tot Lot & Outdoor Furniture Allowance	1	LS	\$43,000.00	\$43,000	15	2018	100%	\$44,825	2033	100%	\$61,222	2048	100%	\$83,617	Tot lot equipment includes a painted metal post swing set, vinyl coated metal benches and trash receptacle, interlocking molded plastic border, and a 14-post, painted metal play module with vinyl coated metal steps and platforms, plastic slides, climbing wall, and play equipment, and painted metal railings and climbing equipment. The module was manufactured by GameTime, A Playcore Company. All equipment appears to have been in service for many years, but ranges from fair to continuing good condition. We understand that this equipment was re-located to its present location circa 2000. The rubber coating on the play module is shrinking, which is exposing the metal steps. A few of the steps are beginning to rust. Rubber mulch replaced the wood mulch circa 2014 at a cost of \$12,020, which is included in the total cost of replacement. 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.
3.15	Storm Water Drainage System Allowance	1	LS	\$20,000.00	\$20,000	3	2016	30%	\$6,000	2017	30%	\$6,126	2018	30%	\$6,255	Storm water drainage is provided by concrete yard drains, curb drop inlets, and underground structures, leading storm water offsite. Two storm water detention ponds are located within the community boundaries and one pond has a square concrete and metal drainage riser. The main pond was serviced by Fairfax county in December 2014. The vegetation and debris should be kept clear in both ponds. We understand that responsibility for some or parts of the system may rest with local government. Though storm water drainage systems are a long life component and catastrophic failure is not anticipated, it is prudent for the community to plan for localized repairs and repairs to ancillary damage, even if a public entity has primary responsibility. This category may also be used to address localized erosion issues, of which a considerable amount was observed. Management requested the allowance contribution and the frequency for the community. This line item addresses potential storm water collection, drainage, and erosion issues throughout the study period and does not represent a single expense or action already identified as necessary.

