

# REPLACEMENT RESERVE REPORT FY 2011

## VILLAGE GREEN HOA



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VILLAGE GREEN HOA

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# REPLACEMENT RESERVE REPORT

## VILLAGE GREEN HOA

CHARLESTON, SOUTH CAROLINA



**Scope.** Village Green is a home owner association located in Charleston, South Carolina. Developed in 1992, the community consists of 648 single family homes. A swimming pool complex with recreational facilities located within the property is the responsibility of a separate association and therefore not included in this report. The survey examined the common elements of the property, including:

- Storm water system
- Entrance features
- Miscellaneous features

**Level of Service.** This study has been performed as a Level I, Full Service Reserve Study as defined under the National Reserve Study Standards that have been adopted by the Community Associations Institute. As such, a complete component inventory was established based on information regarding commonly-owned components provided by the community manager and upon quantities derived from field measurement and/or quantity takeoffs from to-scale engineering drawings. The condition of all commonly-owned components was ascertained from a site visit and the visual inspection of each component by the Analyst. The life expectancy and the value of the components are provided based in part on these observations. The fund status and funding plan have been derived from analysis of this data.

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**Purpose.** The purpose of this Replacement Reserve Study is to provide Village Green HOA (hereinafter called the Association) with an inventory of the common community facilities and infrastructure components that require periodic replacement. The Study includes a general view of the condition of these items and an effective financial plan to fund projected periodic replacements.

- **Inventory of Items Owned by the Association.** Section B Replacement Reserve Inventory lists the Projected Replacements of the commonly owned items that require periodic replacement using funding from Replacement Reserves. The Replacement Reserve Inventory also provides information about excluded items, which are items whose replacements are not scheduled for funding from Replacement Reserves.
- **Condition of Items Owned by the Association.** Section B Replacement Reserve Inventory includes our estimates of the normal economic life and the remaining economic life for the projected replacements. Section C Calendar of Projected Annual Replacements provides a year-by-year listing of the projected replacements. Section D Condition Assessment provides additional detail for items that are unique or deserving of attention because of their condition or the manner in which they have been treated in this Study.
- **Financial Plan.** The Association has a fiduciary responsibility to protect the appearance, value, and safety of the property and it is therefore essential the Association have a financial plan that provides funding for the projected replacements. In conformance with American Institute of Certified Public Accountant guidelines, Section A Replacement Reserve Analysis evaluates the current funding of Replacement Reserves as reported by the Association and recommends annual funding of Replacement Reserves by two generally accepted accounting methods; the Cash Flow Method and the Component Method. Section A Replacement Reserve Analysis includes graphic and tabular presentations of these methods and current Association funding. An Executive Summary of these calculations is provided on Page A1.

**Basis.** The data contained in this Replacement Reserve Study is based upon the following:

- The Request for Proposal submitted and executed by the Association.
- Our visual evaluation and measurements in September 2010. Miller - Dodson Associates has visually inspected the common elements of the property in order to ascertain the remaining useful life and the replacement costs of these components.

**Engineering Drawings.** No architectural drawings or engineering site plans were available for review in connection with this study. We recommend the Association assemble a library of site and building plans of the entire community. Reproducible drawings should be stored and kept in a secure fireproof location. The Association will find these drawings to be a valuable resource in planning and executing future projects.

**Current Funding.** This reserve study has been prepared for Fiscal Year 2011 covering the period from January 1, 2011 to December 31, 2011.. The Replacement Reserve Fund balance at the start of the 2011 fiscal year is projected by the Property Manager to be \$55,000.00. At present no regular contributions are being made to the Reserve Fund. Confirmation or audit of these figures is beyond the scope of the study. For the purposes of this study, it is assumed that future contributions will be deposited at the end of each month.

**Acknowledgement.** Miller - Dodson Associates would like to acknowledge the assistance and input of Chad Hammond who provided very helpful insight into the current operations at the property.

**Analyst's Credentials.** Mr. G.P. (Ted) Seeley earned a Bachelor of Science degree in Engineering from Princeton University. He has over forty years experience in the engineering and construction fields, and has been licensed as a Professional Engineer in several states. He has managed a variety of

construction projects and is currently a construction consultant for private buildings and reconstruction projects, and a Reserve Analyst for Miller - Dodson Associates, Inc.

Respectfully submitted,  
MILLER - DODSON ASSOCIATES, INC.

Ted Seeley  
Reserve Analyst

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## EXECUTIVE SUMMARY

The Village Green HOA Replacement Reserve Inventory identifies 6 Projected Replacements for funding from Replacement Reserves, with an estimated one-time replacement cost of \$1,901,900.

