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**GJB Engineering, Inc.**

*providing quality engineering with personal service*

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August, 2003

Lafayette Village Homeowners Association

Re: Replacement Reserve Study Update

### **Introduction**

Enclosed please find our updated replacement reserve schedule for the Lafayette Village community. Our update document incorporates pertinent site data from the original report prepared by this firm in 1992 and contains modifications in presentation format and useful life scheduling as well as other modifications based on our current site inspection of the property and discussions with management.

Noteworthy modifications include the following items:

- Remaining and Useful Life Estimates are revised to reflect the actual age and condition of the noted items. Site inspections were conducted to visually assess the actual condition of all noted items.
- Unit Costs are revised to reflect current market conditions to replace/restore noted items and to reflect upgraded materials that were utilized in certain restoration projects.
- Reserves On Hand balance is revised to reflect the current reserve account balance as provided by management.
- Painting is removed from the pool building reserve category, as this is not typically considered a capital improvement. Painting should be funded through the community's operating account.

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## Comments

### *Asphalt Pavements*

Asphalt pavements of the type found at Lafayette Village are typically milled down and resurfaced, rather than completely replaced, when they reach the end of their useful life. No records outlining previous pavement restoration work are available at the time of this draft report. It does appear that the community has performed a pavement overlay in the not too distant past based on our site inspection of all community streets. We are assuming that this work was completed 5 years ago in this draft report.

Original pavement installations are typically estimated to have a useful life of 16 to 20 years in the Northern Virginia area. Resurfacing will generally have a shorter life span than the original pavement installation and is estimated between 10 to 14 years. The actual life of a resurfacing restoration is highly dependent on the extent and quality of repair and preparation work that must be performed prior to overlay installation.

Existing pavements were found in generally adequate and sound condition. Potential minor pavement drainage deficiencies were noted during our inspections. It is important that potential drainage problems are carefully reviewed prior to the next major overlay restoration to mitigate creating new or exacerbating any existing drainage deficiencies.

### *Crack Seal/Pavement Repair*

An estimated 5% of the total asphalt pavement area is assumed to require repairs every 5 years and this item is shown in the reserve schedule on this restoration cycle. We have set the remaining life of the current cycle at 3 years based on the current pavement conditions. All streets are beginning to show the need for crackfilling and minor areas of full depth patching.

### *Asphalt Seal Coat*

This item is presented in the reserve schedule as an optional pavement maintenance procedure and its inclusion does not constitute an endorsement by our firm for sealing products.

The life for sealcoating has been set at the beginning under the assumption the community intends to perform this maintenance in the next 5 years and to reserve for future coating applications. It does not appear that the community has performed a sealcoating in the recent past.

Asphalt sealcoating exists in two basic forms, which are generally marketed in the Northern Virginia area. The first is the more common coal tar sealer and the second is a product called Pavement Dressing Conditioner or Rejuvenator (PDC).

Coal tar sealers are generally touted as being able to extend the total life of an asphaltic pavement by approximately 3 to 5 years through the process of reducing the impacts of moisture from rain and harmful ultraviolet rays from the sun when applied on a regular basis over the life of a pavement.

PDC manufacturers and contractors claim that their product not only performs the same function as coal tar sealers, but that PDC actually "rejuvenates" the liquid asphalt in the pavement, by chemically changing the viscosity of the stiff, oxidized asphalt material. This is alleged to extend the life of the pavement from 5 to 7 years over the total lifespan of a pavement.

GJB Engineering, Inc. has had principals from both types of sealing companies give presentations to our firm on their products, the purported benefits and associated costs in the past. Based on the information provided to date and our conversations with these contractors, it is our opinion that the cost of sealing asphalt pavement may not financially justify the stated benefits from an engineering aspect for at this time. The sealers do, however, provide a uniform "blacktop" appearance, which does have some aesthetic merit worthy of consideration. This uniform appearance may be particularly desirable on streets that have or are scheduled for significant areas of asphalt patching.