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4 POOL BUILDING																
4.1	Re-Roofing Project	1,400	SF	\$4.75	\$6,650	20	2017	100%	\$6,790	2037	100%	\$10,289				The 4/12 pitched roof of the pool building has asphalt shingle coverings. Ventilation is provided by soffit vents and a gable vents. It appears that it is an older second cycle replacement. Shingles appear to be in generally poor condition, reaching the end of their service life, with a few missing shingles observed. Pre-finished aluminum gutters and downspouts are installed at all proper roof terminations. Re-roofing projects include replacement of shingles and deteriorated sheathing, flashing, felt, and gutters and downspouts. Maintenance repairs should be handled under operations. We suggest that the 3-tab shingles be replaced with architectural grade shingles as they should provide a longer service life.
4.2	Wood Trim & Louvers Allowance	1	LS	\$5,200.00	\$5,200	4	2019	50%	\$2,767	2021	75%	\$4,327	2027	25%	\$1,634	Painted wood trim occurs at louvers, doors, and soffits. It appears that a recent wood trim and painting project has improved the building appearance, as it is in continuing good condition. Replacements are scheduled at four-year intervals to coincide with repainting projects. Maintenance, such as painting, should be completed under operations, but wood replacement is under reserves.
4.3	Door Allowance	12	EA	\$975.00	\$11,700	30	2017	25%	\$2,986	2027	25%	\$3,676	2037	25%	\$4,525	This category includes all doors of the community center building. The doors appear to have been re-painted many times, and peeling, cracked paint was observed. Additionally, several steel door frames were observed to be severely rusted, and may require eventual replacement. Doors in a wet or chlorine environment generally have a shorter than average service life. We have budgeted an allowance to address replacement of damaged or deteriorated doors throughout the study period.
4.4	Lighting & Electrical Allowance	1	LS	\$14,500.00	\$14,500	30	2021	50%	\$8,044	2036	50%	\$10,986	2051	50%	\$15,005	This category includes an approximately 15' high galvanized pole with two large security fixtures, two similar fixtures mounted on the building, and two building-mounted double floodlight fixtures. We have included an allowance for interior light fixtures and electrical service panels. We understand that all exterior building mounted lighting was recently replaced. One exterior fixture was missing.
4.5	Plumbing Modernization Allowance	1	LS	\$19,300.00	\$19,300	30	2021	100%	\$21,413	2051	100%	\$39,945				This category consists of sinks, commodes, urinals, showers, and partitions of the shower rooms. All components appear to range from fair to continuing good condition. This category also includes the domestic water distribution system and portions of the sanitary and storm sewer system. Although presently appearing to be in continuing good condition with no reports of significant corrosion or leakage, replacement of plumbing risers and deteriorated portions of the waste and vent piping system should be anticipated.
4.6	Water Heater Allowance	1	EA	\$4,200.00	\$4,200	20	2017	100%	\$4,288	2037	100%	\$6,498				A State commercial gas-fired water heater provides the domestic hot water to the shower rooms. Water heater details were not able to be gathered due to severe corrosion, and label placement. The water heater appears to be in fair condition and will require replacement due to high levels of rust likely due to its proximity to the pool chlorination system. We suggest that the water heater be re-located when replaced, which would help extend its service life.
5 POOL FACILITY																
5.1	Pool Restoration Project	2,900	SF	\$52.00	\$150,800	40	2025	100%	\$181,816	2065	100%	\$417,506				The swimming pools are in-ground, cast-in-place concrete structures constructed on a cut and fill site. The large pool is 2,727 square feet and the wading pool is 173 square feet. Pool sizes were taken from the Fairfax County spec sheet in the pump room. Most outdoor pools of this type, in this area, require a major renovation between twenty to thirty years. The restoration might include beam re-construction, plumbing replacement/remediation, removal and replacement of the white coat, waterline tiles, coping, and sealants. No problems were reported or observed, therefore we are extending the pool restoration project out by a few years. This project should also include ADA upgrades and modified, dual-drain systems for safety.
5.2	Pool White Coat	2,900	SF	\$5.50	\$15,950	7	2022	100%	\$18,068	2032	100%	\$22,242	2039	100%	\$25,725	The Board reported a white coating project was completed circa 2015. We could not verify the pool condition, as it was covered for the season. 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 five to seven years.
5.3	Pool Coping	258	LF	\$34.00	\$8,772	3	2019	5%	\$467	2022	5%	\$497	2028	5%	\$563	We could not observe the tiles, as the pools were covered for the season. However, we understand that the coping and sealant were replaced circa 2015. We have scheduled an allowance throughout the study period to address replacements of cracked, loose, or "hollow" tiles. The soft sealant between the coping and the pool deck should have diligent maintenance to prevent water infiltration behind the pool shell, which, if not controlled, will cause freeze/thaw damage.
5.4	Pool Fencing	460	LF	\$55.75	\$25,645	30	2043	100%	\$44,947							423 linear feet of six-foot-high, aluminum fencing is constructed at the perimeter of the swimming pool deck. Approximately 37 linear feet of four-foot-high fencing separates the wading pool from the main pool. The fencing is in continuing good condition, having been replaced circa May of 2013. Cost was provided by the Board.
5.5	Pool Perimeter Equipment Allowance	1	LS	\$9,200.00	\$9,200	30	2025	100%	\$11,092	2055	100%	\$20,691				The observed pool perimeter equipment consists of two fixed lifeguard stands, the base of a diving board, and two stainless steel ladders. The components appear to be in serviceable condition. We understand that the diving board was replaced circa 2001. We have scheduled replacement coinciding with the pool restoration project.
5.6	Pool Covers	2,900	SF	\$1.60	\$4,640	15	2019	100%	\$4,939	2034	100%	\$6,745	2049	100%	\$9,212	Both pools have covers and hardware, used during the off season. We understand that the covers were purchased circa 2002. The covers are in generally fair to continuing good condition and have some small tears in the fabric, and missing spring tensioners, which should be repaired to extend the service life.
5.7	Pool Furniture Allowance	1	LS	\$12,000.00	\$12,000	10	2016	10%	\$1,200	2017	10%	\$1,225	2018	10%	\$1,251	This category provides an allowance for partial replacements of pool chairs, lounges, tables, and umbrellas. No major deficiencies were observed. We have budgeted an allowance throughout the study period to replace a percentage of the furniture as necessary. We understand that most furniture was replaced circa 2012. Re-webbing of damaged pieces periodically may extend the service life of the entire set of furniture. The Board requested the cost and timing for future replacements.
5.8	Pool Chlorinators	2	EA	\$650.00	\$1,300	10	2021	100%	\$1,442	2031	100%	\$1,776	2041	100%	\$2,186	Chlorination system consists of a Flex-Flow unit and a Intertek unit. The equipment appears to be in fair to continuing good condition.

