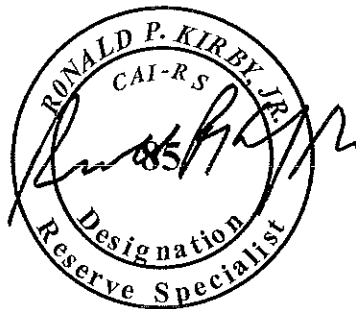
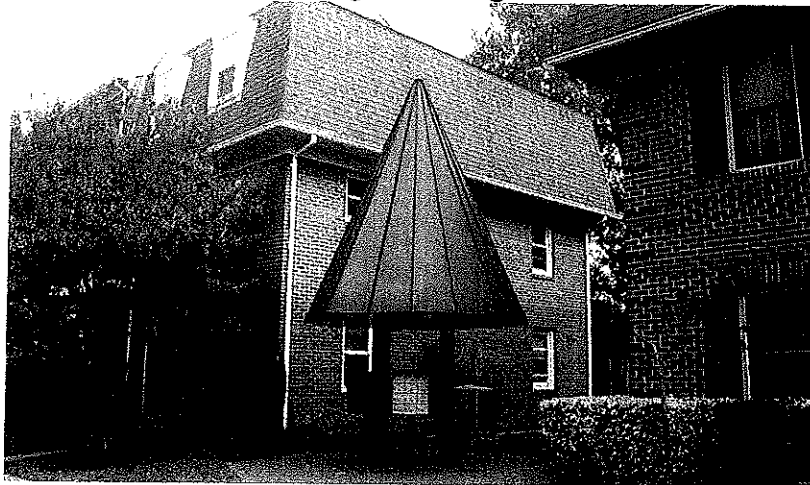


***FY 2017
REPAIR AND REPLACEMENT
RESERVE STUDY***

for

Dominion Square Townhouse Condominium

Arlington, Virginia



**Ronald P. Kirby, JR., RS
CMC Engineering**

October 18, 2016

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Executive Summary

This is a Level II Update, With Site Visit/On-Site Review as defined by CAI's National Reserve Study Standards. The on-site visit of the property was performed on October 4, 2016.

The association's FY begins January 1st.

The association is currently projected to have about \$76,400 in the Reserves at the start of its fiscal year. The reserve calculations were made using this amount.

We provide two funding options for the boards review: The first option (increasing contribution) shows a 1% annual increase (if needed) as in the previous study (see 20 Year Cash Flow Chart on page A3). The second option shows a constant level contribution for the life of the study (20 Year Cash Flow Chart on page A4).

In this study we rely less on trying to predict exactly when work will be needed but do design the reserves to ensure the association is financially prepared for when the work is needed.

Our analysis indicates:

- Based on our projections we show the reserve contribution would need to increase to \$15,900 beginning in FY17 with an annual increase of 1% each year (if needed) (See 20 Year Cash Flow Chart on page A3). If in any given year the projected expenses are not met, the 1% increase may not be needed in the following year. The recommended FY17 increase of \$960 over the current contribution of \$14,940 would equate to an average per unit increase of \$20 or \$1.67 per month. The future 1% annual increases (if needed) would equate to an average per unit per year increase of \$3.30 - \$4.30 per year through the projected low period in FY44.
- If the level contribution option is chosen the annual contribution would need to increase to \$18,200 beginning in FY17 (see 20 Year Cash Flow Chart on page A4). Note: in the increasing contribution option, this level of contribution would not be reached until FY31. Since the projected low period is not projected for many years we feel the increasing contribution option will provide less of an initial financial burden on the owners.
- Note: we do not include interest and inflation factors in this study as we feel they are unreliable, especially when projecting into the distant future. Additionally we find that not all components cost inflate at the same rate. We have found that most near term inflation is usually offset by the interest earned on reserve funds and recommend that future inflation be addressed as you go when doing future reserve study reviews and or updates.

There are two methods of determining the required Reserve Contribution: The **Cash Flow Method** and the **Component Method**.

The **Component Method** develops the Reserve Funding Plan based on the sum of contributions for individual components. This method of funding usually results in relatively high annual contributions and fund balances.

This study was calculated using the **Cash Flow** method - This method develops a reserve funding plan where annual contributions to the reserves are designed to offset the variable annual expenditures from

the reserves. Different reserve funding plans are tested against the anticipated schedule of reserve expenses until the desired funding goal is achieved.