#### *Concrete Replacement*

An estimated 5% of the concrete curb/gutter and sidewalk is assumed to require replacement every 6 years and these items are shown in the reserve schedule on this restoration cycle. We have set this cycle at the beginning (remaining life = 6 years) based on the concrete conditions observed.

#### *Entrance Signs*

The two wooden community name signs are beginning to show their age. We have assigned a remaining life of 4 years to the signs based on their current condition. It is reported that the community intends to replace the wooden signs with stone masonry construction in the near future. This future improvement can be incorporated in the next reserve study update.

remaining  
life  
4 years

#### *Retaining Walls*

This line item covers retaining walls located adjacent to Ashley Glen Road, Butterfield Lane, Peyton Forest Trail, and Hancock Forest Trail. The walls adjacent to Ashley Glen

and Butterfield are reported to have been replaced within the past 5 years. The walls adjacent to Peyton Forest and Hancock Forest were found in generally adequate condition. The remaining life of 15 years shown in the reserve schedule is a weighted average for all the walls that takes into account their size, estimated age, and current condition.

### *Pool & Pool Building*

The swimming pool and adjacent brick building are found in generally adequate condition and appear to be well maintained.

The building is in need of minor painting of the trim on the roof gables. The veneered particle board sink counters in both the men's and women's room are beginning to warp and we recommend replacement with a waterproof material for extended longevity. The building roof appears "newer", however there are a couple of missing shingles that need to be replaced. The roof gutter spikes are pulling out in several locations need re-nailing.

ACC  
inspect

The pool deck has extensive network cracking that is indicative of imminent failure in the not too distant future. Fortunately, most of the cracks have been caulked to prevent surface water intrusion. Several of the pool coping tiles are in need of resetting/regrouting. It is very important to immediately follow up on any suspected water leaks from the pool and filtration system. Excessive water level drop (beyond normal evaporation) or unusually high water meter readings are definite indicators of water problems. A complete and thorough inspection of and pressure testing of the pool plumbing system should be performed immediately upon any indication of leaks.

### *Tot Lot*

This facility should be inspected in the spring to ensure that the grounds and all equipment are in safe order for the new play season. Equipment should be reviewed for structural soundness and moving mechanical parts checked for wear.

The tot lot is recently upgraded and all equipment appears of quality construction.

### **Reserve Schedule**

The spreadsheet of anticipated replacement/repair quantities and costs is presented and enclosed as Attachment A. Brief descriptions of each column on the spreadsheet are summarized below:

#### Quantity

The estimated amount of the item which is to be replaced.

Cost/Unit

The unit cost of replacement for that item.

Total Cost

The item Quantity multiplied by the Cost/Unit

Total Estimated Useful Life

The total useful life expected of an item

Estimated Remaining Useful Life

This represents the expected remaining useful life of an item. For items of repetitive or short duration, estimated remaining life is set at total life so as not to skew final results for the annual deposit computation.

Estimated Original Objective

The amount, in current day dollars, that should have been set aside each year since the first year of an item's life. The amount reserved by the community to date does not affect this computation. It is computed by dividing the Total Cost by the Total Useful Life.

Reserves on Hand

The spreadsheet divides the existing reserve account balance given to us by the Association or management by proportioning each amount according to its relative Total Cost. Please note that the amounts in this column may not necessarily match proportion schedules or account divisions that the community has set up for the various replacement items.

Estimated Annual Deposit

The Total Cost minus the Reserves on Hand divided by the Estimated Remaining Useful Life.

Attachment A is based in part on financial information obtained from the Association or their agents. The existing reserve account balance, as reported by management, of approximately \$123,990 has been proportionally allocated among all reserve line items based on a ratio of the line items replacement cost divided by the total replacement cost of all line items. This allocation of existing funds may not match existing fund breakdowns currently utilized by the Association.