The Replacement Reserve Analysis calculates recommended funding of Replacement Reserves by the two generally accepted methods, the Cash Flow Method and the Component Method. The Analysis also evaluates current funding of Replacement Reserves, as reported by the Association. The calculations and evaluation are summarized below:

**\$92,377 CASH FLOW METHOD MINIMUM ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2011.**

\$11.88 Per unit (average), minimum monthly funding of Replacement Reserves

The Cash Flow Method (CFM) calculates Minimum Annual Funding of Replacement Reserves that will fund Projected Replacements identified in the Replacement Reserve Inventory from a common pool of Replacement Reserves and prevent Replacement Reserves from dropping below a Minimum Recommended Balance.

CFM - Minimum Annual Funding remains the same between peaks in cumulative expenditures called Peak Years.

The first Peak Year occurs in 2046 which is outside of the 30-year Study Period. The Cash Flow Method - Minimum Annual Funding of Replacement Reserves remains constant at \$92,377 throughout the entire 30-year Study Period.

**\$168,226 COMPONENT METHOD RECOMMENDED ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2011.**

\$21.63 Per unit (average), recommended monthly funding of Replacement Reserves

The Component Method is a time tested and very conservative funding model developed by HUD in the early 1980's.

The Component Method treats each projected replacement in the Replacement Reserve Inventory as a separate account. Deposits are made to each individual account, where funds are held for exclusive use by that item.

Based on this funding model, the Association has a Current Funding Objective of \$639,188.

The Association reports having \$55,000 on deposit, which is 8.6% funded.

**None CURRENT ANNUAL FUNDING OF REPLACEMENT RESERVES (as reported by the Association).**

\$0.00 Per unit (average), reported current monthly funding of Replacement Reserves

The evaluation of Current Funding, as reported by the Association, has calculated that if the Association continues to fund Replacement Reserves at the current level, there will NOT be adequate funds for Projected Replacements in 25 years of the 30-year Study Period, and a maximum shortfall of \$-2,328,150 occurs in 6114.

Pages A2 and A3 explain the Study Year, Study Period, Adjustments (interest & inflation), Beginning Balance, and Projected Replacements. Pages A4 to A9 explain in more detail the calculations associated with the Cash Flow Method, Component Method, and Current Funding.

## REPLACEMENT RESERVE STATUS AND FUNDING PLAN

The Association reports that they are not currently funding Replacement Reserves.

We recommend the Association adopt a Replacement Reserve Funding Plan based on the Cash Flow Method or the Component Method, to ensure that adequate funding is available throughout the 30-Year Study Period for the \$2,383,150 of Projected Replacements listed in the Village Green HOA Replacement Reserve Inventory.

The Funding Plan should be professionally evaluated every three to five years or after completion of each major replacement project. The Board of Directors has a fiduciary responsibility to review the Funding Plan annually and should consider annual increases in Replacement Reserve funding at least equal to the Consumer Price Index.

## REPLACEMENT RESERVE ANALYSIS - GENERAL INFORMATION

The Village Green HOA Replacement Reserve Analysis calculations of recommended funding of Replacement Reserves by the Cash Flow Method and the Component Method, and the evaluation of the Current Funding, are based upon the same General Information; including the Study Year, Study Period, Adjustments (for interest, inflation, and/or a constant increase in annual funding), Beginning Balance, and Projected Replacements:

### STUDY YEAR

The Association reports that their accounting year begins on January 1, and the Study Year, the first year evaluated by the Replacement Reserve Analysis, begins on January 1, 2011.

