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June 8, 2010

**Fairlington Mews Condominium Association
Arlington, Virginia**

EXECUTIVE SUMMARY

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Precision 20/20 Full Reserve Study* of Fairlington Mews Condominium Association (Fairlington Mews) located in Arlington, Virginia and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, December 14, 2009. We conducted previous Reserve Studies on March 21, 2006 and July 23, 2007. This Reserve Study is a budget planning tool that identifies the current status of the reserve fund and a stable and equitable Reserve Funding Plan to offset the anticipated future major common area expenditures.

This study is in compliance with and exceeds the standards set forth by Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA) fulfilling the requirements of a "Full Reserve Study." For brevity, we use the term Reserve Study herein. A Reserve Study comprises two parts:

Physical Analysis

- Component Inventory
- Condition Assessment
- Estimated Useful Life, Remaining Useful Life and Replacement Cost

Financial Analysis

- Fund Status
- Funding Plan

Exhibit B presents the numerical data of the Physical and Financial Analyses.

Fairlington Mews Condominium Association is a townhome style development of 277 units in 43 buildings. The exteriors of the buildings comprise brick masonry and wood trim with slate roofs. The buildings were built in 1943 and converted to condominiums in 1978. Fairlington Mews is a Virginia Historic Landmark and on the National Register of Historic Places. The development contains asphalt pavement parking areas, a pool and tennis courts. We identify 35 major common elements that are likely to require capital repair or replacement during the next 30 years.

The unaudited cash status of the reserve fund, as of August 1, 2009, as reported by Management and the Board is \$912,622. The Funding Goal of this Reserve Study is to keep the reserve balance above an adequate, not excessive threshold when reserves are needed the most due to one or more years of significant expenditures. Our recommended Funding Plan recognizes this threshold or critical point in 2018.

Fairlington Mews can fund capital repairs and replacements in any combination of the following:

- 1) Increases in the operating budget during years when the shortages occur
- 2) Loans using borrowed capital for major replacement projects
- 3) Level monthly reserve assessments annually adjusted upward for inflation to increase reserves to fund the expected major future expenditures
- 4) Special assessments

We do not advocate special assessments or loans unless near term circumstances dictate otherwise. Although loans provide a gradual method of funding a replacement, the costs are higher than if the Association were to accumulate reserves ahead of the actual replacement. Interest earnings on reserves also accumulate in this process of saving or reserving for future replacements, thereby defraying the amount of gradual reserve collections. We advocate the third method of *Level Monthly Reserve Assessments* with relatively minor annual adjustments. The method ensures that homeowners pay their “fair share” of the weathering and aging of the commonly owned property each year. Level reserve assessments preserve the property and enhance the resale value of the homes.

This Reserve Study applies the Cash Flow Method to compute the Reserve Funding Plan. The Reserve Funding Plan determines adequate, not excessive, Reserve Contributions through a 30-year Cash Flow Analysis that incorporates the current reserve funds, future interest earned, and projected Reserve Expenditures.

The Reserve Expenditures reflect current and future *local* costs of replacement, projected earned interest, the average annual fund balances and anticipated inflation. Sources for *local* costs of replacement include our proprietary database, historical costs and published sources, i.e., R.S. Means, Incorporated.

We identified the anticipated Reserve Expenditures for Reserve Components during the next 30 years as either near term or long term. *Near term* expenditures relate to capital needs from now through 2015, the next five years beyond this current fiscal year. These *near term* expenditures comprise \$2,739,653, or about nineteen percent (19.1%), of the next 30 years of

Exhibit B Reserve Expenditures. Expenditures during the next five years are more important when compared with the future needs of Fairlington Mews and tend to govern the amounts of recommended Reserve Contributions. The current Reserve Expenditures relate primarily to replacement of the slate roofs.

Our revised findings reflect both external market and internal property changes. The result is an overall *increase* in the recommended Reserve Funding Plan since our last Reserve Study on July 23, 2007. The overall increase relates primarily to reclassification of interest earned on reserves from reserve income to operating income.

The Association budgeted \$318,090 for Reserve Contributions in 2010¹. We recommend that the Association adopt a reserve budget of \$355,100 in 2011, \$392,100 in 2012 and \$429,100 in 2013. Afterwards, the Association should budget gradual annual increases in reserve funding, that in part consider the effects of inflation through 2021. By 2022, the Association will have fully funded for slate roof replacements and may anticipate a *decrease* in Reserve Contributions to \$340,000. Afterwards, the Association should again budget gradual annual increases in reserve funding, that in part consider the effects of inflation through 2040, the limit of this study's Cash Flow Analysis.

The recommended year 2011 Reserve Contribution of \$355,100 is \$37,010 more than the prior budgeted amount and represents about a four percent (4.2%) adjustment in the 2010 total Operating Budget of \$879,998. This initial adjustment of \$37,010 is equivalent to an average monthly increase of \$11.13 per unit owner. These contributions will maintain a Reserve Fund

¹The Fiscal Year (FY 2010) for Fairlington Mews begins August 1, 2009 and ends July 31, 2010. For brevity, we refer to the Fiscal Year by its ending year, i.e. Fiscal Year 2009-10 is FY 2010 or simply 2010.

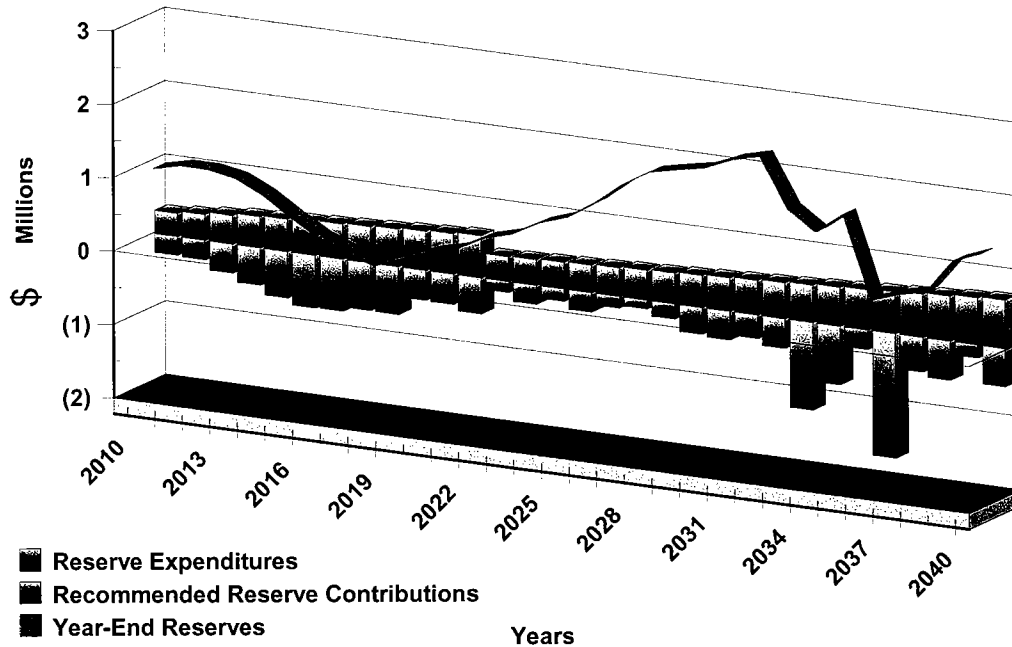
for the major expenditures as identified in **Exhibit B. Exhibit B Reserve Funding Plan** enumerates the details regarding recommended annual Reserve Contributions and projected year end reserve balances.

Based on the investigation and analysis as detailed in the accompanying narrative, we recommend the following Reserve Funding Plan (Reserve Contributions) to offset the anticipated future Reserve Expenditures of the subject Reserve Components during the next 30 years.