The funding goal used in this study is: **Threshold Funding** – this method is designed to keep the reserve balance above a specific dollar amount or percent funded amount. In this reserve study the threshold is set to keep the Reserve balances above \$25,000 (see 20 Year Cash Flow Charts on pages A3 & A4).

All costs in this study are expressed in constant dollars.

Introduction

The purpose of this study is to design a **Table of Repair/Replacement Reserves** for the common and limited common elements of the property to establish an annual reserve contribution to fund predictable future expenditures for the repair and replacement of these property components. Our goal when designing this study is to ensure that the association is always financially prepared to do what ever is needed in maintaining the property components.

Typically associations fund capital repairs and replacements in one of three ways:

- 1) Special assessments collected from the owners when major work is needed.
- 2) Acquiring a loan using borrowed capital for major repair and replacement projects.
- 3) A level monthly reserve contribution to fund expected future repair and replacement projects.

Our goal is to establish a reasonable reserve contribution that would avoid the need for special assessments and acquiring loans. This will also ensure that every owner pays their fair share for the time that they own their property. Loans and special assessments only penalize the owners that are present at the time the work is needed.

Example:

If a component has a replacement cost of \$1,000 and an average useful life of 10 years, by straight calculations a contribution of \$100 per year should be made to the reserves.

If the contribution level is suppressed and only \$50 per year is contributed to the reserves, the result would be a \$500 short fall. Additionally if one owner owns his or her property for the first 8 years and then sells their unit, that owner should have paid their share of \$800, but at the suppressed contribution level they only paid their share of \$400. In the 10th year when the component is due for replacement the new owner has to pay their share of the \$200 for the two years that they owned as well as the share of the previous owners \$400 short fall.

It is important to note that a reserve study is a valuable budget management tool not a work plan. The useful life of each component is based on averages. The remaining useful life, which is based on the age of the component and its existing condition, is the point at which the association should be financially prepared to replace/repair that component. This does not suggest that if the component has reached its average useful life that the component should be repaired/replaced if it is not failing.

In developing the table we consider items that have a predictable life cycle as well as those that will most likely need annual repairs to extend the useful life of the component.

Although we use generally accepted techniques and the best information available, it is possible actual costs and useful life can vary from our estimates.

Current cost estimates are based on similar work recently performed on other local properties, estimating publications and software, information provided by local contractors and other reliable sources.

This study does not consider correcting hazardous or defective conditions associated with asbestos, radon, lead, mold, etc. unless otherwise noted in this report

Different Levels of Work

There are three levels of work necessary to properly care for equipment and property components.

- 1) Maintenance – typically this is the least expensive and most important task that is performed on property components. Good maintenance extends the useful life of property components and keeps them in good working order.
- 2) Repair - replacing a portion of an item to keep the component as a whole in good working order. Repair is usually more expensive than maintenance but less expensive than total replacement. If repairs are excessively expensive a cost analysis should be performed to determine if replacement of the item is more economical.
- 3) Replacement - involves the entire replacement of the component.

DEFINITION OF ABBREVIATIONS

AN – An annual allowance for components without a predictable useful life.
AOH – Reserve fund Amount-On-hand at the start of the fiscal year.

EA - Each
CY - Cubic Yards
LF - Linear Feet
LS - Lump Sum

HP - Horsepower
SF - Square Feet
SY - Square Yards
TN - Tons

Definition of Terms

These definitions pertain to the categories shown in the Repair & Replacement Reserves Tables and Chart.

Property Component - The components on the property we believe the community should include in the reserves. If we have omitted or added any items that are not common or limited common area responsibility, please inform us so we can provide a revised table

Quantity – The approximate quantity and unit of measure of each component.

Average Useful Life – The average of how long a component should be expected to last before replacement is needed. Leading publications on useful life data, information from local contractors, our own experiences and historical trends are used to determine the average useful life.

Remaining Useful Life – The time remaining before we believe the associations should be financially prepared to replace a component. This is determined by the age and existing condition of the component. Providing good maintenance to a component can extend the remaining useful life beyond the average useful life of the component.

Replacement Cost – The amount we believe the association should set aside in today's dollars for the replacement of each component. These are budget numbers and could vary from actual bids to do the work. This assumes the association will competitively seek bids and obtain a fair price in today's market.