Based on information supplied by the Association along with our computations and measurements, it is our professional opinion that annual reserve contribution will need to be approximately \$87,569 to adequately fund the reserve account at a 100% funding level. When this amount is compared to the estimated original objective of \$49,422, it appears that the reserve account may have been under-funded in the past. Note that this is a draft issue of the reserve study and is subject to revision upon review by the community board, management, and this firm as we iterate towards the final product.

Our computations utilize a segregated method approach wherein a contribution rate for each reserve schedule line item is determined and then summed together with adjustments for existing reserve funds. Other methods of computing annual contribution levels exist, and while these methods may not be as conservative in their analysis, they may be appropriate for Lafayette Village. A financial advisor should be consulted to determine the suitability of alternate contribution methods. Any alternative contribution method considered should utilize the replacement costs, and useful and remaining life estimates contained in this report.

### **Qualifying Statements**

This study was prepared exclusively from information obtained through public record, public officials, and the Association. Therefore, the information contained within should be considered approximate. All of these sources are assumed to be generally acceptable for the purposes of this study. Nothing in this study should be construed as representing construction information. Items not specifically listed in Attachment A have not been considered.

GJB Engineering, Inc. has prepared this study for the sole and exclusive use of the Lafayette Village Homeowners Association and will not accept responsibility for any action resulting from the use or distribution of this study to or by others for purposes other than those intended by our firm. No field survey or subsurface investigations were conducted as a part of this study, although site visits were made to confirm the approximate quantity and/or existence/non-existence of certain features.

This study does not guarantee that potential problems do not exist that were not apparent given the type of information available or inspection conducted or that relate to subjects beyond or unrelated to the scope of this study, such as structural engineering or architectural design.

The assessments listed in this report were limited to visual, non-destructive observations of readily accessible, non-hazardous areas and did not include an inspection of any items for compliance with federal, state, or local codes or ordinances. Where violation of codes or ordinances is suspected, it has been noted in the report. The inspections do no

constitute a warranty of those items inspected or estimated, but merely a visual observation of the subject property.

The costs outlined above should be considered approximate. Actual replacement costs may differ significantly from the projections in the analysis due to factors such as maintenance practices, inflation, market conditions and variations in prices based on bid date and specific client requirements, future technological developments, regulatory actions, and other unforeseeable factors. Costs listed in this report are based on present day dollars only and will require a financial analysis to determine the various reserve schedules which could be employed.

GJB Engineering appreciates the opportunity to be of service to the Lafayette Village community. Please contact us at your convenience with any questions or comments on our update study.