Recommended Reserve Contributions

Year	\$	Year	\$	Year	\$
2011	355,100	2021	578,200	2031	475,600
2012	392,100	2022	340,000	2032	493,700
2013	429,100	2023	352,900	2033	512,500
2014	445,400	2024	366,300	2034	532,000
2015	462,300	2025	380,200	2035	552,200
2016	479,900	2026	394,600	2036	573,200
2017	498,100	2027	409,600	2037	595,000
2018	517,000	2028	425,200	2038	617,600
2019	536,600	2029	441,400	2039	641,100
2020	557,000	2030	458,200	2040	665,500

Recommended Reserve Funding Plan Fairlington Mews Condominium Association

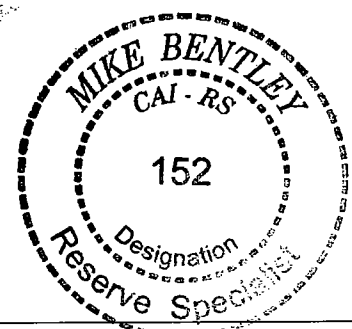


Ongoing Board reviews and an Update of this Reserve Study in two- to three- years are necessary to ensure an equitable funding plan since a Reserve Study is a snapshot in time. Many variables change after the study is conducted that may result in significant overfunding or underfunding the reserve account. Examples include deferred or accelerated projects based on Board discretion, interest rate changes on reserve investments and *local* construction inflation rate changes. We have not investigated any liabilities against the property.

Respectfully submitted on June 8, 2010 by
RESERVE ADVISORS, INC.

Jayme Radomski

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² PRA (Professional Reserve Analyst) is the professional designation of the Association of Professional Reserve Analysts. Learn more about APRA at <http://www.apra-usa.com>.
³ RS (Reserve Specialist) is the reserve provider professional designation of the Community Associations Institute (CAI) representing America's more than 300,000 condominium, cooperative and homeowners associations.

NARRATIVE REPORT

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Precision 20/20 Full Reserve Study* of certain property exhibited to us as that of

Fairlington Mews Condominium Association

Arlington, Virginia

and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, December 14, 2009. We conducted previous Reserve Studies on March 21, 2006 and July 23, 2007.

Reserves for replacement are the amounts of money required for future expenditures to repair or replace Reserve Components that wear out before the entire facility or project wears out. Reserving funds for future repair or replacement of the Reserve Components is also one of the most reliable ways of protecting the value of the property's infrastructure and marketability.

This Reserve Study uses a 30-year Cash Flow Analysis to project and illustrate the Reserve Funding Plan. National standards⁴ require a Reserve Component to have a "predictable remaining Useful Life." Estimating Remaining Useful Lives and Reserve Expenditures beyond 30 years is often indeterminate and may involve more than one life cycle for a particular Reserve Component. Construction inflation can also vary greatly over many years.

⁴ Identified in the APRA "Standards - Terms and Definitions" and the CAI "Terms and Definitions".

Manner of Report Presentation

Our report comprises an Executive Summary, Narrative, Conclusion, Supplementary Information, Definitions and Exhibits. The Executive Summary identifies the property, fiscal considerations, recommended reserve funding and projections concerning reserve funding. The Narrative sets forth the nature and extent of the investigation and includes the following sections:

- Manner of Report Presentation
- Considerations and Methodology
- Identification of Reserve Components
- Condition Assessment
- Explanation of the Exhibits
- Conclusion
- Supplementary Information for Financial Statements

Supplementary Information for Financial Statements contains significant unaudited information from the Reserve Expenditures about Reserve Component categories and estimated current and future replacement costs. Definitions contains terms and definitions used throughout this Reserve Study and the industry. **Exhibits A, B, C, D** and **E** contain pertinent information relating to the analysis.

Exhibit A *Photographs* documents the conditions of various property components as of the date of our visual inspection, December 14, 2009. The Condition Assessment contains references to these photographs.

Exhibit B presents two tables. The first table Reserve Expenditures includes the Reserve Component Inventory, Reserve Expenditures, estimates of future costs and anticipated times of

replacements during the next 30 years. The second table Reserve Funding Plan includes Reserve Contributions for the next 30 years based on Reserve Expenditures.

Exhibit C *Reserve Funding Graphs* contains one graph and one pie chart. The graph Recommended Reserve Funding Plan shows the future fund balances based on the anticipated Reserve Expenditures and recommended annual Reserve Contributions during the next 30 years. The pie chart Estimated Future Reserve Expenditures illustrates the relative importance of Reserve Expenditures and relative funding during the next 30 years.

Exhibit D describes Assumptions of the Reserve Study of how we collect and analyze data. The statement of Professional Service Conditions identifies the general manner of professional services provided, as stated in the original authorized Confirmation of Services for this Reserve Study.

Exhibit E *Credentials* contains the Qualifications of the Firm, Responsible Advisor and Review Coordinator, and resources we use in our analysis, i.e., published sources of cost data.

Considerations and Methodology

This Reserve Study is in compliance with and exceeds the standards set forth by Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA) fulfilling the requirements of a “Full Reserve Study.” For brevity, we use the term Reserve Study herein. We considered the following factors in our analysis:

Information Furnished by Management and the Board	
August 1, 2009 unaudited Cash Status of the Reserve Fund	\$912,622
2010 Budgeted Reserve Contributions	\$318,090
Anticipated Interest on Reserve Fund	\$0
Less Anticipated Reserve Expenditures	(\$247,463)
Projected 2010 Year-End Reserve Balance	\$983,249

The Cash Flow Method to compute the 30-year Reserve Funding Plan

The identification of individual Reserve Components with their anticipated year of replacement as detailed in **Exhibit B Reserve Expenditures**

Local⁵ costs of material, equipment and labor

The current and future costs of replacement for the Reserve Components

The costs of removal of the worn out elements as part of the cost of replacement

Local economic conditions and a historical perspective to arrive at our estimate of long term future inflation for *construction costs* in Arlington, Virginia at an annual inflation rate of 3.8%

The past and current maintenance practices of Fairlington Mews and their effects on remaining useful lives

The Funding Plan excludes necessary operating budget expenditures. It is our understanding that the current operating budget and future operating budgets will provide for the ongoing normal maintenance of Reserve Components or property elements unless specifically identified in the *Reserve Component Inventory of Exhibit B Reserve Expenditures*. Fairlington Mews should continue to include these costs of maintenance in the operating budget.

⁵ See **Exhibit E Credentials** for addition information on our use of published sources of cost data.

At the Direction of the Board and Management, we exclude reinvesting earned interest into Reserves. We did not consider the costs, if any, of Federal and State Taxes on income derived from interest and/or dividend income)

Interest rates on reserves are steady or increasing in concert with the certificates of deposit and money market rates. No significant differences exist in the savings rates of one, two or three-year CDs. Without significant differences in these savings rates, shorter term investments are the choice of many investors. We recommend consultation with a professional investment adviser before investing reserves to determine an appropriate investment strategy to maximize a safe return on reserve savings.

Updates to this Reserve Study will continue to monitor historical facts and trends concerning the external market conditions. The following table summarizes rates of inflation and key rates for government securities, generally considered as safe investment alternatives.

Interest Rate and Inflation Data								
Average or Last Actual = (A)	2008:1 (A)	2009:1 (A)	2009:2 (A)	2009:3 (A)	2009:4 (A)	2010:1 (E)	2010:2 (E)	2010:3 (E)
90-Day Treasury Bill	0.125%	0.25%	0.25%	0.25%	0.05%	0.05%	0.1%	0.1%
1-Year Treasury Bill	1.60	0.95	0.90	0.30	0.30	0.30	0.30	0.30
10-Year Treasury Note	3.35	2.75	2.84	3.20	3.45	3.50	3.60	3.60
30-Year Treasury Bond	4.15	3.70	3.70	4.00	4.45	4.50	4.55	4.55
Consumer Price Index	4.00	0.2%	0.5%	0.0%	0.2%	1%	2%	2%
Construction Inflation, Bureau of Labor Statistics (Materials & Labor)		2.0%	1.7%	1.5%	2.0%	3.0%	3.5%	
National Market Savings Rates	0.75%	for Money Market Savings			2.0%	for 2-Year Certificate of Deposit		
	1.6%	for 1-Year Certificate of Deposit			2.5%	for 3-Year Certificate of Deposit		
At the Direction of the Board and Management, we exclude reinvesting earned interest into Reserves								
Estimated Near Term Inflation Rate for Future Capital Expenditures 3.80%								

With localized exceptions, the inflation rate for construction materials and labor are trending higher in a sustained manner. Isolated or regional markets of greater construction (development) activity may experience slightly greater rates of inflation for both construction materials and labor.