Reserve Fund Plan for
KINGS PARK WEST
Fairfax, Virginia

COMPONENT DATA AND
ASSET REPLACEMENT SCHEDULE
TABLE 1
2016 Through 2035

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
5.9	Main Pool Pump	1	LS	\$3,800.00	\$3,800	10	2018	100%	\$3,961	2028	100%	\$4,876	2038	100%	\$6,003	This category provides an allowance for the main pool pump and strainer assembly. A 7.5 H.P. Marathon Electric pump (Model 9VN213TCDW7002AAL) serves the main pool. Some exterior corrosion was observed on the pump and strainer assembly, but the system appears to be serviceable condition. Equipment was decommissioned for the season.
5.10	Main Pool Filters	3	EA	\$2,700.00	\$8,100	15	2019	75%	\$6,466	2026	25%	\$2,493	2034	75%	\$8,831	The main pool is filtered by a Triton II, TR-140C, permanent media filter with a manufacture date stamp of 2004. The second filter, a Triton II, TR-140C was replaced in recent years with a date stamp of 2011. A third filter, also a Triton II TR-140C also had a date stamp of 2004. The equipment appears to be in continuing good condition and is scheduled for replacement after a typical service life. The equipment was decommissioned for the season.
5.11	Wading Pool Pump & Filter	1	LS	\$2,300.00	\$2,300	10	2025	100%	\$2,773	2035	100%	\$3,414	2045	100%	\$4,202	This category provides an allowance for the wading pool pump and strainer assembly and the filter system. A 3/4 H.P Pentair pump (part# 342233) serves the wading pool and was recently installed. The Triton II sand filter has a 2000 date stamp on it. The pump and filter assembly appear to be in serviceable condition. The equipment was decommissioned for the season.
5.12	Pool Storage Sheds	2	EA	\$3,450.00	\$6,900	20	2026	50%	\$4,247	2036	50%	\$5,228	2046	50%	\$6,436	An approximately 8' by 8' molded plastic storage shed is installed circa 2005 at the rear of the pool deck. It appears to be in continuing good condition. A 6' by 6' additional plastic shed was installed circa 2014. Both sheds are scheduled for replacement after a statistical service life.
5.13	Pool Kitchen & Tools	1	LS	\$3,000.00	\$3,000	20	2020	50%	\$1,630	2030	50%	\$2,007	2040	50%	\$2,470	This category is for replacement of the pool building refrigerator, a microwave, outdoor grill, and a leaf blower. All equipment was reported to be in serviceable condition.

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
KINGS PARK WEST
 Fairfax, 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	\$20,585	\$20,585	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$10,103	\$10,103		
	2.3	Concrete Steps	\$5,780	\$5,780		
	2.4	Concrete Bridges	\$8,787	\$8,787		
	2.5	Concrete Pool Deck	\$22,175	\$22,175		
	3.6	Mailbox Modules	\$35,007	\$35,007		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$17,000		
	3.10	Metal Handrailings	\$1,658	\$1,658		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,000		
	5.7	Pool Furniture Allowance	\$1,200	\$1,200		
						\$128,295
2017						2017
	1.1	Asphalt Restoration Project	\$296,400	\$302,624	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	\$28,000	\$28,588		
	1.4	Asphalt Footpaths	\$7,488	\$7,645		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$17,357		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,126		
	4.1	Re-Roofing Project	\$6,650	\$6,790		
	4.3	Door Allowance	\$2,925	\$2,986		
	4.6	Water Heater Allowance	\$4,200	\$4,288		
	5.7	Pool Furniture Allowance	\$1,200	\$1,225		
						\$377,630
2018						2018
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$17,721	TOTAL EXPENDITURES	
	3.9	Wood Fencing & Railings	\$1,800	\$1,876		
	3.14	Tot Lot & Outdoor Furniture Allowance	\$43,000	\$44,825		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,255		
	5.7	Pool Furniture Allowance	\$1,200	\$1,251		
	5.9	Main Pool Pump	\$3,800	\$3,961		
						\$75,890
2019						2019
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$18,094	TOTAL EXPENDITURES	
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,386		
	4.2	Wood Trim & Louvers Allowance	\$2,600	\$2,767		
	5.3	Pool Coping	\$439	\$467		
	5.6	Pool Covers	\$4,640	\$4,939		
	5.7	Pool Furniture Allowance	\$1,200	\$1,277		
	5.10	Main Pool Filters	\$6,075	\$6,466		
						\$40,395
2020						2020
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$18,474	TOTAL EXPENDITURES	
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,520		
	5.7	Pool Furniture Allowance	\$1,200	\$1,304		
	5.13	Pool Kitchen & Tools	\$1,500	\$1,630		
						\$27,928
2021						2021
	2.1	Concrete Sidewalks	\$15,439	\$17,129	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$10,103	\$11,209		
	2.3	Concrete Steps	\$5,780	\$6,413		
	3.2	Entrance Monument Lighting	\$1,200	\$1,331		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$18,862		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,657		
	4.2	Wood Trim & Louvers Allowance	\$3,900	\$4,327		
	4.4	Lighting & Electrical Allowance	\$7,250	\$8,044		
	4.5	Plumbing Modernization Allowance	\$19,300	\$21,413		