Recommended Contribution - The contribution needed to achieve the funding goal of this study.

Projected Annual Expenses – A table of expected expenditure for each component and the annual expenses from the reserves over the life of the study.

20 Year Cash Flow Chart – A chart showing the anticipated annual reserve balance based on the projected annual expenses and the recommended reserve contributions over the life of the study.

Components Description

In general, each item has been reviewed for current cost and remaining useful life and, where appropriate, changes have been made to reflect current conditions. Below we only comment on line items that have significant changes since the last study or that we feel may need additional clarifications.

Not all components have a predictable useful life; however we do recognize that most of these components will need periodic maintenance and or repair to keep them in good condition; therefore we include several average annual allowances throughout the tables to be able to fund such work when it may be needed. Some of these annual allowances are also intended to help maintain components that do have an average useful life. In many cases by providing good maintenance these components can exceed their useful life expectancy.

Pavements & Sidewalks

Pavement Overlay – based on the existing condition of the pavement surfaces and the report of recent seal coating applications in 2015, we have increased the average useful life of the pavements from 15 to 18 years.

Seal Coat & Striping – we show the association to be prepared to perform one more seal coating project before a total pavement overlay project may be needed.

Crack Fill/Base Repair Allowance - this line item is to fund the filling of any cracks or base fail areas that may occur to prevent water penetration into the pavement sub base that can cause additional damage to the pavement through freeze/thaw cycles. We also recognize that these types of expenditures will vary from year to year; therefore this average annual allowance of \$1,200 should also be viewed as an allowance to spend \$12,000 over a ten year period.

Sidewalks/Curbs/Steps – the association has replaced numerous sections of sidewalks since the last reserve study. We are also now informed that the association is responsible for the concrete entrance steps leading to individual units which we previously assumed were the responsibility of the individual owners for which the steps served. Although we never expect all of these components to need replacement at one time we do want to keep the association financially prepared for when repairs or replacements are needed. Therefore we have increased this average annual allowance from \$800 to \$1,500. Again we recognize that these types of expenditures will vary from year to year; therefore this average annual allowance of \$1,500 should also be viewed as an allowance to spend \$15,000 over a ten year period.

Site Items

Storage Shed – it is reported that the association plans to replace this shed in 2016; therefore we show the shed to have new useful life.

6' Board Fencing – it is reported that the association all fencing in 2011; therefore we show when we feel the association should be prepared to replace the fencing again. Repairs to isolated areas of the

fence that may be needed in the interim should be funded through the **Miscellaneous Fence Repairs** average annual allowance.

Brick Point-up/Repairs – this is a new line item based on the current brick project being performed on the unit entrance steps and to keep the association prepared for when this work may be needed again. Note: smaller scale brick repairs that may be needed in the interim should be funded through the **Miscellaneous Site Items** line item listed below.

Entrance Stair Coating/Repairs – previously we assumed these concrete stairways were the responsibility of the individual owners for which they served. Our inspection showed that most of these stairways have a protective coating while others do not. These concrete coatings can help protect the concrete from surface deterioration likely as a result of ice melt chemical applications. This new line item is to fund restoration and maintenance to individual stairways (as needed) which may include 1) re-capping of individual stairways 2) concrete coating applications to stairways with minor damage 3) concrete sealer or coating applications to stairways with no current damage to help protect the existing concrete. It is critical in any coating application to provide proper preparation of the concrete surfaces to ensure proper bonding of the new coatings by pressure washing all loose concrete, dirt, algae, etc. from the existing concrete. We also recommend that association encourage the owners to use more concrete friendly ice melt treatments.

Tree Removal/Trimming Allowance - Previously we showed this type of work to be funded through the **Miscellaneous Site Items** line item; however due to the reported past and planned expenses we now show this new average annual allowance to fund tree work on an as needed basis. Note: if needed this line item should still be supplemented by the **Miscellaneous Site Items** line item. This average annual allowance of \$2,500 should also be viewed as an allowance to spend \$25,000 over a 10 year period.

Miscellaneous Site Items – This average annual allowance is intended to be a "catch all" maintenance allowance to allow the association to fix what is needed when it is needed. Again we recognize that these types of expenditures will vary from year to year; therefore this average annual allowance of \$2,500 should also be viewed as allowance to spend \$25,000 over a ten year period.