Identification of Reserve Components

Fairlington Mews Condominium Association is a townhome style development of 277 units in 43 buildings. The exteriors of the buildings comprise brick masonry and wood trim with slate roofs. The buildings were built in 1943 and converted to condominiums in 1978. Fairlington Mews is a Virginia Historic Landmark and on the National Register of Historic Places. The development contains asphalt pavement parking areas, a pool and tennis courts. We identify 35 major common elements that are likely to require capital repair or replacement during the next 30 years.

Our investigation included Reserve Components or property elements as set forth in your Declaration. Our analysis began by segregating the property elements into several areas of responsibility for repair and replacement. We derived these segregated classes of property from our review of the information provided to us and through conversations with Management and the Board. These four classes of property include:

- 1) Reserve Components
- 2) Long-Lived Property Elements
- 3) Operating Budget Funded Repairs and Replacements
- 4) Property Maintained by Homeowners

We advise that the Board conduct an annual review of these classes of property to confirm its policy concerning the manner of funding, i.e., from reserves or the operating budget. The following pages briefly describe these four classes.

Reserve Components are defined as property elements with: 1) Fairlington Mews responsibility; 2) limited Useful Life expectancies; 3) predictable Remaining Useful Life expectancies; and 4) a replacement cost above a minimum threshold.

The Reserve Components comprise 35 line items likely to require Reserve Expenditures during the next 30 years. **Exhibit B Reserve Expenditures** details this first class of property which we summarize as follows:

Exterior Building Elements (Line Items 1.180 through 1.820)

- Doors, Common Entrances
- Gutters and Downspouts
- Paint Finishes, Doors and Trim
- Roofs, Slate
- Walls, Masonry

Interior Building Elements (Line Items 2.200 and 2.800)

- Floor Coverings, Carpet
- Paint Finishes

Property Site Elements (Line Items 4.020 through 4.861)

- Asphalt Pavement
- Concrete Sidewalks
- Fence, Chain Link
- Fences, Wood
- Light Poles and Fixtures
- Playground Equipment
- Sewers, Domestic
- Signage
- Tennis Courts

Pool Elements (Line Items 6.200 through 6.900)

- Concrete Deck and Waterproof Coating
- Fences, Chain Link
- Furniture
- Mechanical Equipment
- Plaster Finish
- Rest Rooms, Renovations
- Structure and Deck

In addition to the Reserve Components listed above, we list the following Long-Lived Property Elements, defined as those items without predictable Remaining Useful Life expectancies:

- Chimney Caps
- Electrical Systems, Common
- Foundations
- Pipes, Interior Building, Water and Sewer, Common
- Pipes, Subsurface Utilities, Domestic Sewers, Relined (2005-2009)
- Roofs, Slate (Replaced Since 1997)
- Structural Frames

Long-Lived Property Elements (without predictable Remaining Useful Lives) may require infrequent repairs due to abuse, normal wear and tear or unknown construction defects. Fairlington Mews should fund the cost of these infrequent replacements from the operating budget. Funding untimely or unexpected replacements from reserves will necessitate adjustments to future Reserve Contributions. An update of this Reserve Study will help determine the merits of adjusting the Reserve Funding Plan.

The operating budget provides money for the repair and replacement of certain Reserve Components. Operating Budget Funded Repairs and Replacements relate to:

- General Maintenance to the Common Elements
- Expenditures less than \$3,700 (*These relatively minor expenditures have a limited effect on the recommended Reserve Contributions.*)
- Crawl Spaces
- Interior Finishes, Pool Office
- Landscape
- Light Fixtures, Interior (Incl. Common Entrance Exterior Lights)
- Mailboxes, Interior
- Paint Finishes, Touch Up
- Pipes, Subsurface Utilities, Domestic Sewer Lines, Inspections
- Porches, Brick, Inspections, Repairs and Partial Replacements (At the Direction of the Board and Management)
- Retaining Wall, Timber, Court 4
- Shutters
- Site Furniture

- Other Repairs normally funded through the Operating Budget

Certain items have been designated as the responsibility of the homeowner to repair or replace. Property Maintained by Homeowners relates to unit:

- Electrical Systems
- Heating, Ventilating and Air Conditioning (HVAC) Units
- Interiors
- Light Fixtures, Exterior Building (Except at Hallway Entries)
- Pipes, Interior Building, Water and Sewer

Condition Assessment

The Condition Assessment of this *Precision 20/20 Full Reserve Study* includes *Enhanced Solutions and Procedures (ESP)* for select significant components. These narratives describe the Reserve Components, document specific problems and conditions, and may include detailed solutions and procedures for necessary capital repairs and replacements for the benefit of current and future board members. We advise the Board use this information to help define the scope and procedures for repair or replacement when soliciting bids or proposals from contractors. *However, the Report in whole or part is not and should not be used as a design specification or design engineering service.*

Exterior Building Elements

Doors, Common Entrances - Fairlington Mews maintains 15 front entrance common doors. Each door also includes two sidelights. These doors are in fair condition. The ages of the doors was not available at the time of inspection. The useful life of the doors is up to 40 years. We suggest that the Association budget for an aggregated replacement of the doors by 2016. This type of replacement will ensure the availability of similar hardware and maintain aesthetic

continuity throughout the community. We include this information on Line Item 1.180 of **Exhibit B Reserve Expenditures**.

Gutters and Downspouts - Approximately 18,000 linear feet of aluminum gutters and downspouts drain storm water from the sloped roofs of Fairlington Mews. These gutters and downspouts vary in age and condition. The Association began replacing the existing gutters in downspouts with larger elements in 1997 in conjunction with roof replacements. We estimate that up to thirty-nine percent (39.1%) of the gutters and downspouts require replacement. We include the following solutions and procedures for gutter and downspout maintenance and replacements for present and future board members.

The most common and economical type of gutter profile is the metal roll-formed seamless K-style. The five-inch wide K-style gutter is standard but six-inch wide K-style gutters should be used on larger roofs. The size of the gutter is determined by the *roof's watershed area*, a *roof pitch factor* and the *rainfall intensity number* of the Association's region. We recommend sloping gutters 1/16 inch per linear foot and providing fasteners a maximum of every three feet.

Downspouts can drain 100 square feet of roof area per one square inch of downspout cross sectional area. Downspouts should be of the same material as the gutters. We recommend the use of downspout extensions and splash blocks at the downspout discharge to direct storm water away from the foundations. Downspouts that discharge directly onto roofs cause premature deterioration of the roofs due to the high concentration of storm water. We recommend either routing these downspouts directly to the ground, connecting the downspouts to the gutters of the lower roof or distributing the storm water discharge over a large area.

Maintenance of the gutters and downspouts should include semiannual inspections, repairs at seams and fastening points, verification that the downspouts discharge away from foundations and cleaning. More frequent maintenance may be required for gutters and downspouts in areas of concentrated landscape growth. The Association should fund these expenses through the operating budget. A lack of maintenance resulting in misdirected storm water will result in deterioration of soffits, fascia, siding, foundations and the gutters and downspouts themselves.

The useful life of gutters and downspouts is up to 25 years. Based on the condition of the gutters and downspouts, we recommend the Association budget for phased replacement of the remaining 7,040 linear feet of gutters and downspouts beginning in 2011 and concluding by 2021. We recommend the subsequent partial replacement of up to seventy-percent percent (72%) of the gutters and downspouts beginning by 2022. We depict this information on Line Items 1.240 and 1.241 of **Exhibit B Reserve Expenditures**.