Reserve Fund Plan for
KINGS PARK WEST
 Fairfax, 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
	5.7	Pool Furniture Allowance	\$1,200	\$1,331		
	5.8	Pool Chlorinators	\$1,300	\$1,442		
					\$98,160	
2022					2022	
	3.3	Entrance Flagpole	\$2,050	\$2,322	TOTAL EXPENDITURES	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$19,258		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,797		
	5.2	Pool White Coat	\$15,950	\$18,068		
	5.3	Pool Coping	\$439	\$497		
	5.7	Pool Furniture Allowance	\$1,200	\$1,359		
					\$48,301	
2023					2023	
	1.2	Asphalt Seal Coat	\$29,640	\$34,281	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	\$7,000	\$8,096		
	3.4	Light Poles & Fixtures	\$115,500	\$133,586		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$19,662		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$6,940		
	5.7	Pool Furniture Allowance	\$1,200	\$1,388		
					\$203,953	
2024					2024	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$20,075	TOTAL EXPENDITURES	
	3.15	Storm Water Drainage System Allowance	\$6,000	\$7,085		
	5.7	Pool Furniture Allowance	\$1,200	\$1,417		
					\$28,577	
2025					2025	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$20,497	TOTAL EXPENDITURES	
	3.8	Message Boards	\$3,938	\$4,748		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$7,234		
	5.1	Pool Restoration Project	\$150,800	\$181,816		
	5.5	Pool Perimeter Equipment Allowance	\$9,200	\$11,092		
	5.7	Pool Furniture Allowance	\$1,200	\$1,447		
	5.11	Wading Pool Pump & Filter	\$2,300	\$2,773		
					\$229,607	
2026					2026	
	2.1	Concrete Sidewalks	\$15,439	\$19,005	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$10,103	\$12,437		
	2.3	Concrete Steps	\$5,780	\$7,115		
	2.5	Concrete Pool Deck	\$22,175	\$27,297		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$20,927		
	3.10	Metal Handrailings	\$1,658	\$2,040		
	3.11	Multi-Purpose Court	\$6,000	\$7,386		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$7,386		
	5.7	Pool Furniture Allowance	\$1,200	\$1,477		
	5.10	Main Pool Filters	\$2,025	\$2,493		
	5.12	Pool Storage Sheds	\$3,450	\$4,247		
					\$111,811	
2027					2027	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$21,366	TOTAL EXPENDITURES	
	3.15	Storm Water Drainage System Allowance	\$6,000	\$7,541		
	4.2	Wood Trim & Louvers Allowance	\$1,300	\$1,634		
	4.3	Door Allowance	\$2,925	\$3,676		
	5.7	Pool Furniture Allowance	\$1,200	\$1,508		
					\$35,726	
2028					2028	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$21,815	TOTAL EXPENDITURES	
	3.15	Storm Water Drainage System Allowance	\$6,000	\$7,699		

Reserve Fund Plan for
KINGS PARK WEST
 Fairfax, 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
	5.3	Pool Coping	\$439	\$563		
	5.7	Pool Furniture Allowance	\$1,200	\$1,540		
	5.9	Main Pool Pump	\$3,800	\$4,876		
					\$36,494	
2029					2029	
	1.2	Asphalt Seal Coat	\$29,640	\$38,834	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	\$14,000	\$18,343		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$22,273		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$7,861		
	5.7	Pool Furniture Allowance	\$1,200	\$1,572		
					\$88,883	
2030					2030	
	3.1	Entrance Monuments	\$42,000	\$56,184	TOTAL EXPENDITURES	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$22,741		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$8,026		
	5.7	Pool Furniture Allowance	\$1,200	\$1,605		
	5.13	Pool Kitchen & Tools	\$1,500	\$2,007		
					\$90,563	
2031					2031	
	2.1	Concrete Sidewalks	\$15,439	\$21,086	TOTAL EXPENDITURES	
	2.2	Concrete Curbs & Gutters	\$10,103	\$13,799		
	2.3	Concrete Steps	\$5,780	\$7,894		
	3.2	Entrance Monument Lighting	\$1,200	\$1,639		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$23,219		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$8,195		
	4.2	Wood Trim & Louvers Allowance	\$2,600	\$3,551		
	5.3	Pool Coping	\$439	\$599		
	5.7	Pool Furniture Allowance	\$1,200	\$1,639		
	5.8	Pool Chlorinators	\$1,300	\$1,776		
					\$83,396	
2032					2032	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$23,706	TOTAL EXPENDITURES	
	3.12	Basketball Goals	\$6,000	\$8,367		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$8,367		
	5.2	Pool White Coat	\$15,950	\$22,242		
	5.7	Pool Furniture Allowance	\$1,200	\$1,673		
					\$64,355	
2033					2033	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$24,204	TOTAL EXPENDITURES	
	3.14	Tot Lot & Outdoor Furniture Allowance	\$43,000	\$61,222		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$8,543		
	5.7	Pool Furniture Allowance	\$1,200	\$1,709		
					\$95,677	
2034					2034	
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$24,712	TOTAL EXPENDITURES	
	3.15	Storm Water Drainage System Allowance	\$6,000	\$8,722		
	5.3	Pool Coping	\$439	\$638		
	5.6	Pool Covers	\$4,640	\$6,745		
	5.7	Pool Furniture Allowance	\$1,200	\$1,744		
	5.10	Main Pool Filters	\$6,075	\$8,831		
					\$51,392	
2035					2035	
	1.1	Asphalt Restoration Project	\$296,400	\$439,914	TOTAL EXPENDITURES	
	1.3	Asphalt Repair Allowance	\$28,000	\$41,557		
	1.4	Asphalt Footpaths	\$14,976	\$22,227		
	3.7	Tree Trimming, Removal, & Replacement Allowanc	\$17,000	\$25,231		