### STUDY PERIOD

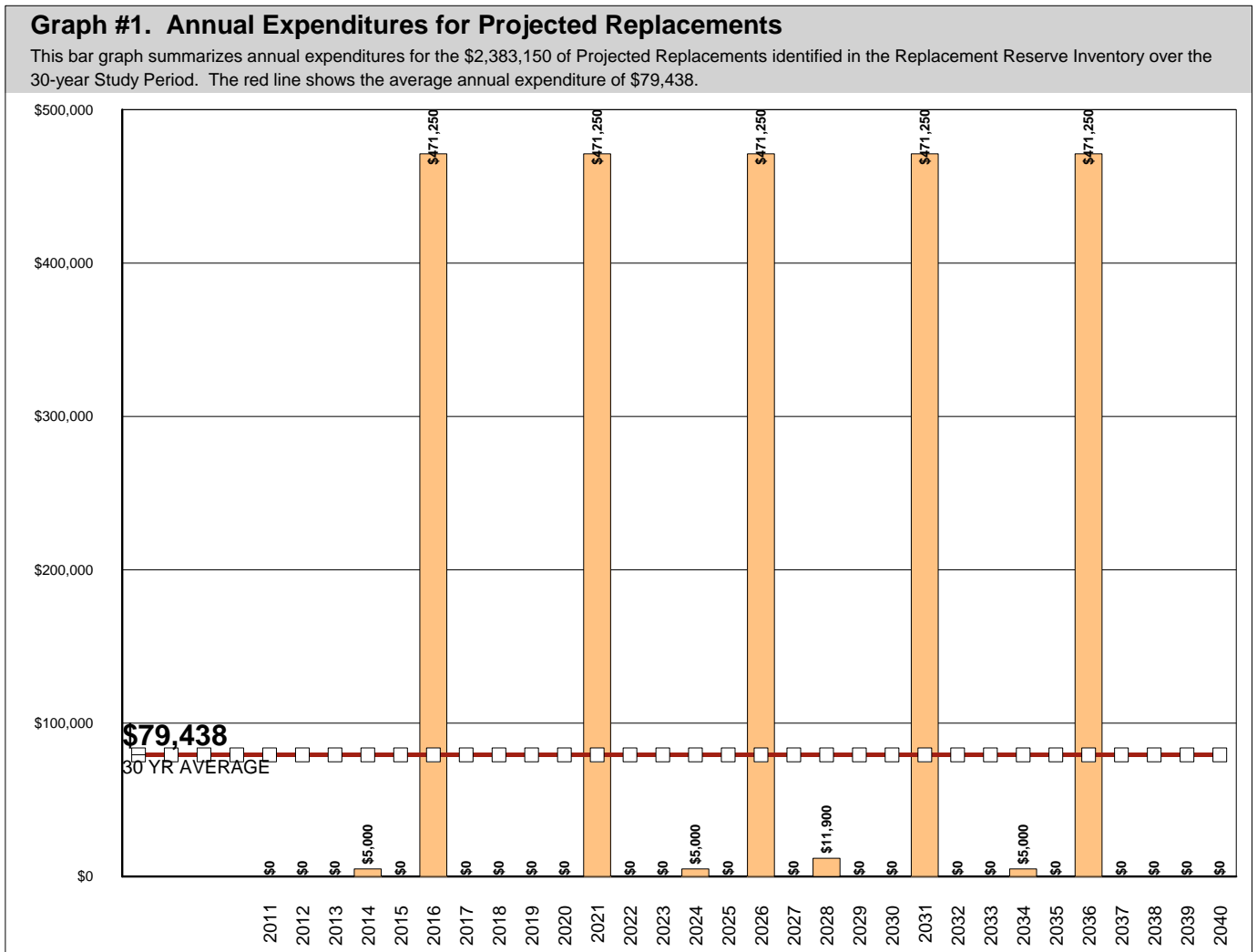
The Replacement Reserve Analysis evaluates the funding of Replacement Reserves over a 30-year Study Period that begins on January 1, 2011.

### ADJUSTMENTS

The calculations in this Replacement Reserve Analysis do not account for interest earned on Replacement Reserves, the effects of inflation on the costs of Projected Replacements, or a constant annual increase in Annual Funding of Replacement Reserves. If requested, we will provide a Replacement Reserve Analysis with adjustments for inflation, interest, and/or a constant annual increase in funding, using values provided by the Association.

### BEGINNING BALANCE

The Association reports Replacement Reserves on Deposit totaling \$55,000 at the start of the Study Year.



**PROJECTED REPLACEMENTS**

The Village Green HOA Replacement Reserve Inventory (Section B) identifies 6 Projected Replacements with a one-time Replacement Cost of \$1,901,900 and replacements totaling \$2,383,150 over the 30-year Study Period. Projected Replacements are the replacement of commonly-owned items that:

- require periodic replacement and
- whose replacement is to be funded from Replacement Reserves.

The Replacement Reserve Inventory also identifies 61 Excluded Items. Expenditures for the replacement of these items are NOT scheduled for funding from Replacement Reserves. The accuracy of the calculations made in the Replacement Reserve Analysis is dependent on expenditures NOT being made for Excluded Items. The rationale behind these exclusions is discussed in detail on Page B1.