Paint Finishes - Wood trim comprises one of the exterior finish materials of the buildings. Periodic application of a protective finish of paint or stain is an essential maintenance activity to maintain the physical appearance and integrity of the buildings. Additionally, the Association maintains the paint finishes at the unit entry and common entry doors throughout the community. The finish at the trim is in good overall condition at ages of up to one year. The finish at the doors is in fair condition. The Board is likely familiar with many of the requirements for the periodic application of *paint*⁶ products. We include the following solutions

⁶ The term *paint* is a generic reference to a specialized mixture of solid pigment in a liquid solution that results in a clear, opaque or solid color protective finish. Product types are too numerous to list but include latex, oil, acrylic and elastomeric based products.

and procedures as a summary of the minimum requirements for a successful paint finish application for present and future board members.

Correct and complete *preparation* of the surface before application of the paint finish maximizes the useful life of the paint finish and surface. The contractor should remove all loose, peeled or blistered paint before application of the new paint finish. The contractor should then power wash the surface to remove all dirt or chalking of the prior paint finish.

The contractor should follow the manufacturer's directions for paint application. The most common methods of paint application are by brush, roller and spray. Brushing is the slowest method. Roller coating is much faster while spraying is usually the fastest and least costly. The contractor should specify the proposed method of application in their bids. We recommend brushing for smaller or irregular shaped surfaces. Roller coating is most effective on large flat surfaces. Spray applications require tight control of the equipment, personnel and preparation of the paint product which may prohibit a cost-effective spray application of paint. Regardless of the method of application, the contractor should protect surrounding elements.

Summarizing the minimum requirements of the proposed scope of work, all bids should include the following:

- 1) Method of application
- 2) Name of paint finish product
- 3) That the contractor will apply paint during periods of favorable weather as required and specified by the manufacturer of the paint
- 4) That the contractor will apply the paint to clean and dry surfaces at the manufacturer's recommended spreading rates

- 5) That the contractor will apply successive coats of the paint finish, with sufficient time elapse between coats, as necessary to ensure uniform appearance
- 6) That the contractor will replace deteriorated or damaged trim prior to the application of the paint finish and back-prime new trim boards prior to their installation
- 7) That the contractor will replace deteriorated sealants or caulk prior to the application of the paint finish

The useful life of protective paint finishes in Arlington is from four- to six-years. Management informs us the Association expended \$46,963 in 2010 to paint the buildings at Courts 12 through 15. Based on the condition of the paint finishes and at the direction of the Board and Management, we recommend the Association budget for the next phased paint finish application beginning by 2012 and concluding by 2014. We recommend that Fairlington Mews budget for replacement of 15 linear feet of trim at each in unit in coordination with each paint finish application. The exact amount of wood in need of replacement will depend on the actual future conditions and desired appearance. We recommend replacement wherever holes, cracks and deterioration impair the ability of the material to prevent water infiltration. The Association is also responsible for the paint finishes at the 277 unit and 15 common doors. At the direction of the Board and Management, we include an allowance for paint finishes to the doors in 2011. Fairlington Mews should budget subsequent applications and associated replacements every four years thereafter. We depict this information on Line Items 1.313 and 1.343 of **Exhibit B Reserve Expenditures**.

Roofs, Slate - Approximately 1,945 *squares*⁷ of slate shingles comprise the roofs of Fairlington Mews over 43 townhome buildings. The roofs are vary in condition at ages from 12- to 67-years. The Association is in the process of replacing half of the roofs at Building X/Y and

⁷We quantify the roof area in *squares*, where one square is equal to 100 square feet of surface area.

RR at a cost of \$148,000 as reported by Management. We estimate an additional 1,188 squares of slate roofs are original and require replacement during the next 30 years. We note stained, dislodge, broken and missing shingles, as depicted on Pages 3 through 5 of **Exhibit A Photographs**. As the shingles age they will begin flaking about their edges or delaminating followed by the occurrences of broken or dislodged shingles. Another way of determining the condition of a shingle is from the sound it emits when struck with a rubber mallet, or lightly from either end of a hammer. A dull sound indicates the process of delamination while a ping indicates a shingle in good shape. Only an invasive hands-on inspection of many shingles from each roof can determine the extent of these conditions. Accessing a slate roof for a detailed inspection may do more harm than good as natural slate is brittle and easily crack. Unless an active leak exists, *we recommend against* a walking inspection of the roof. We include the following solutions and procedures pertaining to replacement of slate roofs for the benefit of present and future board members.

The useful life of a slate roof is from 60- to 80-years. A long-lived component rarely fails at all points of application simultaneously. Rather, occurrences of roof leaks will increase as more slate shingles crack, break and dislodge. This deterioration will result in increased maintenance costs such that replacement becomes the least costly long-term alternative as compared to ongoing repairs. Based on their age and condition we recommend the Association anticipate replacement of the remaining original slate roofs in a phased manner beginning in 2011 and concluding by 2021.

A slate roof system comprises three overlapping layers of slate shingles nailed onto a 60- or 90-pound layer of roofing paper, possibly followed by insulation board and a 30-pound

underlayment felt mechanically fastened to a plywood or metal roof deck. We could not confirm the exact weights of roofing papers due to the noninvasive, nondestructive nature of our visual inspection. However, replacement standards should conform to the local building code and manufacturer's specifications at the time of actual replacement. The manner of construction is such that the 90-pound roofing paper is the primary line of defense from water infiltration. The shingles act to shade the roofing paper from harmful sunlight and to protect the roof from heavy winds.

The function of flashing is to provide a watertight junction between the roofing materials and roof penetrations. Plumbing vent stacks are one example where counter flashing and collars are often used. A short list of these points is the interface of sloped and flat roofs, at the leading edges of all roofs (*as drip edge flashing*) and any openings in the sloped roof such as plumbing stack vents and roof vents.

There are three general considerations for the maintenance of slate roofs: eradication of pests, removal of mildew and ongoing repairs. It is common for birds or animals to nest in the cavities of the edge shingles. These conditions are most common in shaded areas. As trees around the roofs continue to mature and encroach on the roofs, the Association should watch for the problem of infestation and prune back the trees as normal maintenance. Mildew build-up is a common aesthetic concern for homeowners. If the Association chooses to clean the roofs of mildew and any related stains, we advise the use a mild solution of anti-fungal chemicals and water. Personnel can apply the solution by walking across the roofs or by a remote aerial boom spray nozzle. The latter is the safest but more costly method. Use of personnel on the roofs will result in some shingle damage. However, the additional cost of an aerial boom may outweigh the

potential repair costs. We advise the Association to obtain bids for both methods and weigh the overall cost options. In any event, the contractor should include the cost to repair any broken shingles that result from the cleaning operation. The Association should fund this discretionary activity through the operating budget. Lastly, ongoing repairs, if conducted in a timely manner, should help maximize and achieve the long anticipated useful life inherent in slate shingles.

The Association should employ the above procedures as they relate to maintenance and normal repairs to achieve a long useful life for the slate roofs. We base our cost on Line Item 1.520 of **Exhibit B Reserve Expenditures** on information provided by Management and the Board.

Walls, Masonry - Brick comprises approximately 173,000 square feet of the exterior walls. The overall condition of the brick is good to fair. We note areas of mortar cracks, deterioration and previous brick replacements, as depicted on Pages 5 and 6 of **Exhibit A Photographs**. We elaborate on solutions and procedures necessary for the optimal maintenance of masonry walls in the following discussion.

Brick generally requires less maintenance than other types of exteriors. However, brick is not maintenance free. Brick exteriors should last the life of the building with proper maintenance. Fairlington Mews should plan for the periodic inspection of the brick to identify and repair areas of deterioration. Common types of masonry deterioration include efflorescence, spalling and cracking.

The primary cause of *efflorescence* and *spalling* is water infiltration, therefore prevention of water infiltration is the principal concern for the maintenance of masonry applications. Masonry walls normally shed storm water and condensate from behind the wall through weep holes. However, trapped water within masonry walls can cause corrosion of metal masonry ties, studs, structural members and potentially damage building interiors. The first sign of water infiltration is usually a water stain. Eventually, water infiltration can lead to deterioration of the masonry. If left unrepaired, water infiltration can lead to both efflorescence and spalling as described below.