Reserve Fund Plan for
KINGS PARK WEST
 Fairfax, 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
	3.8	Message Boards	\$3,938	\$5,845		
	3.15	Storm Water Drainage System Allowance	\$6,000	\$8,905		
	5.7	Pool Furniture Allowance	\$1,200	\$1,781		
	5.11	Wading Pool Pump & Filter	\$2,300	\$3,414		
					\$548,874	

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
KINGS PARK WEST
Fairfax, Virginia

CURRENT FUNDING ANALYSIS
CASH FLOW METHOD
TABLE 3



Beginning Reserve Fund Balance: **550,000** Annual Contribution To Reserves: **56,302** Contribution Percentage Increase: **2.10%** Annual Inflation Factor: **2.10%** Annual Interest Income Factor: **2.10%**

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	2,178,614	550,000	56,302	10,842	128,294	488,850
2017	2,224,365	488,850	57,484	6,714	377,629	175,420
2018	2,271,076	175,420	58,692	3,525	75,889	161,748
2019	2,318,769	161,748	59,924	3,655	40,396	184,930
2020	2,367,463	184,930	61,182	4,303	27,928	222,488
2021	2,417,180	222,488	62,467	4,312	98,158	191,109
2022	2,467,941	191,109	63,779	4,231	48,301	210,819
2023	2,519,767	210,819	65,118	2,888	203,953	74,872
2024	2,572,682	74,872	66,486	2,023	28,577	114,804
2025	2,626,709	114,804	67,882	0	229,607	(46,921)
2026	2,681,870	(46,921)	69,308	0	111,810	(89,423)
2027	2,738,189	(89,423)	70,763	0	35,725	(54,385)
2028	2,795,691	(54,385)	72,249	0	36,493	(18,629)
2029	2,854,400	(18,629)	73,766	0	88,883	(33,746)
2030	2,914,343	(33,746)	75,315	0	90,563	(48,993)
2031	2,975,544	(48,993)	76,897	0	83,397	(55,493)
2032	3,038,030	(55,493)	78,512	0	64,355	(41,336)
2033	3,101,829	(41,336)	80,161	0	95,678	(56,854)
2034	3,166,968	(56,854)	81,844	0	51,392	(26,402)
2035	3,233,474	(26,402)	83,563	0	548,874	(491,713)

STUDY PERIOD TOTALS

1,381,696 **42,494** **2,465,902**

Reserve Fund Plan for
KINGS PARK WEST
Fairfax, Virginia

ALTERNATIVE FUNDING ANALYSIS
CASH FLOW METHOD
HYBRID APPROACH
TABLE 3.1



Beginning Reserve Fund Balance: **550,000** Annual Contribution To Reserves: **56,302** Contribution Percentage Increase: **2.10%** Annual Inflation Factor: **2.10%** Annual Interest Income Factor: **2.10%**