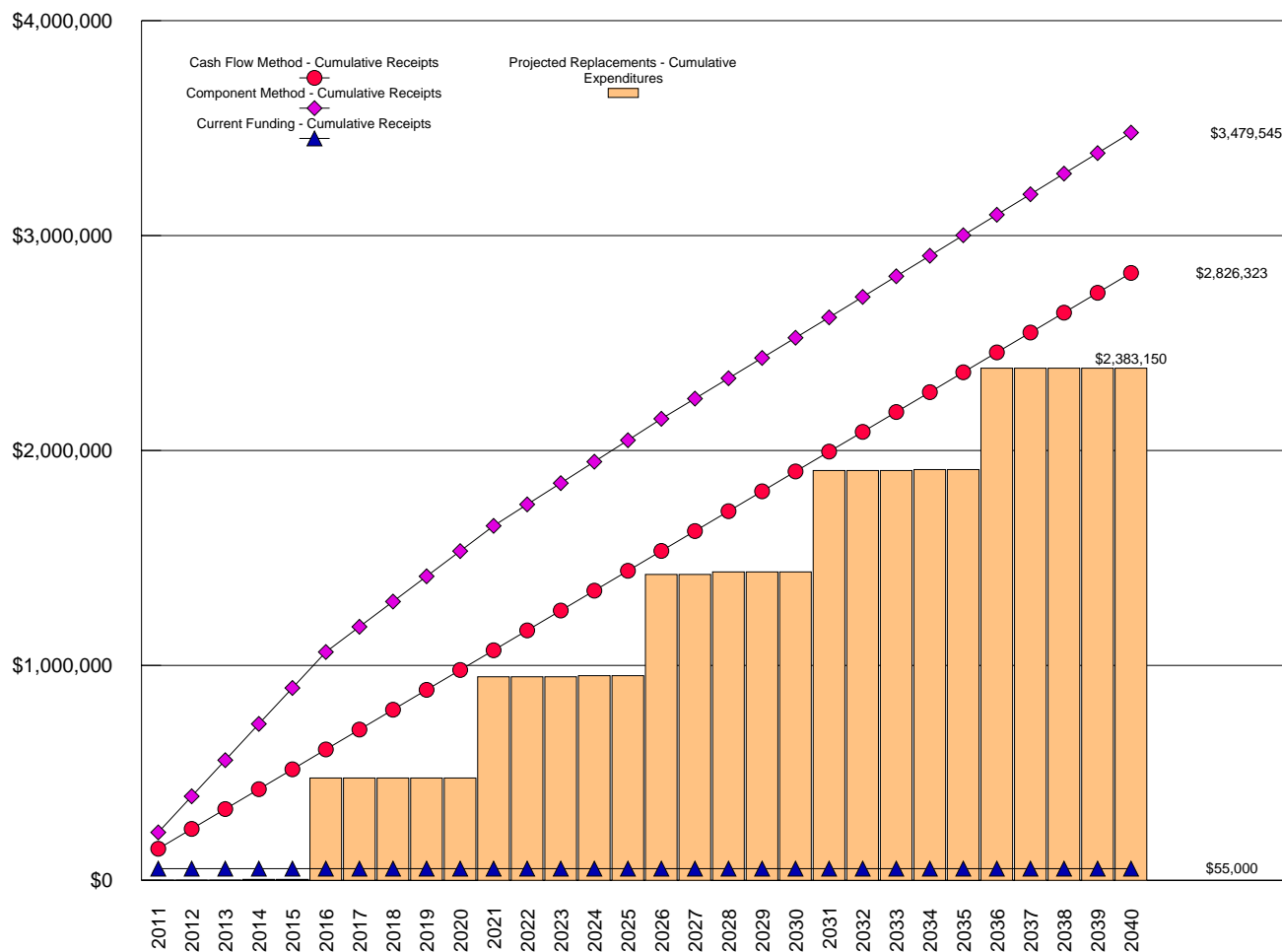
Expenditures from Replacements Reserves should be made only after consultation with an accounting professional.

The Section B - Replacement Reserve Inventory, contains Tables that list each Projected Replacement (and any Excluded Items) broken down into 8 major categories (Pages B3 to B10). Tables are also included that list each Projected Replacement by year for each of the 30 years of the Study Period beginning on Page C1.

The accuracy of this Replacement Reserve Analysis is dependent upon expenditures from Replacement Reserves being made only for the Projected Replacements specifically listed in the Replacement Reserve Inventory.

**Graph #2. Comparison of Cumulative Replacement Reserve Funding and Expenditures**

The line graph shows Replacement Reserves - Cumulative Receipts over the 30-year Study Period by the Cash Flow Method (red circles), Component Method (purple diamonds), and the Current Funding Plan as reported by the Association (blue triangles). The bar graph shows the Cumulative Expenditures necessary to fund the Project Replacements listed in the Replacement Reserve Inventory (Section B) and summarized in Graph #1.