Trapped water can also migrate through areas of cracked mortar or other points within the cavity of a masonry wall. This moisture then typically migrates to the exterior face of the masonry where it evaporates. As the moisture evaporates, it deposits soluble white salts either on the surface as efflorescence or below the surface as subflorescence. Efflorescence mars the appearance of the masonry, is typically harmless but can also indicate a harmful condition known as subflorescence. Subflorescence within a masonry unit can create pressure that will eventually spall the masonry face. In addition, accumulated (trapped) storm water within or behind mortar joints in conjunction with inclement weather can also gradually spall masonry, create mold or damage adjacent components, i.e., windows or interior finishes. Spalling is a form of deterioration where small fragments of masonry break away from the wall system. Spalls can also occur as a result of a chemical reaction or from movement of a building structure. Spalled masonry may eventually dislodge individual masonry units.

Mortar is the bonding material of a masonry wall. Mortar, as recommended by the Brick Industry Association (<http://www.brickinfo.org>) and other masonry experts, is made from

Portland cement, specialized sand, water, in some cases pigment for color and additives to improve mortar workability, durability and curing (hardening). Accelerators are a class of additives to speed the hydration (hardening) of the mortar in cold weather so that preheating of the mortar materials is not necessary. Calcium chloride, one such accelerant, tends to corrode steel reinforcement within the mortar. This steel holds the brick to the building. Accelerators, even those that do not contain calcium chloride, tend to create efflorescence. We recommend against use of such additives. The mortar joint is tooled to create a relatively smooth, hardened surface that is less porous than the underlying mortar. Wind and weather will naturally abrade this tooled surface and reveal the softer, more porous mortar. Water has greater propensity for absorption into the mortar joint as the surface abrades through time and exposure which creates the need for repointing.

Repointing is a process of raking and cutting out defective mortar to a depth of not less than $\frac{1}{2}$ inch nor more than $\frac{3}{4}$ inch and replacing it with new mortar. *Face grouting* is the process of placing mortar over top of the existing mortar. We advise against face grouting because the existing, often deteriorated mortar does not provide a solid base for the new mortar. New mortar spalls at face grouted areas will likely occur. One purpose of a mortar joint is to protect the brick by relieving stresses within the wall caused by expansion, contraction, moisture migration and settlement. Repointed mortar joints are more effective if the mortar is softer and more permeable than the masonry units, and no harder or less permeable than the existing mortar. The masonry contractor should address these issues within the proposed scope of work. The contract for repointing should also include attention to other related activities such as repair and partial replacement of window sills, lintel beams and sealants. Together, these aggregated capital repairs maximize the useful life of a masonry wall system. We advise a complete inspection of

the exterior walls, and partial repointing with related masonry repairs every 15 years to forestall deterioration.

We also recommend inspection, repair and replacement of the stone lintels. Lintels are structural supports or beams above windows and doors. Fatigued lintels also allow the direct penetration of storm water into the wall assembly. These inspections should locate cracks or other structural damage to the walls around lintels. Structural damage can eventually lead to costly replacements of lintels and surrounding wall systems.

A complete inspection of the exterior walls can only identify the exact scope of masonry repairs and replacements. The age and visually apparent good to fair condition of the masonry at this time suggests the need for the following activities:

- Complete inspection of the brick
- Repointing of up to ten percent (10%) of the brick
- Replacement of up to one percent (1%) of the brick
- Replacement of up to ten lintels

We recommend the Association anticipate this work in a phased manner between 2015 and 2018. The Association should anticipate this work every 15 years thereafter. The times and extent of the brick repointing and related work may vary. However, we judge at this time the estimated amounts noted on Line Item 1.820 of **Exhibit B Reserve Expenditures** appropriate to estimate sufficient reserves. Updates of this Reserve Study will again consider the need to modify the anticipated scope and estimated cost of future repointing.

Interior Building Elements

Floor Coverings, Carpet - Carpet comprises 1,425 square yards of the floor coverings at the 15 common entrances. The carpet is in fair condition overall at ages of three- to four-years. We suggest that the Association budget to replace the carpet every 8- to 12-years to maintain a positive appearance of the common areas. We include the following solutions and procedures pertaining to replacement of the carpet for the benefit of present and future board members.

The appearance, texture and longevity of carpet is determined by the type of fiber, pile and color. There are many types of fibers available. Due to the high volume of traffic in the common areas, we suggest the use of a *nylon fiber* as it is durable, resilient and stain resistant. There are also multiple types of carpet piles available. *Loop piles*, such as berber, or *angle cut piles* with woven patterns are ideal for high traffic areas. We suggest the use of *mid-tone colors* to mask traffic patterns and stains.

The contractor should follow the manufacturer's installation guidelines and the CRI-104 Standard for Installation of Commercial Carpet as provided by the Carpet and Rug Institute. The contractor should specify the fiber, pile and color in their bid.

We advise that the Association anticipate replacement of the carpet by 2013 and every ten years thereafter in coordination with paint finish applications. We depict this information on Line Item 2.200 of **Exhibit B Reserve Expenditures**. Fairlington Mews should continue to fund vacuuming, spot removal and schedule periodic cleanings through the operating budget to maximize the life of the carpet.

Paint Finishes - The common area entrances have paint finishes on the walls and ceilings. These finishes are in good condition at ages of three- to four-years. The useful life of a paint finish on interior walls and ceilings is from six- to ten-years. However, the actual *times* of paint applications are discretionary based on desired appearance and varied rates of use. We recommend the Association continue to maintain a uniformly clean and consistent appearance of interior paint finishes throughout the common areas. Due to the high volume of traffic in the common entry areas, Fairlington Mews may anticipate a diminished useful life of the paint finishes in these isolated areas. Normal maintenance should include interim partial or touchup paint applications as needed.

A successful application of paint requires complete *preparation* of the surface through removal of all loose, peeled or blistered paint before application of the new paint finish. The contractor should then wet wipe the surface to remove all dust and dirt. The contractor should follow the manufacturer's directions for paint application and protect other surrounding elements from paint spatter. The contractor should specify the name of the paint, proposed method and steps of paint application in their bid. Based on the age and condition of the paint, we recommend the application of a paint finish by 2013 and every ten years thereafter in coordination with carpet replacements. We depict this information on Line Item 2.800 of **Exhibit B Reserve Expenditures**.

Property Site Elements

Asphalt Pavement, Crack Repair, Patch and Seal Coat - Asphalt pavement comprises 11,800 square yards at 15 parking courts throughout the community. The pavement is in fair overall condition. The age of the pavement was not available at the time of inspection. We note

multiple locations of cracks and evidence of previous overlays, as depicted on Pages 7 through 9 of **Exhibit A Photographs**. Parked vehicles leak motor oil and other fluids that can damage asphalt pavement. We recommend periodic *seal coat* applications to maintain the pavement. Seal coat applications minimize the damaging effects of these vehicle fluids, maintain a uniform and positive appearance, and maximize the useful life of the pavement. Management and the Board informs us that seal coats were last applied in 2007. The Association should plan future applications every three- to five-years. We elaborate on solutions and procedures necessary for the optimal maintenance of asphalt pavement in the following discussion.

There are four main types of seal coats available: fog coat, acrylic sealer, chip seals and asphaltic emulsion. A *fog coat* is a simple mixture of water and asphalt. *Acrylic sealers* include an acrylic additive to the water and asphalt mixture for greater resistance to abrasion. *Fog coats* and *acrylic sealers* are typically spray applied and are only for aesthetic purposes. *Chip seal* is the most substantial type of seal coat which involves placement of oil and aggregate on the driving surface. Either a roller or normal vehicular traffic works the gravel into the oil. *Asphaltic emulsions* combine a sharp sand mixture or mineral fibers and an emulsifying agent with the water and asphalt mixture. *Asphaltic emulsions* are typically hand applied with squeegees to ensure that the sealer fills surface abrasions and minor cracks. This prevents the infiltration of water through cracks into the underlying pavement base. Seal coats therefore minimize the damaging effects of water from expansion and contraction. We regard *asphaltic emulsions* as the most effective and economical type of seal coat.