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	2,178,614	550,000	56,302	10,842	128,294	488,850
2017	2,224,365	488,850	72,552	6,887	377,629	190,660
2018	2,271,076	190,660	88,802	4,193	75,889	207,766
2019	2,318,769	207,766	105,052	5,147	40,396	277,569
2020	2,367,463	277,569	107,258	6,795	27,928	363,694
2021	2,417,180	363,694	109,511	7,845	98,158	382,891
2022	2,467,941	382,891	111,810	8,847	48,301	455,248
2023	2,519,767	455,248	114,158	8,632	203,953	374,086
2024	2,572,682	374,086	116,556	8,940	28,577	471,004
2025	2,626,709	471,004	119,003	8,729	229,607	369,130
2026	2,681,870	369,130	121,502	7,942	111,810	386,764
2027	2,738,189	386,764	124,054	9,213	35,725	484,306
2028	2,795,691	484,306	126,659	11,302	36,493	585,774
2029	2,854,400	585,774	129,319	12,887	88,883	639,097
2030	2,914,343	639,097	132,035	14,029	90,563	694,597
2031	2,975,544	694,597	134,807	15,319	83,397	761,327
2032	3,038,030	761,327	137,638	16,984	64,355	851,594
2033	3,101,829	851,594	140,529	18,574	95,678	915,018
2034	3,166,968	915,018	143,480	20,458	51,392	1,027,564
2035	3,233,474	1,027,564	146,493	17,201	548,874	642,384

STUDY PERIOD TOTALS

2,337,519 **220,767** **2,465,902**

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 **550,000**

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	100,543	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	20,097	29,214
1.2	Asphalt Seal Coat	4,543	4,543	4,543	4,543	4,543	4,543	4,543	6,068	6,068	6,068	6,068	6,068	6,068	3,649	3,649	3,649	3,649	3,649	3,649	3,649
1.3	Asphalt Repair Allowance	9,385	1,265	1,265	1,265	1,265	1,265	1,265	2,866	2,866	2,866	2,866	2,866	2,866	6,494	6,494	6,494	6,494	6,494	6,494	1,839
1.4	Asphalt Footpaths	2,510	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,015	1,721
2 CONCRETE COMPONENTS																					
2.1	Concrete Sidewalks	7,452	3,246	3,246	3,246	3,246	3,602	3,602	3,602	3,602	3,602	3,996	3,996	3,996	3,996	3,996	4,434	4,434	4,434	4,434	4,434
2.2	Concrete Curbs & Gutters	4,189	2,124	2,124	2,124	2,124	2,357	2,357	2,357	2,357	2,357	2,615	2,615	2,615	2,615	2,615	2,902	2,902	2,902	2,902	2,902
2.3	Concrete Steps	2,396	1,215	1,215	1,215	1,215	1,349	1,349	1,349	1,349	1,349	1,496	1,496	1,496	1,496	1,496	1,660	1,660	1,660	1,660	1,660
2.4	Concrete Bridges	4,394	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345	345
2.5	Concrete Pool Deck	7,893	2,451	2,451	2,451	2,451	2,451	2,451	2,451	2,451	2,451	3,017	3,017	3,017	3,017	3,017	3,017	3,017	3,017	3,017	3,017
3 SITE FEATURES																					
3.1	Entrance Monuments	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,847	1,795	1,795	1,795	1,795	1,795	1,795
3.2	Entrance Monument Lighting	147	147	147	147	147	147	147	147	147	147	147	147	147	147	147	181	181	181	181	181
3.3	Entrance Flagpole	165	165	165	165	165	165	104	104	104	104	104	104	104	104	104	104	104	104	104	104
3.4	Light Poles & Fixtures	8,409	8,409	8,409	8,409	8,409	8,409	8,409	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346	5,346
3.5	Street Signage Allowance	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224	1,224
3.6	Mailbox Modules	15,384	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562	1,562
3.7	Tree Trimming, Removal, & Replacement All	20,056	17,521	17,889	18,265	18,648	19,040	19,440	19,848	20,265	20,690	21,125	21,568	22,021	22,484	22,956	23,438	23,930	24,433	24,946	25,469
3.8	Message Boards	435	435	435	435	435	435	435	435	435	525	525	525	525	525	525	525	525	525	525	646
3.9	Wood Fencing & Railings	338	338	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114	114
3.10	Metal Handrailings	590	183	183	183	183	183	183	183	183	183	226	226	226	226	226	226	226	226	226	226
3.11	Multi-Purpose Court	413	413	413	413	413	413	413	413	413	413	450	450	450	450	450	450	450	450	450	450
3.12	Basketball Goals	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	357	510	510	510	510
3.13	Chain Link Fencing	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
3.14	Tot Lot & Outdoor Furniture Allowance	7,822	7,822	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	3,470	4,739	4,739	4,739
3.15	Storm Water Drainage System Allowance	7,283	6,184	6,314	6,446	6,582	6,720	6,861	7,005	7,152	7,302	7,456	7,612	7,772	7,935	8,102	8,272	8,446	8,623	8,804	8,989
4 POOL BUILDING																					
4.1	Re-Roofing Project	2,329	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414	414
4.2	Wood Trim & Louvers Allowance	702	702	702	2,117	2,117	255	255	255	255	255	255	850	850	850	850	1,120	1,120	1,120	1,120	1,120
4.3	Door Allowance	1,383	330	330	330	330	330	330	330	330	330	330	406	406	406	406	406	406	406	406	406
4.4	Lighting & Electrical Allowance	733	733	733	733	733	623	623	623	623	623	623	623	623	623	623	623	623	623	623	623
4.5	Plumbing Modernization Allowance	1,952	1,952	1,952	1,952	1,952	955	955	955	955	955	955	955	955	955	955	955	955	955	955	955
4.6	Water Heater Allowance	1,471	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261	261
5 POOL FACILITY																					
5.1	Pool Restoration Project	9,172	9,172	9,172	9,172	9,172	9,172	9,172	9,172	9,172	6,657	6,657	6,657	6,657	6,657	6,657	6,657	6,657	6,657	6,657	6,657
5.2	Pool White Coat	2,468	2,468	2,468	2,468	2,468	2,468	1,997	1,997	1,997	1,997	1,997	1,997	1,997	1,997	1,997	1,997	3,409	3,409	3,409	3,409
5.3	Pool Coping	151	151	151	160	160	160	88	88	88	88	88	88	193	193	193	206	206	206	219	219
5.4	Pool Fencing	858	858	858	858	858	858	858	858	858	858	858	858	858	858	858	858	858	858	858	858
5.5	Pool Perimeter Equipment Allowance	560	560	560	560	560	560	560	560	560	495	495	495	495	495	495	495	495	495	495	495
5.6	Pool Covers	700	700	700	382	382	382	382	382	382	382	382	382	382	382	382	382	382	382	522	522