### CASH FLOW METHOD

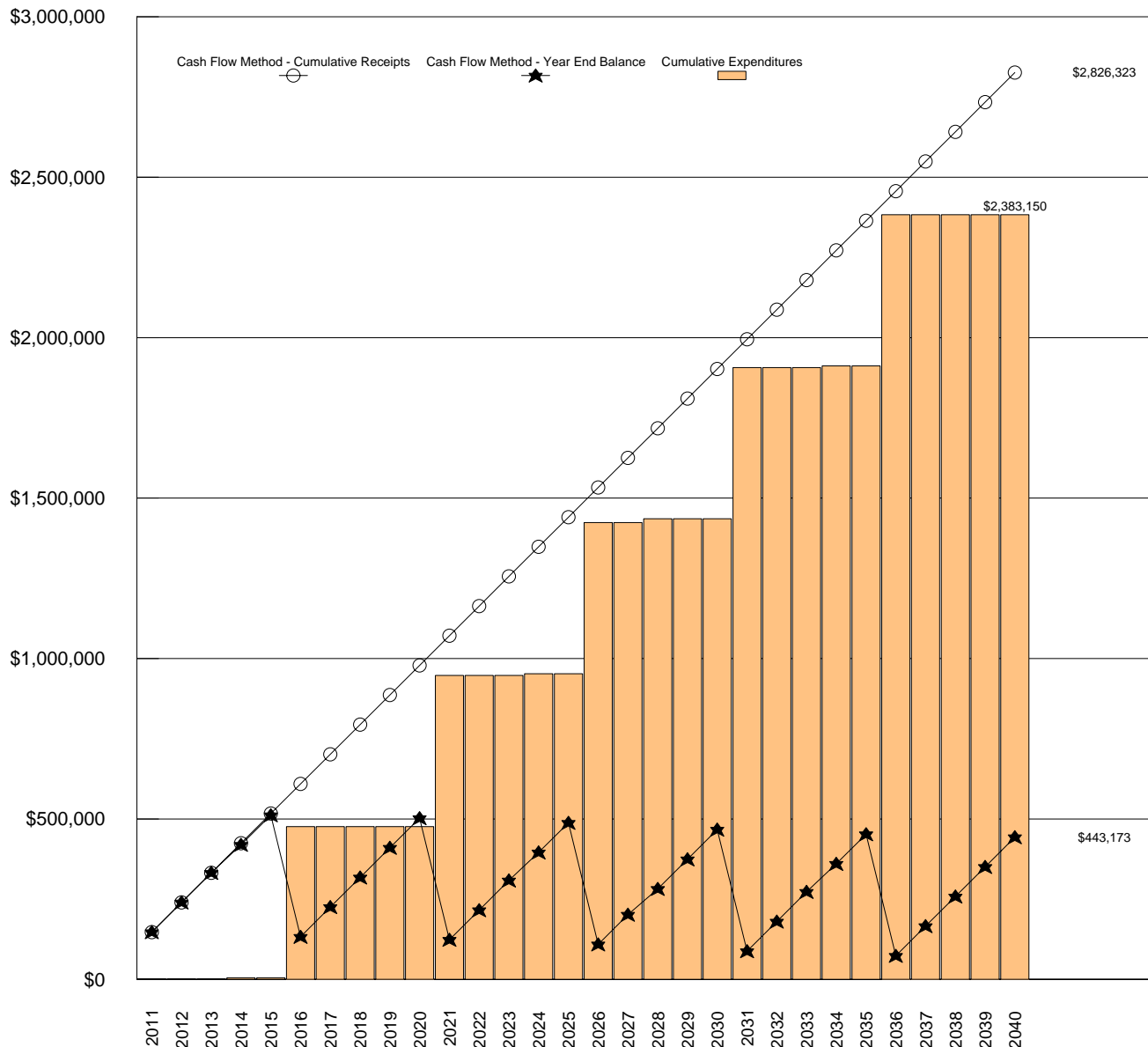
**\$92,377 CASH FLOW METHOD MINIMUM ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2011.**

\$11.88 Per unit (average), minimum monthly funding of Replacement Reserves

General. The Cash Flow Method is founded on the concept that the Replacement Reserve Account is solvent if cumulative receipts always exceed cumulative expenditures. The Cash Flow Method calculates a MINIMUM annual deposit to Replacement Reserves that will:

- Fund all Projected Replacements listed in the Replacement Reserve Inventory (see Section B)
- Prevent Replacement Reserves from dropping below the Minimum Recommended Balance (see Page A-5)
- Allow a constant annual funding level between peaks in cumulative expenditures