Fairlington Mews should repair any isolated areas of deteriorated pavement prior to seal coat applications. Proposals for seal coat applications should include both crack repair and area

patching. These activities reduce water infiltration and the effects of inclement weather. The contractor should only apply seal coat applications after remedial crack and surface repairs are completed. A seal coat does not bridge or close cracks, therefore, unrepaired cracks render the seal coat applications useless. Our future estimates of cost include an allowance for both crack repair and area patching.

Based on the condition of the pavement, we recommend that Fairlington Mews plan the next application of seal coat by 2012 followed by a phased repaving project. This near term seal coat will likely require significant crack repairs and patching. Following the repaving event, we anticipate the need for fewer repairs prior to seal coat applications. We recommend seal coat applications every four years beginning by 2019 except during subsequent repaving. Line Items 4.020 and 4.021 of **Exhibit B Reserve Expenditures** notes our estimate of future costs and anticipated times of seal coat applications.

Asphalt Pavement, Repaving - As noted above, asphalt pavement comprises 11,800 square yards at 15 parking courts throughout the community. The pavement is in fair overall condition. The age of the pavement was not available at the time of inspection. We note multiple locations of cracks and evidence of previous overlays, as depicted on Pages 7 through 9 of **Exhibit A Photographs**. The useful life of pavement in Arlington is from 15- to 20-years. We include the following solutions and procedures pertaining to *components* of the pavement, the *manner of repaving*, *time* of repaving and *coordination* of other possible replacements with the repaving for the benefit of the present and future board members.

Components of asphalt pavement include native soil, aggregate and asphalt. First the contractor creates a base course of aggregate or crushed stone and native soil. The base course is individually compacted to ninety-five percent (95%) dry density prior to the application of the asphalt. Compaction assures a stable base for the asphalt that reduces the possibility of settlement. The initial installation of asphalt uses at least two lifts, or two separate applications of asphalt, over the base course. The first lift is the binder course. The second lift is the wearing course. The wearing course comprises a finer aggregate for a smoother more watertight finish.

The *manner of repaving* is either a *mill and overlay* or *total replacement*. A mill and overlay is a method of repaving where cracked, worn and failed pavement is mechanically removed or milled until sound pavement is found. A new layer of asphalt is overlaid atop the remaining base course of pavement. Total replacement includes the removal of all existing asphalt down to the base course of aggregate and native soil followed by the application of two or more new lifts of asphalt. We recommend mill and overlayment on asphalt pavement that exhibits normal deterioration and wear. We recommend total replacement of asphalt pavement that exhibits severe deterioration, inadequate drainage, pavement that has been overlaid multiple times in the past or where the configuration makes overlayment not possible. Based on the apparent visual condition of the asphalt pavement, we recommend an initial *total replacement* of the pavement followed by a *mill and overlayment*.

A variety of repairs are necessary to deteriorated pavement prior to the application of an overlay. The contractor should use a combination of area patching, crack repair and milling before the overlayment. The contractor should patch areas that exhibit potholes, alligator or spider web pattern cracks and areas of pavement that are severely deteriorated from oil and

gasoline deposits from parking vehicles. Area patching requires total replacement of isolated areas of pavement. The contractor should mechanically rout and fill all cracks with hot emulsion. Crack repair minimizes the chance of the underlying cracks transmitting through the overlayment. In addition to area patching and crack repair, the contractor should mill the pavement prior to overlayment. Properly milled pavement removes part of the existing pavement and permits the overlay to match the elevation of adjacent curbs, catch basins and other areas not subject to repaving. Milling also allows the contractor to make adjustments to the slope of the pavement to ensure proper drainage. The contractor should clean the milled pavement to ensure proper bonding of the new overlayment. We recommend an overlayment thickness that averages 1½ inches (not less than one inch or more than two inches). Variable thicknesses are often necessary to create an adequate slope for proper drainage. The contractor should identify and quantify areas of pavement that require area patching, crack repair and milling to help the Association compare proposed services.

Total replacement requires the removal of all existing asphalt. For area patching, we recommend the contractor use a rectangular saw cut to remove the deteriorated pavement. For larger areas such as entire parking areas or driveways, we recommend the contractor grind, mill or pulverize the existing pavement to remove it. The contractor should then augment and compact the existing aggregate and native soil to create a stable base. Finally the contractor should install the new asphalt in at least two lifts.

The *time* of replacement is dependent on the useful life, age and condition of the pavement. The useful life of 15- to 20-years is dependent in part on the maintenance applied to the pavement, the amounts and concentration of auto solvents that penetrate the pavement, the

exposure to sunlight and detrimental effects of inclement weather. Fairlington Mews should repair any isolated areas of deteriorated pavement concurrent with periodic seal coat applications. We recommend the Association plan for a phased total replacement of the asphalt pavement beginning by 2014 and concluding by 2018. We recommend the Association anticipate the need to replace all of the adjacent curbs and gutters and perform repairs and partial replacements of the six catch basins in conjunction with the total replacement.

The Association should budget for subsequent phased milling and overlayment of the pavement with area patching of up to fifteen percent (15%) beginning by 2034 and concluding by 2038. We include an allowance for replacement of up to twenty percent (20%), or 1,180 linear feet, of the curbs and gutters and capital repairs and partial replacements of the catch basins in coordination with the mill and overlayment. We depict this information on Line Items 4.040 and 4.045 of **Exhibit B Reserve Expenditures**.

Concrete Sidewalks - The Association maintains approximately 43,300 square feet of concrete sidewalks and stairs throughout the community. The sidewalks vary in condition from good to poor. We note locations of spalled concrete, as depicted on Page 10 of **Exhibit A Photographs**. These applications of concrete have useful lives of up to 65 years although premature deterioration of isolated areas of concrete is common. Inclement weather, inadequate subsurface preparation and improper concrete mixtures or finishing techniques can result in premature deterioration such as settlement, chips, cracks and spalls. Variable conditions like these result in the need to plan for periodic partial replacements of the concrete flatwork throughout the next 30 years. Management informs us the Association will expend \$15,400 in

2011, \$40,000 in 2012 and \$18,000 in 2013 for concrete repairs and partial replacements. We estimate up to twenty percent (20.2%) of the concrete will be replaced by 2013. .

Following the near term repaving, we anticipate the need to replace up to forty-four percent (43.8%), or 18,960 square feet of sidewalks and stairs through 2040. Line Item 4.140 of **Exhibit B Reserve Expenditures** notes our estimate of future costs and anticipated times of replacements. Our cost also includes allowances for phased replacements of the metal handrails in coordination with concrete replacements due to their interrelated nature. We recommend an annual inspection of the sidewalks to identify potential trip hazards. We suggest that the Association grind down or mark these hazards with orange safety paint prior to replacement and fund this ongoing activity through the operating budget.

Fence, Chain Link - Approximately 1,800 linear feet of galvanized chain link fence lines the southwest perimeter of the property. The fence is in fair to poor overall condition. The age of the fence was not available at the time of inspection . Management and the Board inform us replacement of the fence is not considered a high priority. Chain link fences have useful lives of up to 35 years. Based on its condition and low priority, we recommend the Association anticipate the replacement of the chain link fence by 2019. We suggest the Association install vinyl coated fences at the time of replacement. We depict this information on Line Item 4.220 of **Exhibit B Reserve Expenditures**.

Fences, Wood, Privacy - Approximately 10,300 linear feet of wood fences line the private yards of each unit. These wood fences are in fair overall condition. Management and the Board inform us the Association repaired the fence, including replacing the majority of the top

rail, as depicted on Page 11 of **Exhibit A Photographs**. Wood fences of this type have useful lives of 15- to 20-years. The Association should anticipate periodic partial replacements due to the nonuniform nature of wood deterioration. Fairlington Mews should fund these repairs through the operating budget as needed. We suggest the Association plan for their eventual phased replacement beginning by 2014, concluding by 2015 and every 19 years thereafter. We depict this information on Line Item 4.285 of **Exhibit B Reserve Expenditures**.