Appendix

REPAIR AND REPLACEMENT RESERVE CALCULATIONS

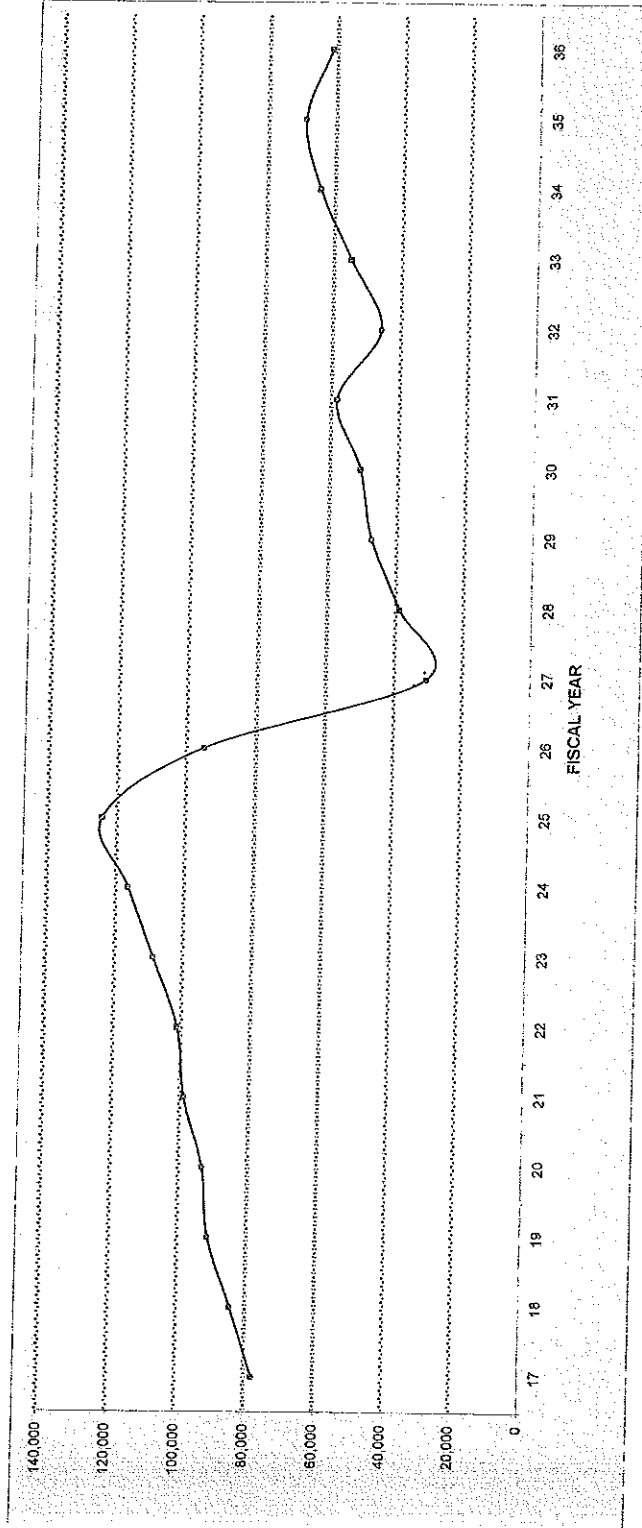
PROPERTY COMPONENTS	QUANTITY SIZE	UNITS	AVERAGE USEFUL LIFE (MRS)	REMAINING	REPLACEMENT COST	DISTRIBUTION OF CONTRIBUTION	RECOMMENDED CONTRIBUTION
PAVEMENTS & SIDEWALKS							
PAVEMENT OVERLAY	2,469	SY	18	9	35,800	2,070	
SEAL COATING & STRIPPING	2,469	SY	5	3	5,000	720	
CRACK FILL/BASE REPAIR ALLOW.		AN	1	0	1,200	700	
SIDEWALKS/CURBS/STEPS		AN	1	0	1,500	870	
TOTAL PAVEMENTS & SIDEWALKS							\$4,360
SITE ITEMS							
TRASH SHELTER ROOFING	528	SF	25	15	6,340	230	
TRASH SHELTER VENT PANELS	2	EA	25	15	2,400	90	
STORAGE SHED	1	LS	15	15	8,000	290	
SHELTER & SHED REPAIRS		AN	1	0	500	290	
MAIL KIOSKS PAINTING & REPAIRS	1	LS	5	4	1,500	170	
6' BOARD FENCING	2,180	LF	15	10	67,580	3,550	
MISC. FENCE REPAIRS		AN	1	0	1,200	700	
BRICK POINT-UP/REPAIRS	1	LS	20	19	16,000	460	
ENTRANCE STEPS COATING/REPAIRS	1	LS	5	0	5,000	2,890	
TREE REMOVAL/TRIMMING ALLOWANCE		AN	1	0	2,500	1,440	
MISC. SITE ITEMS		AN	1	0	2,500	1,440	
PICNIC TABLES, SIGNS, DRAINAGE, MINOR LANDSCAPING, TREES, MISC. PAINTING, MISC. LIGHTING, RETAINING WALLS, ETC.							
TOTAL SITE ITEMS							\$11,550
RESERVES TOTALS					\$157,020		\$15,900