**Graph #3. Cash Flow Method - Cumulative Receipts and Expenditures Graph**



**CASH FLOW METHOD (cont'd)**

- Replacement Reserves - Minimum Recommended Balance. The Minimum Recommended Balance is \$38,038, which is 2.0 percent of the one-time replacement cost of the Projected Replacements listed in the Replacement Reserve Inventory. Unless otherwise noted in the Comments on Page A-9, the Minimum Recommended Balance has been established by the Analyst based upon an evaluation of the types of items included in the Replacement Reserve Inventory.
- Peak Years. The Cash Flow Method calculates a constant annual funding of Replacement Reserves between peaks in cumulative expenditures called Peak Years. In Peak Years, Replacement Reserves on Deposit decline to the Replacement Reserves - Minimum Recommended Balance discussed in the paragraph above.  
First Peak Year. The first Peak Year occurs in 2046, which is outside of the 30-year Study Period. The Cash Flow Method - Minimum Annual Funding of Replacement Reserves of \$92,377 remains the same throughout the entire 30-year Study Period.  
This funding level is adequate to fund the \$2,383,150 of Projected Expenditures listed in the Replacement Reserve Inventory.
- Study Period. The Cash Flow Method calculates the recommended contributions to Replacement Reserves over the 30-year Study Period. These calculations are based upon a 40-year projection of expenditures for Projected Replacements to avoid the Replacement Reserve balance dropping to the Minimum Recommended Balance in the final year of the Study Period.
- Failure to Fund. The Cash Flow Method calculates a MINIMUM annual funding of Replacement Reserves. Failure to fund Replacement Reserves at the minimum level calculated by the Cash Flow Method will result in Replacement Reserves not being available for the Projected Replacements listed in the Replacement Reserve Inventory and/or Replacement Reserves dropping below the Minimum Recommended Balance.
- Adjustment to the Cash Flow Method for interest and inflation. The calculations in this Replacement Reserve Analysis do not account for interest earned on Replacement Reserves, the effects of inflation of the cost of Projected Replacements, or a constant annual increase in Annual Funding of Replacement Reserves.
- Comparison of Cash Flow Funding and Average Annual Expenditure. The Average Annual Expenditure for Projected Replacements listed in the Reserve Inventory over the 30-year Study Period is \$79,438 (see Graph #1). The Cash Flow Method - Minimum Annual Funding of Replacement Reserves in the Study Year is \$92,377. This is 116.3 percent of the Average Annual Expenditure, indicating that the Association is building Replacement Reserves in advance of the first Peak Year in 2046.

**Table #1. Cash Flow Method Data - Years 1 through 30**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Beginning balance	\$55,000									
Minimum annual funding	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377
Expenditures				\$5,000		\$471,250				
Year end balance	\$147,377	\$239,755	\$332,132	\$419,510	\$511,887	\$133,015	\$225,392	\$317,770	\$410,147	\$502,524
Minimum recommended balance	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038
Cumulative expenditures				\$5,000	\$5,000	\$476,250	\$476,250	\$476,250	\$476,250	\$476,250
Cumulative receipts	\$147,377	\$239,755	\$332,132	\$424,510	\$516,887	\$609,265	\$701,642	\$794,020	\$886,397	\$978,774
Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Minimum annual funding	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377
Expenditures	\$471,250			\$5,000		\$471,250		\$11,900		
Year end balance	\$123,652	\$216,029	\$308,407	\$395,784	\$488,162	\$109,289	\$201,667	\$282,144	\$374,521	\$466,899
Minimum recommended balance	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038
Cumulative expenditures	\$947,500	\$947,500	\$947,500	\$952,500	\$952,500	\$1,423,750	\$1,423,750	\$1,435,650	\$1,435,650	\$1,435,650
Cumulative receipts	\$1,071,152	\$1,163,529	\$1,255,907	\$1,348,284	\$1,440,662	\$1,533,039	\$1,625,417	\$1,717,794	\$1,810,171	\$1,902,549
Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Minimum annual funding	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377	\$92,377
Expenditures	\$471,250			\$5,000		\$471,250				
Year end balance	\$88,026	\$180,404	\$272,781	\$360,159	\$452,536	\$73,664	\$166,041	\$258,418	\$350,796	\$443,173
Minimum recommended balance	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038	\$38,038
Cumulative expenditures	\$1,906,900	\$1,906,900	\$1,906,900	\$1,911,900	\$1,911,900	\$2,383,150	\$2,383,150	\$2,383,150	\$2,383,150	\$2,383,150
Cumulative receipts	\$1,994,926	\$2,087,304	\$2,179,681	\$2,272,059	\$2,364,436	\$2,456,814	\$2,549,191	\$2,641,568	\$2,733,946	\$2,826,323