Sincerely,

Brian F. Cleary, PE  
Civil Engineer

Gregory J. Budnik, PE  
President

**ATTACHMENT A**

*Replacement/Repair Costs*

**Lafayette Village Homeowners Association**

*November 2003 Update Final Issue*

**RESERVE SCHEDULE**

ITEM	QUANTITY	COST PER UNIT	ESTIMATED TOTAL		EST'D		EST'D ORIGINAL OBJECTIVE	EST'D RESERVES ON HAND	EST'D ANNUAL DEPOSIT
			CURRENT REPLACE COST	USEFUL LIFE	REMAIN USEFUL LIFE	EST'D			
<i>Private Streets &amp; Parking</i>									
Asphalt Pavement Resurfacing	24,050	\$9.25 /sy	\$222,463	14	9	\$15,890	\$42,781	\$19,965	
Asphalt Seal Coat	24,050	\$0.80 /sy	\$19,240	5	5	\$3,848	\$3,700	\$3,108	
Crack Seal & Pvmt. Repair (@5% per cycle)	1,203	\$27.00 /sy	\$32,481	5	3	\$6,496	\$6,246	\$8,745	
Sidewalk Replacement (@5% per cycle)	1,650	\$7.00 /sf	\$11,550	6	6	\$1,925	\$2,221	\$1,555	
Curb/Gutter Replacement (@5% per cycle)	584	\$28.00 /lf	\$16,352	6	6	\$2,725	\$3,145	\$2,201	
Parking Lot Signs	1	\$8,150.00 /ls	\$8,150	15	9	\$543	\$1,567	\$731	
Parking Lot Striping & Curb Markings	1	\$8,500.00 /ls	\$8,500	5	2	\$1,700	\$1,635	\$3,433	
Entrance Signs	2	\$1,600.00 /ea	\$3,200	15	4	\$213	\$615	\$646	
Site Lights	22	\$1,500.00 /ea	\$33,000	30	9	\$1,100	\$6,346	\$2,962	
Site Amenities (Benches, Trashcans, Etc.)	1	\$5,000.00 /ls	\$5,000	12	6	\$417	\$962	\$673	
Retaining Walls and Fence	1	\$40,000.00 /ls	\$40,000	20	15	\$2,000	\$7,692	\$2,154	
Concrete Ditch	26	\$54.00 /sy	\$1,404	30	9	\$47	\$270	\$126	
Subtotal - Private Streets and Parking			\$401,340			\$36,905	\$77,180	\$46,298	
<i>Pool Building</i>									
Tuck Pointing	1,360	\$3.50 /sf	\$4,760	40	19	\$119	\$915	\$202	
Roof	20	\$275.00 /sq	\$5,500	20	15	\$275	\$1,058	\$296	
Commodos	4	\$525.00 /ea	\$2,100	40	19	\$53	\$404	\$89	
Urinals	2	\$850.00 /ea	\$1,700	40	19	\$43	\$327	\$72	
Sinks	4	\$300.00 /ea	\$1,200	20	5	\$60	\$231	\$194	
Toilet Stalls	4	\$875.00 /ea	\$3,500	20	12	\$175	\$673	\$236	
Windows	4	\$500.00 /ea	\$2,000	25	4	\$80	\$385	\$404	
Exterior Doors	6	\$500.00 /ea	\$3,000	25	14	\$120	\$577	\$173	
Interior Doors	4	\$500.00 /ea	\$2,000	25	14	\$80	\$385	\$115	
Interior Lights	12	\$375.00 /ea	\$4,500	40	19	\$113	\$865	\$191	
Exterior Lights	5	\$175.00 /ea	\$875	25	12	\$35	\$168	\$59	



**ATTACHMENT A**

*Replacement/Repair Costs*

**Lafayette Village Homeowners Association**

*November 2003 Update Final Issue*

**RESERVE SCHEDULE**

ITEM	QUANTITY	COST PER UNIT	ESTIMATED TOTAL		EST'D		EST'D ORIGINAL OBJECTIVE	EST'D RESERVES ON HAND	EST'D ANNUAL DEPOSIT
			CURRENT REPLACE COST	USEFUL LIFE	USEFUL LIFE	REMAIN			
Post Mounted Exterior Lights	5	\$1,500.00 /ea	\$7,500	30	9	\$250	\$1,442	\$673	
Water Fountain	1	\$700.00 /ea	\$700	25	17	\$28	\$135	\$33	
Hot Water Heater	1	\$2,700.00 /ea	\$2,700	12	7	\$225	\$519	\$312	
Exterior Trim	290	\$10.00 /sf	\$2,900	25	4	\$116	\$558	\$586	
Gutters/Downspouts	142	\$5.00 /lf	\$710	25	4	\$28	\$137	\$143	
Repair Water Service Line	1	\$1,500.00 /ls	\$1,500	30	9	\$50	\$288	\$135	
Interior Privacy Wall Partitions	2	\$300.00 /ea	\$600	20	12	\$30	\$115	\$40	
Door Hardware	9	\$125.00 /ea	\$1,125	15	7	\$75	\$216	\$130	
Bike Rack	1	\$500.00 /ea	\$500	25	4	\$20	\$96	\$101	
Entrance Sign	1	\$1,600.00 /ea	\$1,600	15	12	\$107	\$308	\$108	
Exterior Cedar Privacy Fence	24	\$25.00 /lf	\$600	20	2	\$30	\$115	\$242	
Subtotal - Pool Building			\$51,570			\$2,111	\$9,917	\$4,535	