PROJECTED ANNUAL EXPENSES

FISCAL YEAR	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
PAVEMENTS & SIDEWALKS																				
PAVEMENT OVERLAY	0	0	0	0	0	0	0	0	0	35,800	0	0	0	0	0	0	0	0	0	0
SEAL COATING & STRIPPING	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
CRACK FILL/BASE REPAIR ALLOW.	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500
SIDEWALKS/CURBS/STEPS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SITE ITEMS																				
TRASH SHELTER ROOFING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TRASH SHELTER VENT PANELS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STORAGE SHED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SHELTER & SHED REPAIRS	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500	500
MAIL KIOSKS PAINTING & REPAIRS	0	0	0	0	1,500	0	0	0	0	1,500	0	0	0	0	1,500	0	0	0	0	1,500
6" BOARD FENCING	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
MISC. FENCE REPAIRS	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200	1,200
BRICK POINT-UP/REPAIRS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENTRANCE STEPS COATING/REPAIRS	5,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TREE REMOVAL/TRIMMING ALLOWANCE	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
MISC. SITE ITEMS	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500
PICNIC TABLES, SIGNS, DRAINAGE, MINOR LANDSCAPING, TREES, MISC. PAINTING, MISC. LIGHTING,	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Totals	\$14,400	\$9,400	\$9,400	\$14,400	\$10,900	\$14,400	\$9,400	\$9,400	\$9,400	\$46,700	\$81,980	\$9,400	\$9,400	\$14,400	\$10,900	\$31,140	\$9,400	\$9,400	\$14,400	\$26,900