### COMPONENT METHOD



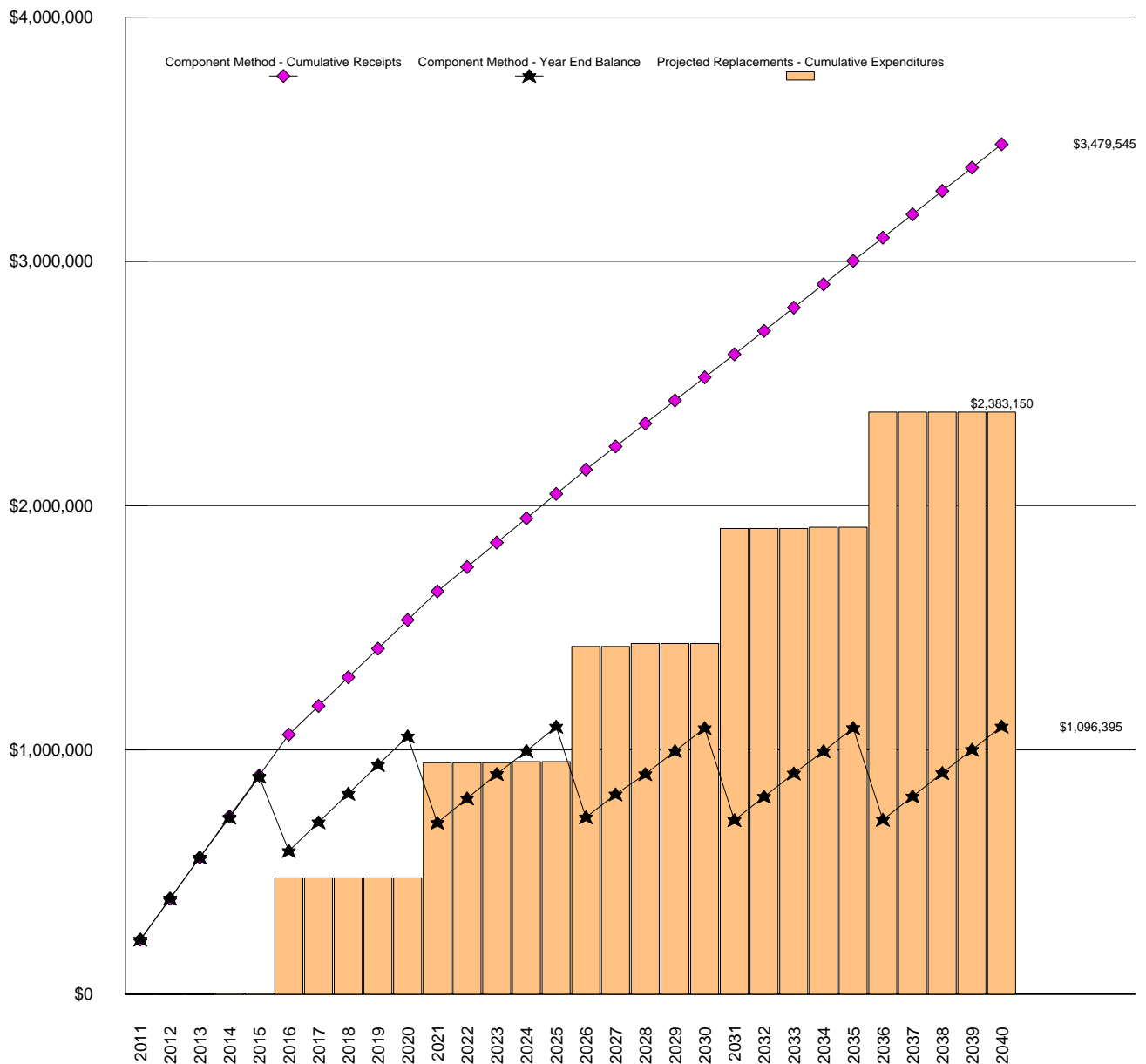
\$168,226

#### COMPONENT METHOD RECOMMENDED ANNUAL FUNDING OF REPLACEMENT RESERVES IN THE STUDY YEAR, 2011.

\$21.63 Per unit (average), recommended monthly funding of Replacement Reserves

General. The Component Method is a time tested and very conservative mathematical model developed by HUD in the early 1980s. Each of the 6 Projected Replacements listed in the Replacement Reserve Inventory is treated as a separate account. The Beginning Balance is allocated to each of these individual accounts, as is all subsequent funding of Replacement Reserves. These funds are "locked" in these individual accounts and are not available to fund other Projected Replacements. The calculation of the Recommended Annual Funding of Replacement Reserves is a multi-step process outlined in more detail on Page A7.

**Graph #4. Component Method - Cumulative Receipts and Expenditures Graph**



**COMPONENT METHOD (cont'd)**

- **Current Funding Objective.** A Current Funding Objective is calculated for each of the Projected Replacements listed in the Replacement Reserve Inventory. Replacement Cost is divided by the Normal Economic Life to determine the nominal annual contribution. The Remaining Economic Life is then subtracted from the Normal Economic Life to calculate the number of years that the nominal annual contribution should have been made. The two values are then multiplied to determine the Current Funding Objective. This is repeated for each of the 6 Projected Replacements. The total, \$639,188, is the Current Funding Objective.

For an example, consider a very simple Replacement Reserve Inventory with one Projected Replacement, a fence with a \$1,000 Replacement Cost, a Normal Economic Life of 10 years, and a Remaining Economic Life of 2 years. A contribution to Replacement Reserves of \$100 (\$1,000 + 10 years) should have been made in each of the previous 8 years (10 years - 2 years). The result is a Current Funding Objective of \$800 (8 years x \$100 per year).