FUNDING ANALYSIS
COMPONENT METHOD
TABLE 4

Beginning Reserve Fund Balance:

In Dollars **550,000**

Component Number	COMPONENT	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
5.7	Pool Furniture Allowance	1,457	1,237	1,263	1,289	1,316	1,344	1,372	1,401	1,430	1,460	1,491	1,522	1,554	1,587	1,620	1,654	1,689	1,725	1,761	1,798
5.8	Pool Chlorinators	129	129	129	129	129	159	159	159	159	159	159	159	159	159	159	196	196	196	196	196
5.9	Main Pool Pump	722	722	438	438	438	438	438	438	438	438	438	438	539	539	539	539	539	539	539	539
5.10	Main Pool Filters	815	815	815	330	330	330	330	330	330	330	1,013	1,013	1,013	1,013	1,013	1,013	1,013	1,013	228	228
5.11	Wading Pool Pump & Filter	254	254	254	254	254	254	254	254	254	307	307	307	307	307	307	307	307	307	307	377
5.12	Pool Storage Sheds	381	381	381	381	381	381	381	381	381	381	469	469	469	469	469	469	469	469	469	469
5.13	Pool Kitchen & Tools	199	199	199	199	180	180	180	180	180	180	180	180	180	180	222	222	222	222	222	222
ANNUAL COMPONENT CONTRIBUTION TOTALS		234,252	104,987	100,651	101,806	102,333	100,675	100,640	101,284	101,877	100,045	102,881	104,182	105,033	106,901	107,563	109,492	111,758	113,743	113,841	119,945

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	550,000	670,302	413,074	447,747	519,816	606,415	622,942	689,642	602,755	690,002	576,215	580,682	662,644	746,437	781,505	816,307	860,964	927,902	966,944	1,051,198
PLUS ANNUAL COMPONENT CONTRIBUTION	234,252	104,987	100,651	101,806	102,333	100,675	100,640	101,284	101,877	100,045	102,881	104,182	105,033	106,901	107,563	109,492	111,758	113,743	113,841	119,945
CAPITAL EXPENDITURES	128,294	377,629	75,889	40,396	27,928	98,158	48,301	203,953	28,577	229,607	111,810	35,725	36,493	88,883	90,563	83,397	64,355	95,678	51,392	548,874
SUBTOTAL	655,958	397,660	437,836	509,157	594,221	608,932	675,281	586,973	676,055	560,440	567,286	649,139	731,184	764,455	798,505	842,402	908,367	945,967	1,029,393	622,269
PLUS INTEREST INCOME @ 2.10%	14,344	15,415	9,911	10,659	12,193	14,011	14,361	15,782	13,947	15,776	13,395	13,505	15,253	17,051	17,802	18,562	19,535	20,977	21,806	23,662
FULLY FUNDED RESERVE FUND BALANCE	670,302	413,074	447,747	519,816	606,415	622,942	689,642	602,755	690,002	576,215	580,682	662,644	746,437	781,505	816,307	860,964	927,902	966,944	1,051,198	645,931