20 YEAR CASH FLOW CHART

BEGINNING BALANCE \$76,400 INTEREST 0.0%
 PERCENT FUNDED 148% INFLATION 0.0%



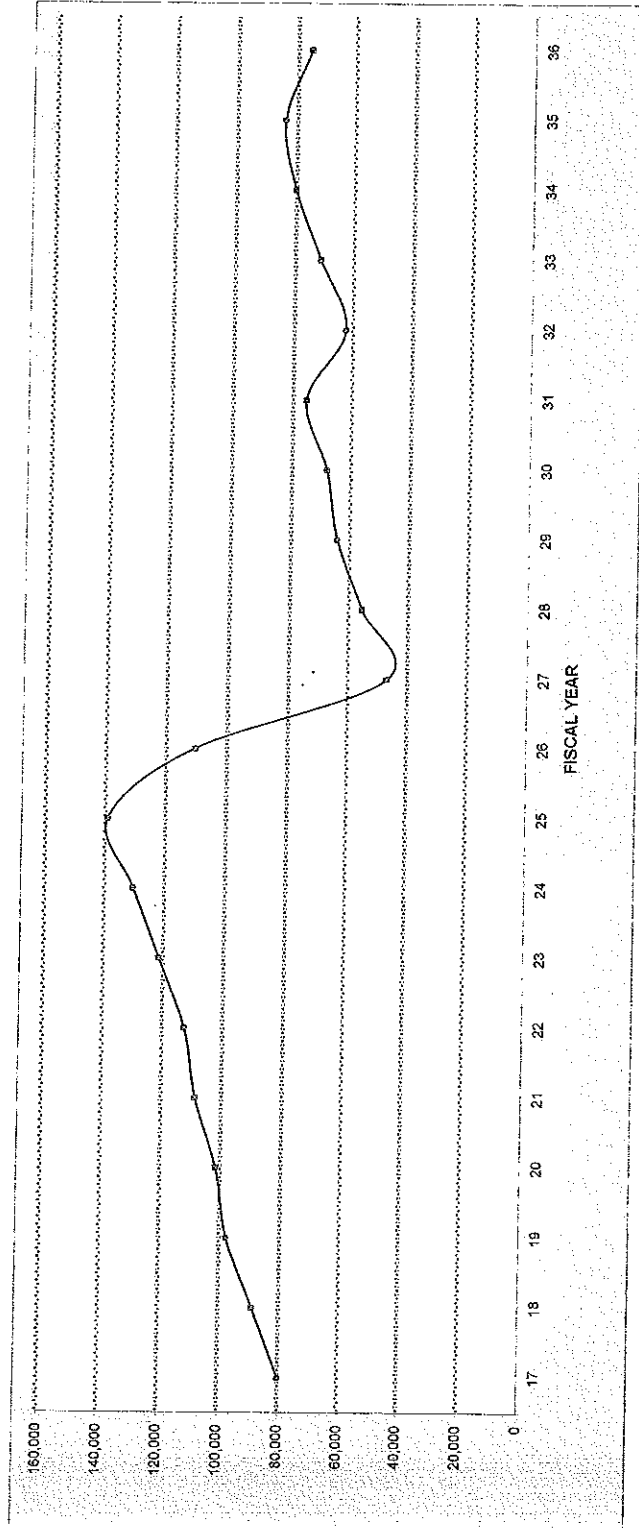
FISCAL YEAR	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ANNUAL EXPENSE	14,400	9,400	9,400	14,400	10,900	14,400	9,400	9,400	9,400	46,700	81,980	9,400	9,400	14,400	10,900	31,140	9,400	9,400	14,400	26,900
CONTRIBUTION	15,900	16,059	16,220	16,382	16,546	16,711	16,878	17,047	17,217	17,390	17,563	17,739	17,917	18,096	18,277	18,459	18,644	18,830	19,019	19,209
YEAR END BALANCE	77,900	84,560	91,380	93,360	99,010	101,320	108,800	116,450	124,270	94,960	30,540	38,880	47,400	51,100	58,480	45,800	55,040	64,470	68,090	61,400

NOTE: the annual contribution is shown to increase 1% each year (if needed) and is designed to maintain a minimum threshold (contingency) of \$25,000.

FISCAL YEAR	37	38	39	40	41	42	43	44	45	46
ANNUAL EXPENSE	14,400	9,400	9,400	14,400	10,900	81,980	9,400	45,200	14,400	10,900
CONTRIBUTION	19,401	19,595	19,791	19,989	20,189	20,391	20,595	20,801	21,009	21,219
YEAR END BALANCE	66,400	76,600	86,990	92,580	101,870	40,280	51,470	27,070	33,660	44,000

20 YEAR CASH FLOW CHART

BEGINNING BALANCE \$76,400 INTEREST 0.0%
 PERCENT FUNDED 148% INFLATION 0.0%



FISCAL YEAR	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36
ANNUAL EXPENSE	14,400	9,400	9,400	14,400	10,900	14,400	9,400	9,400	9,400	46,700	81,980	9,400	9,400	14,400	10,900	31,140	9,400	9,400	14,400	26,900
CONTRIBUTION	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200
YEAR END BALANCE	80,200	89,000	97,800	101,600	108,900	112,700	121,500	130,300	139,100	110,600	46,820	55,620	64,420	68,220	75,520	62,580	71,380	80,180	83,980	75,280

NOTE: the annual contribution is shown to be constant each year and is designed to maintain a minimum threshold (contingency) of \$25,000.