Light Poles and Fixtures - The Association uses approximately 160 metal light fixtures atop metal poles to illuminate the property. The poles and fixtures are in fair to poor overall condition. Management informs us the Association replaced the wiring and installed junction boxes at each light pole at Court 15 in 2010 at a cost of \$7,500. We include this expenditure in **Exhibit B Reserve Expenditures**. The ages of the light poles and fixtures were not available at the time of inspection. Exterior light poles and fixtures have useful lives of up to 35 years. The Association should anticipate the need for phased replacement of the poles beginning by 2016 and concluding by 2018. We note this information on Line Item 4.560 of **Exhibit B Reserve Expenditures**.

Playground Equipment - The Association maintains playground equipment near the pool. The playground equipment is in good condition at an age of less than one year. Safety is the major purpose for maintaining playground equipment. We recommend an annual inspection of the playground equipment to identify and repair as normal maintenance loose connections and fasteners or damaged elements. Playworld Systems⁸ is a leading innovator of modular playground equipment. We suggest the Association learn more about the specific requirements

⁸ Reserve Advisors, Inc. does not have any financial or other interest in this company and includes this reference for informational purposes only.

of playground equipment at <http://www.playworldsystems.com>. We recommend the use of a specialist for the design or replacement of the playground equipment environment.

The current landing surface is wood chips. At the direction of Management and the Board, we include an allowance for the installation of a rubber landing surface by 2012. The playground equipment and rubber landing surface have useful lives of 15- to 20-years. We recommend replacement of the playground equipment and the landing surface by 2029. We include this information on Line Items 4.633 and 4.733 of **Exhibit B Reserve Expenditures**.

Sewers, Domestic, Waste Piping - Fairlington Mews maintains the subsurface domestic waste piping throughout the community. Management and the Board inform us the Association is in the process of relining and replacing a majority of the pipes. The Association will expend \$45,000 in 2010 to complete this project. The subsurface piping has a long useful life up to and sometimes beyond 85 years. Erosion, root growth, freeze and thaw cycles, and significant surface loads may create the need for partial replacements of the domestic sewer piping. Inspection of the sewers is beyond the scope of the visual, non-invasive nature of our inspection. Based on the recent relining project and the reported good condition of the pipes, we prudently recommend the Association budget an allowance of \$20,000 plus inflation every five years beginning by 2015 for inspections and partial replacements of domestic sewer piping as needed. Future updates to this study will consider the observations and history of pipe replacements. We include this information on Line Item 4.753 of **Exhibit B Reserve Expenditures**.

Signage - The Association maintains the wood signs at each of the 15 parking areas throughout the community. These signs are in good condition at an age of five years. The

functional useful life of wood signs is from 15- to 20-years. The community signs contribute to the overall aesthetic appearance to owners and potential buyers. Replacement of community signs is often predicated upon the desire to "update" the perceived identity of the community rather than for utilitarian concerns. Therefore, the specific times for the replacement of the signs is discretionary. We recommend the Association plan to replace the community signs by 2021 and again by 2037. We base our cost on Line Item 4.810 of **Exhibit B Reserve Expenditures** on historic information provided by Management.

Tennis Courts, Color Coat - Fairlington Mews maintains 2,100 square yards of asphalt comprising three tennis courts. The tennis court color coat surface at the single court is in good condition while the color coat surfaces at the double court are in poor condition. Furthermore, we note multiple surface cracks at the double tennis court. Page 13 of **Exhibit A Photographs** includes examples of the condition of the tennis courts. We recommend the Association apply a new color coat to the asphalt tennis courts every four- to six-years to maximize the useful life of the courts. Prior to the application of the color coat, the Association should require the contractor to rout and fill all cracks with hot emulsion. This deters water infiltration and further deterioration of the asphalt playing surface. We advise the Association to perform crack repairs and apply a new color coat to the asphalt surface at the single court by 2012 and every five years thereafter except when replacement occurs. We recommend the Association defer application of a new color coat to the double tennis court until 2018, following the near term replacement of the courts. We recommend subsequent applications every five years thereafter except when repaving occurs. We include this information on Line Items 4.830 and 4.831 of **Exhibit B Reserve Expenditures**.

Tennis Courts, Fences - Approximately 790 linear feet of metal chain link fence enclose the tennis courts. The chain link fences are in fair condition. Chain link fence of this type has a useful life of 15- to 25-years. We recommend the Association anticipate replacement of the tennis court chain link fences at the single court by 2016, and at the double court by 2013 and again by 2038, concurrent with asphalt surface replacement. We depict this information on Line Items 4.840 and 4.841 of **Exhibit B Reserve Expenditures**.

Tennis Courts, Surface Replacement - As stated previously, a total of 2,100 square yards comprise the three asphalt tennis courts at Fairlington Mews. The single tennis court is in fair condition while the asphalt pavement at the double court is in poor condition and exhibits multiple full length and width cracks, as depicted on Page 13 of **Exhibit A Photographs**. These courts are subject to soil movements and have useful lives of 20- to 25-years. In consideration of the observed condition and to maintain a safe playing surface, we recommend the Association anticipate replacement of the double tennis court by 2013 and again by 2038. We recommend Fairlington Mews budget for replacement of the single tennis court by 2016. We note this information on Line Items 4.860 and 4.861 of **Exhibit B Reserve Expenditures**. We recommend replacement of the tennis standards from the operating budget on an as needed basis.

Pool Elements

Concrete Deck - A concrete deck with a waterproof membrane surrounds the pools and comprises approximately 7,900 square feet. The deck is in fair condition at an age of up to 31 years. The useful life of a concrete pool deck is up to 60 years. However, we recommend the Association conduct an inspection, partial replacements and repairs to the deck every 8- to 12-years. Soil movement and water infiltration underneath the concrete deck can cause

significant settlement and cracks in the concrete. The pool deck should also be free of trip hazards for the safety of residents and their guests. The concrete deck utilizes a pedestrian friendly waterproof coating. The coating is in fair to poor condition and exhibits cracks, as depicted on Pages 14 and 15 of **Exhibit A Photographs**. We recommend the Association anticipate the need to overlay the waterproof membrane every four years beginning by 2017 after its near term total replacement.

We recommend the Association plan complete replacement of the waterproof membrane in addition to partial replacements of up to ten percent (10%) of concrete sections, crack repairs, mortar joint repairs and caulk replacement beginning by 2013 and every 12 years thereafter except during replacement of the pool. The times, amounts and related costs of these repairs and replacements may vary. However, we judge the amounts shown on Line Items 6.200 and 6.201 of **Exhibit B Reserve Expenditures** sufficient to budget appropriate reserves.

Fences, Chain Link - Vinyl coated chain link fences surround the pools and comprise 430 linear feet. We note rust at the fences and warping of the chain mesh. The fences have a useful life of up to 35 years. Based on their condition, we recommend the Association budget for replacement of the chain link fences by 2016. We include this information on Line Item 6.400 of **Exhibit B Reserve Expenditures**.

Furniture - Associated furniture and fixtures at the pools include chairs, lounges, tables, ladders and life safety equipment. The condition of these items is poor overall. Pool furniture has a useful life of up to 12 years with the benefit of ongoing maintenance. Management informs us the Association will replace the pool furniture in 2011 at an estimated cost of \$20,000. We

recommend subsequent replacement of the pool furniture and fixtures by 2022 and every 11 years thereafter. The pool furniture replacement unit cost includes replacement of the pool ladders as needed. The times and costs of these replacements may vary. However, we judge the amounts shown on Line Item 6.500 of **Exhibit B Reserve Expenditures** sufficient to budget appropriate reserves.