PERCENT FUNDED FOR CURRENT CYCLE **84%**

TOTAL EXPENDITURES **2,465,902**

TOTAL CONTRIBUTIONS **2,243,889**

STUDY PERIOD TOTAL INTEREST **317,944**

AVERAGE ANNUAL CONTRIBUTION **112,194**

FULLY FUNDED BALANCE GOAL

**PHOTOGRAPHS
WITH
DESCRIPTIVE
NARRATIVES**



MASON & MASON
CAPITAL RESERVE ANALYSTS, INC.



PHOTO #1
The asphalt driveways and parking bays range from poor to fair condition. They have reached the end of their service lives and require near-term restoration.



PHOTO #2
All deflected pavement, such as this requires full-depth repair prior to overlay. Crack filling deflected asphalt is not a proper repair.



PHOTO #3
Treasure Court will require tree root removal prior to restoration.



PHOTO #4
A significant amount of settled concrete panels were observed throughout the community. These are potential tripping hazards and should be repaired/replaced near-term.



PHOTO #5
A concrete bridge and metal handrailings have been constructed at the creek crossing near the tot lot. A second concrete bridge will be constructed near-term on the path near the pool.



PHOTO #6
We understand that the street light fixtures have been re-lamped with L.E.D. Any poles out of plumb should be straightened.



PHOTO #7
All of the street and informational signs have been replaced recently with high quality custom signs.

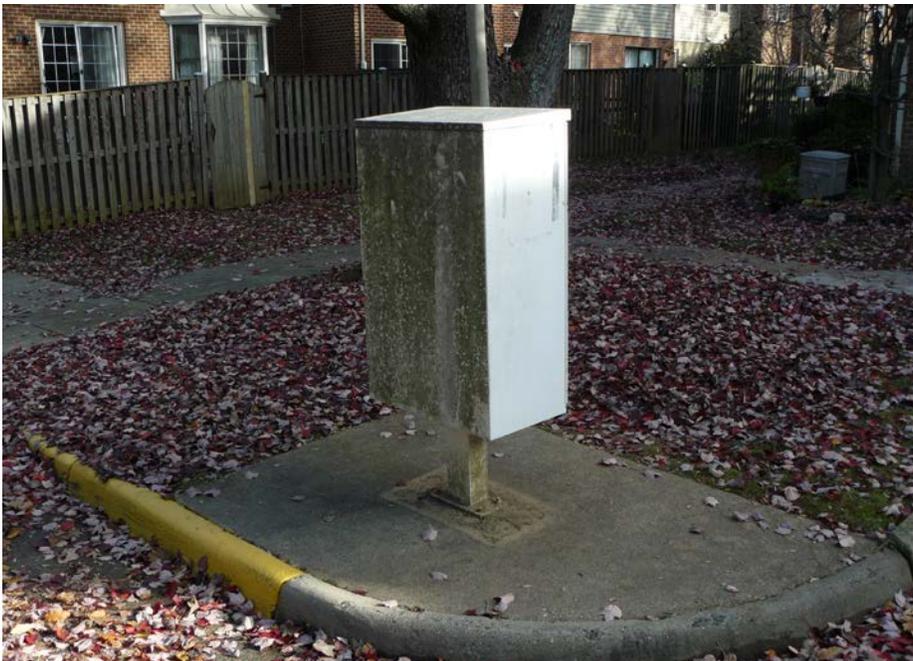


PHOTO #8
We understand that the Board would like to replace all of the mailbox modules near-term.



PHOTO #9
The multi-purpose court, basketball goals, and the chain link fencing are in continuing good condition. The rubber mulch on the court will provide a much longer service life than wood chips.



PHOTO #10
The tot lot components range from fair to continuing good condition. The steps of the play module are rusting and should be monitored for safety.



PHOTO #11
The three-tab asphalt shingle roofing of the pool building has reaching the end of its service life and requires re-roofing near-term. The wood trim and siding appear to be in continuing good condition.



PHOTO #12
Some of the steel doors in the pool building are deteriorated, requiring near-term replacement.



PHOTO #13

The water heater has been in service for many years. Although it is still in serviceable condition, it may require replacement soon. We suggest it be relocated out of the pump room when it is replaced.



PHOTO #14

The pool covers and the pool deck ranges from fair to continuing good condition. We could not evaluate the pool coping or the white coating.



PHOTO #15

The main pool pump and strainer assembly have been in use for many years. No problems were reported, but may require replacement soon.