FISCAL YEAR	37	38	39	40	41	42	43	44	45	46
ANNUAL EXPENSE	14,400	9,400	9,400	14,400	10,900	81,980	9,400	45,200	14,400	10,900
CONTRIBUTION	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200	18,200
YEAR END BALANCE	79,080	87,880	96,680	100,480	107,780	44,000	52,800	25,800	29,600	36,900

Photographs



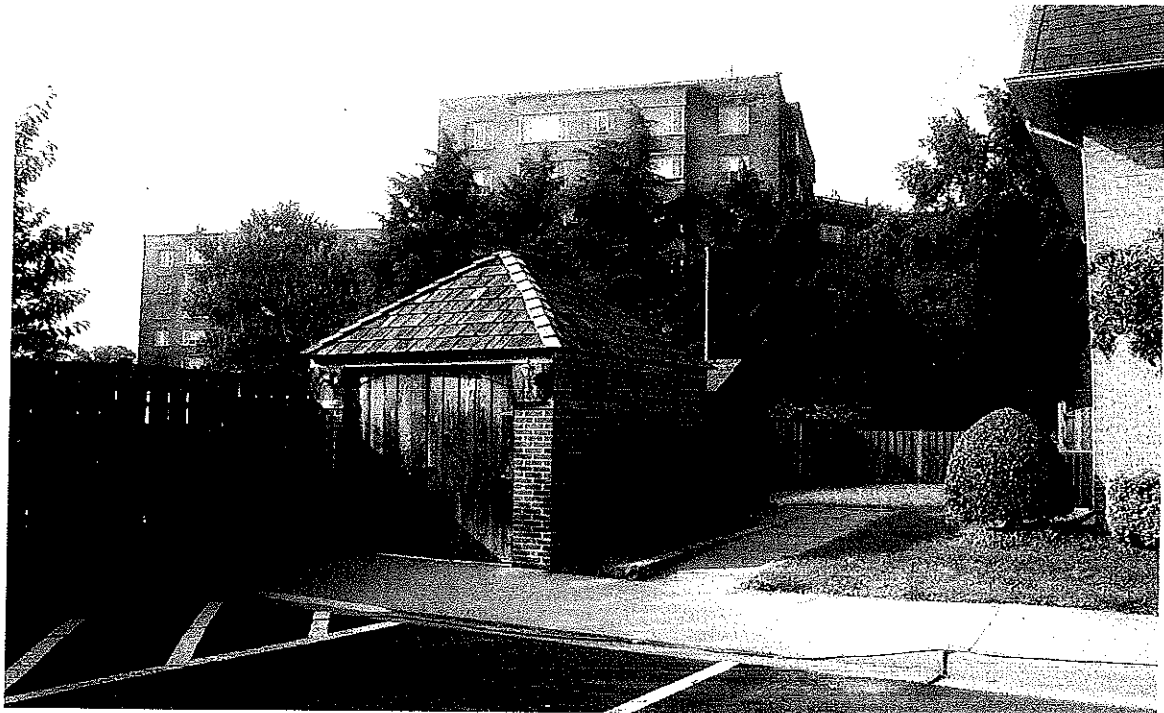
Previously filled asphalt cracks with new adjacent cracks.



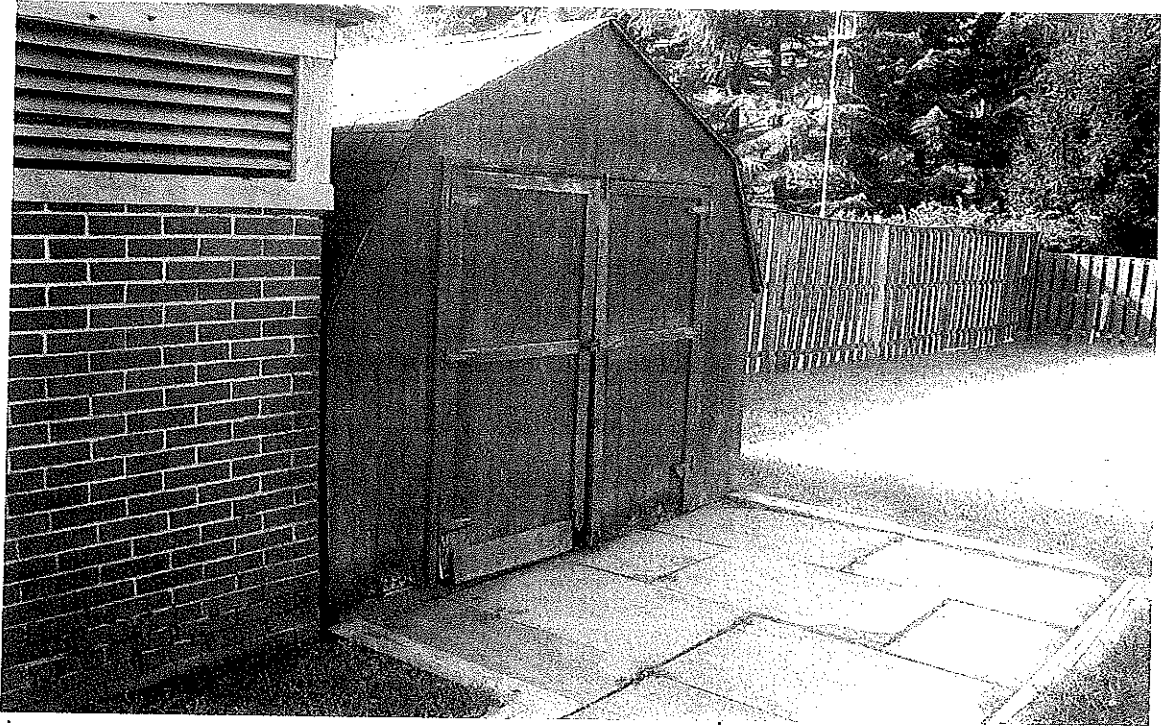
Another previously filled crack that has extended.