Mechanical Equipment - The pool mechanical equipment comprises water filters, automatic chlorinators, water circulation pumps, controls, interconnected pipe, fittings and valves. The age and the condition of the pool mechanical equipment varies. Pool mechanical equipment has a useful life of 12- to 15-years. We recommend the Association anticipate replacement of up to twenty-five percent (25%) of the pool mechanical equipment every three years beginning by 2012. We consider interim replacement of motors and minor repairs as normal maintenance. We note this information on Line Item 6.600 of **Exhibit B Reserve Expenditures**.

Plaster Finish - The pool wall and floor surfaces have a plaster finish of 3,320 square feet based on the horizontal surface area. This quantity includes the wading pool. The pool plaster appears in good overall condition at an age of one year. This type of pool finish deteriorates with time and requires periodic maintenance and replacement. Removal also provides the opportunity to inspect the pool structure and to allow for partial repairs of the underlying concrete surfaces as needed. We anticipate the need for only minor repairs to the pool structure with consideration of the age and present observed visual condition. We recommend the Association anticipate the need to replace the plaster finish and conduct related repairs every 8- to 12-years to maintain the integrity of the pool structure. We recommend the Association

budget for replacement of the plaster finish and partial replacements of the scuppers, tiles, sealants, coping and partial concrete structure repairs by 2019 and every ten years thereafter. We include this information on Line Item 6.800 of **Exhibit B Reserve Expenditures**.

Rest Rooms - The Association maintains two common area rest rooms at the pool. The components of these rest rooms include painted walls, plastic flooring, various light and plumbing fixtures, and toilet partitions. The components are primarily in poor overall condition at an age of 31 years. Periodic renovations of the rest rooms are an astute practice to maintain a positive overall appearance of the Association. The useful life of rest room components varies up to 30 years. Management informs us the Association will expend approximately \$27,000 plus inflation in 2011 to fund renovations of the rest rooms. We recommend the Association budget for subsequent renovation of the rest rooms by 2040. We include an allowance of \$13,500 plus inflation per rest room on Line Item 6.833 of **Exhibit B Reserve Expenditures** for these renovations. The Association should verify the rest room renovations comply with the Americans with Disability Act (ADA).

Structure - The concrete pool structure visually appears in good condition at an age of 31 years. The concrete floor and walls have a plaster finish. This finish makes it difficult to thoroughly inspect the concrete structure during a noninvasive visual inspection. An invasive inspection of the structure is beyond the scope of this Reserve Study. Therefore, we base our recommendations for its eventual replacement on historical information provided by Management, its age of 31 years, our experience of observing many other pool structures and an anticipated total useful life of up to 60 years. A concrete deck of 7,900 square feet surrounds the pool. The Association has replaced minor portions of the deck. Its condition is fair overall.

The need to replace a pool structure depends on the condition of the concrete structure, the condition of the embedded or concealed water circulation piping, possible long term uneven settlement of the structure, and the increasing cost of repair and maintenance. Deterioration of any one of these component systems could result in complete replacement of the pool. For example, deferral of a deteriorated piping system could result in settlement and cracks in the pool structure. This mode of failure is more common as the system ages and deterioration of the piping system goes undetected. For reserve budgeting purposes, we recommend Fairlington Mews fully fund for the possible need to replace the pool by 2036 including the concrete deck and fences. The time and cost of this replacement may vary. However, we judge the amount shown on Line Item 6.900 of **Exhibit B Reserve Expenditures** sufficient to budget appropriate reserves.

Reserve Study Update - An ongoing review by the Board and an Update of this Reserve Study in two- to three- years are necessary to ensure an equitable funding plan since a Reserve Study is a snapshot in time. Many variables change after the study is conducted that may result in significant overfunding or underfunding the reserve account. Variables that may affect the Reserve Funding Plan include, but are not limited to:

- Deferred or accelerated capital projects based on Board discretion
- Changes in the interest rates on reserve investments
- Changes in the *local* construction inflation rate
- Additions and deletions to the Reserve Component Inventory
- The presence or absence of maintenance programs
- Unusually mild or extreme weather conditions
- Technological advancements

Periodic updates incorporate these variable changes since the last Reserve Study or Update.

The Association can expense the fee for an Update with site visit from the reserve account. This fee is included in the Reserve Funding Plan. We base this budgetary amount on updating the same property components and quantities of this Reserve Study report. Budgeting for an Update demonstrates the Board's objective to continue fulfilling its fiduciary responsibility to maintain the commonly owned property and to fund reserves appropriately.

Explanation of the Exhibits

Exhibit A *Photographs* documents the conditions of various property components as of the date of our visual inspection, December 14, 2009. The previous section, Condition Assessment, contains several references to these photographs.

Exhibit B *Reserve Expenditures and Reserve Funding Plan* covers a 30-year period. Information about the Reserve Components and Expenditures for the most relevant next 20 years (2010 through 2030) is found on two convenient 11- by 17-inch foldout spreadsheets. The remaining ten years (2031 through 2040) follow in two concise 8½- by 11-inch tables. Data for each Reserve Component is presented on a single row with columns of information as follows:

- Line Items are included for reference purposes
- Total Quantities are the total anticipated quantity for replacement during the next 30 years (*this is not necessarily the “total” quantity maintained by the Association as this quantity may represent more than one Useful Life cycle or a partial replacement*)
- Per Phase Quantities are the anticipated quantity for each replacement event
- Units clarify the unit of measure used to quantify the elements
- Reserve Component Inventory identifies each Reserve Component
- The Estimated First Year of Replacement is included to help the Association understand the priority of future Reserve Expenditures
- Results of the Life Analysis show both the total Useful Life and Remaining Useful Life for each Reserve Component
- Unit Cost is the cost per unit we used to calculate the per phase cost
- The 2010 Cost of Replacement Per Phase is the per phase cost in today’s dollars
- The Total Future Costs of Replacement is the total cost for all phases of replacement during the next 30 years and *includes* the effects of inflation at a 3.8% annual percentage rate
- The remaining columns in Reserve Expenditures 11- by 17-inch foldout spreadsheets present the estimated future inflated costs for each for the next 20 years

- The remaining ten years of future Reserve Expenditures from years 2031 to 2040 follow in a concise 8½- by 11-inch table


Exhibit B Reserve Funding Plan includes the Cash Flow Analysis and recommended Reserve Contributions for the next 30 years based on the Reserve Expenditures and a At the Direction of the Board and Management, we exclude reinvesting earned interest into Reserves. annual percentage rate earned on the average annual fund balances. The specific information found on the last 11- by 17-inch foldout spreadsheet includes:

- Reserves at Beginning of Year
- Recommended Reserve Contribution (positive cash flow)
- Estimated Interest Earned
- Anticipated Expenditures (negative cash flow)
- Anticipated Reserves at Year End
- Predicted Reserves (based on current funding levels)

Exhibit C Reserve Funding Graphs contains one graph and a pie chart based on the numerical data found in the Reserve Funding Plan. The graph illustrates our recommendations and observations pertaining to reserve balances, recommended annual Reserve Contributions and Reserve Expenditures during the next 30 years.

The graph Recommended Reserve Funding Plan shows the following data points:

-- -- Recommended Reserve Balances that are the result of expenditures as matched against existing reserves and contributions to reserves

 Recommended Reserve Contributions or additional assessment that increase reserves

 Reserve Expenditures

The pie chart Estimated Future Reserve Expenditures illustrates the relative importance of the Reserve Expenditures and relative funding during the next 30 years. Fairlington Mews can regard reserve needs for these expenditures as requiring a similar allocation of existing reserves and future Reserve Contributions.

Exhibit D describes Assumptions of the Reserve Study of how we collect and analyze data. The statement of Professional Service Conditions identifies the general manner of professional services provided, as stated in the original authorized Confirmation of Services for this Reserve Study.

Exhibit E *Credentials* contains the Qualifications of the Firm, Responsible Advisor and Review Coordinator. Theodore J. Salgado and John P. Poehlmann are the Principals of Reserve Advisors, Inc., Michael S. Bentley conducted the visual inspection of Fairlington Mews Condominium Association and Justin J. Maier served as Review Coordinator for this Reserve Study.