*Pool*

Main and Wading Coping Band	369	\$29.00 /lf	\$10,701	20	5	\$535	\$2,058	\$1,729
Main and Wading Caulk Coping Band	385	\$6.75 /lf	\$2,599	7	2	\$371	\$500	\$1,049
Main and Wading Whitecoat	1	\$13,500.00 /ls	\$13,500	12	7	\$1,125	\$2,596	\$1,558
Main and Wading Ceramic Tile Band	369	\$23.00 /lf	\$8,487	15	5	\$566	\$1,632	\$1,371
Main Pool Filter	1	\$9,000.00 /ls	\$9,000	20	5	\$450	\$1,731	\$1,454
Main Pool Pump and Strainer	1	\$5,000.00 /ea	\$5,000	30	9	\$167	\$962	\$449
Main Pool Pump Bearings	1	\$800.00 /ea	\$800	5	4	\$160	\$154	\$162
Wading Pool Pump	1	\$750.00 /ea	\$750	20	5	\$38	\$144	\$121
Wading Pool Filter	1	\$750.00 /ea	\$750	20	5	\$38	\$144	\$121
Skimmers	11	\$660.00 /ea	\$7,260	12	6	\$605	\$1,396	\$977
Concrete Deck Repairs	6,200	\$7.25 /sf	\$44,950	25	4	\$1,798	\$8,644	\$9,076
3' Chain Link Fence	45	\$11.25 /lf	\$506	30	9	\$17	\$97	\$45
6' Chain Link Fence	396	\$14.50 /lf	\$5,742	30	9	\$191	\$1,104	\$515
Pool Furniture	1	\$13,000.00 /ls	\$13,000	15	10	\$867	\$2,500	\$1,050

**ATTACHMENT A**

*Replacement/Repair Costs*

**Lafayette Village Homeowners Association**

*November 2003 Update Final Issue*

**RESERVE SCHEDULE**

ITEM	QUANTITY	COST PER UNIT	ESTIMATED CURRENT REPLACE COST	TOTAL EST'D USEFUL LIFE	EST'D REMAIN USEFUL LIFE	EST'D ORIGINAL OBJECTIVE	RESERVES ON HAND	EST'D
								ANNUAL DEPOSIT
Fresh Water Supply System	1	\$1,500.00 /ls	\$1,500	30	9	\$50	\$288	\$135
Deck Equipment	1	\$20,000.00 /ls	\$20,000	20	11	\$1,000	\$3,846	\$1,469
Subtotal - Pool			\$144,545			\$7,977	\$27,797	\$21,281
<i>Tot Lot &amp; Recreation Area</i>								
Tot Lot	1	\$30,000.00 /ea	\$30,000	20	19	\$1,500	\$5,769	\$1,275
Basketball court resurfacing	1	\$2,100.00 /ls	\$6,750	15	9	\$450	\$1,298	\$606
Volleyball court resurfacing	1	\$1,800.00 /ls	\$5,750	20	1	\$288	\$1,106	\$4,644
Basketball Goals	2	\$1,800.00 /ea	\$3,600	25	4	\$144	\$692	\$727
Volleyball Poles	2	\$600.00 /ea	\$1,200	25	4	\$48	\$231	\$242
Subtotal - Tot Lots & Rec Areas			\$47,300			\$2,430	\$9,096	\$7,495
Total			\$644,755			\$49,422	\$123,990	\$79,608
Contingency (10%)								\$7,961
GRAND TOTAL								\$87,569

**NOTES:**

- Items shown with a percent figure are replaced in ongoing cycles. The amount listed under "Quantity" is that percentage of the total site quantity measured which is estimated to require replacement within the cycle interval. The cycle interval is stated as the "Estimated Useful Life".
- Please refer to the reserve report update for additional information on this schedule.

**LEGEND**

- |                  |                            |
|------------------|----------------------------|
| ls = lump sum    | ea = each                  |
| lf = linear foot | vlf = vertical linear foot |
| sy = square yard | set = set                  |
| sf = square feet | sq = square                |