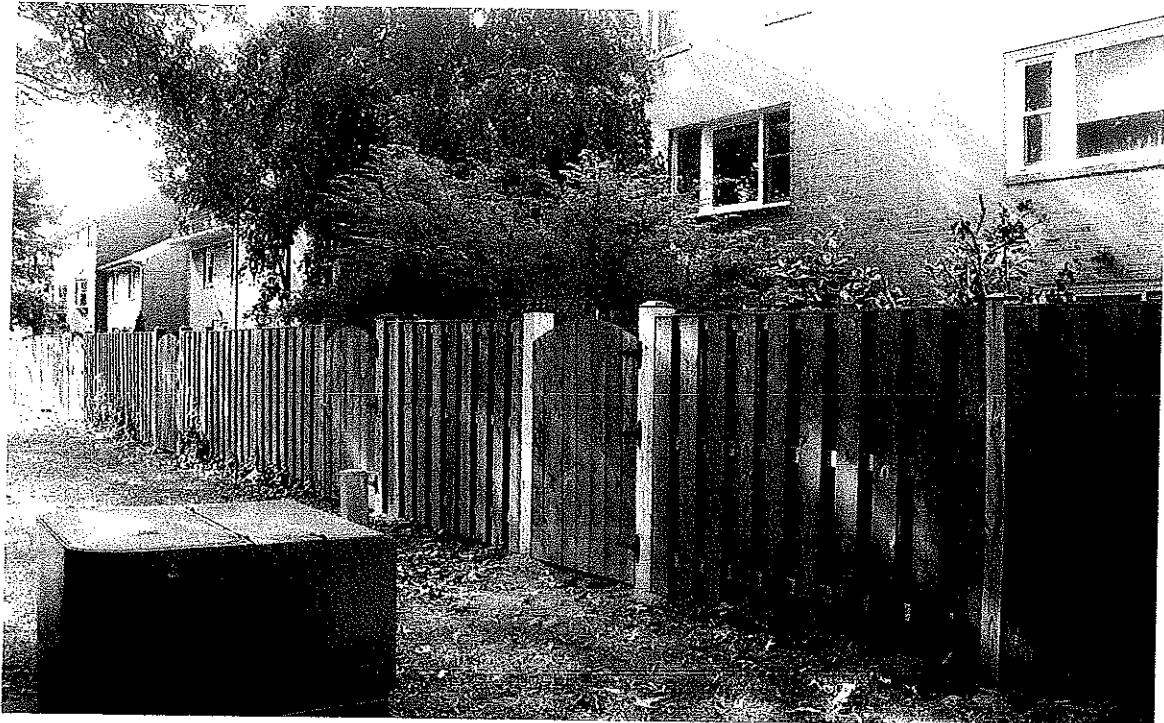
Replaced sidewalk sections.



The trash shelters are in good condition.



This storage shed is scheduled for replacement.



Gate post that have been replaced.



Another replaced gate post.



Signs of recent brick point-up.



Brick point-up on entrance stairs in progress.



Signs of ice melt damage on isolated entrance stairway.



This stairway appears to have had its concrete coating removed.



Concrete coating installed on this stairway.



Periodic tree trimming is needed to keep branches off of buildings.



These pine trees show signs of distress.



Another tree in need of trimming.



Association's common area picnic tables.