- **Funding Percentage.** The Funding Percentage is calculated by dividing the Beginning Balance (\$55,000) by the Current Funding Objective (\$639,188). At Village Green HOA the Funding Percentage is 8.6%
- **Allocation of the Beginning Balance.** The Beginning Balance is divided among the 6 Projected Replacements in the Replacement Reserve Inventory. The Current Funding Objective for each Projected Replacement is multiplied by the Funding Percentage and these funds are then "locked" into the account of each item.

If we relate this calculation back to our fence example, it means that the Association has not accumulated \$800 in Reserves (the Funding Objective), but rather at 8.6 percent funded, there is \$69 in the account for the fence.

- **Annual Funding.** The Recommended Annual Funding of Replacement Reserves is then calculated for each Projected Replacement. The funds allocated to the account of the Projected Replacement are subtracted from the Replacement Cost. The result is then divided by the number of years until replacement, and the result is the annual funding for each of the Projected Replacements. The sum of these is \$168,226, the Component Method Recommended Annual Funding of Replacement Reserves in the Study Year (2011).

In our fence example, the \$69 in the account is subtracted from the \$1,000 Total Replacement Cost and divided by the 2 years that remain before replacement, resulting in an annual deposit of \$466. Next year, the deposit remains \$466, but in the third year, the fence is replaced and the annual funding adjusts to \$100.

- **Adjustment to the Component Method for interest and inflation.** The calculations in the Replacement Reserve Analysis do not account for interest earned on Replacement Reserves, the effects of inflation of the cost of Projected Replacements, or a constant annual increase in Annual Funding of Replacement Reserves.

**Table #2. Component Method Data - Years 1 through 30**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Beginning balance	\$55,000									
Recommended annual funding	\$168,226	\$168,226	\$168,226	\$168,226	\$167,541	\$167,541	\$117,292	\$117,292	\$117,292	\$117,292
Expenditures				\$5,000		\$471,250				
Year end balance	\$223,226	\$391,453	\$559,679	\$722,905	\$890,446	\$586,737	\$704,029	\$821,321	\$938,614	\$1,055,906
Cumulative Expenditures				\$5,000	\$5,000	\$476,250	\$476,250	\$476,250	\$476,250	\$476,250
Cumulative Receipts	\$223,226	\$391,453	\$559,679	\$727,905	\$895,446	\$1,062,987	\$1,180,279	\$1,297,571	\$1,414,864	\$1,532,156
Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Recommended annual funding	\$117,292	\$99,673	\$99,673	\$99,673	\$99,673	\$99,673	\$94,289	\$94,289	\$94,421	\$94,421
Expenditures	\$471,250			\$5,000		\$471,250		\$11,900		
Year end balance	\$701,949	\$801,622	\$901,294	\$995,967	\$1,095,640	\$724,063	\$818,352	\$900,741	\$995,162	\$1,089,584
Cumulative Expenditures	\$947,500	\$947,500	\$947,500	\$952,500	\$952,500	\$1,423,750	\$1,423,750	\$1,435,650	\$1,435,650	\$1,435,650
Cumulative Receipts	\$1,649,449	\$1,749,122	\$1,848,794	\$1,948,467	\$2,048,140	\$2,147,813	\$2,242,102	\$2,336,391	\$2,430,812	\$2,525,234
Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Recommended annual funding	\$94,421	\$95,543	\$95,543	\$95,543	\$95,543	\$95,543	\$95,543	\$95,543	\$95,543	\$95,543
Expenditures	\$471,250			\$5,000		\$471,250				
Year end balance	\$712,755	\$808,298	\$903,842	\$994,385	\$1,089,928	\$714,222	\$809,765	\$905,308	\$1,000,852	\$1,096,395
Cumulative Expenditures	\$1,906,900	\$1,906,900	\$1,906,900	\$1,911,900	\$1,911,900	\$2,383,150	\$2,383,150	\$2,383,150	\$2,383,150	\$2,383,150
Cumulative Receipts	\$2,619,655	\$2,715,198	\$2,810,742	\$2,906,285	\$3,001,828	\$3,097,372	\$3,192,915	\$3,288,458	\$3,384,002	\$3,479,545

### CURRENT FUNDING



None

#### CURRENT ANNUAL FUNDING OF REPLACEMENT RESERVES (as reported by the Association).

\$0.00 Per unit (average), reported current monthly funding of Replacement Reserves

General. Our evaluation of the Current Association Funding assumes that the Association will continue to fund Replacement Reserves at the current level of \$0 per year in each of the 30 years of the Study Period.

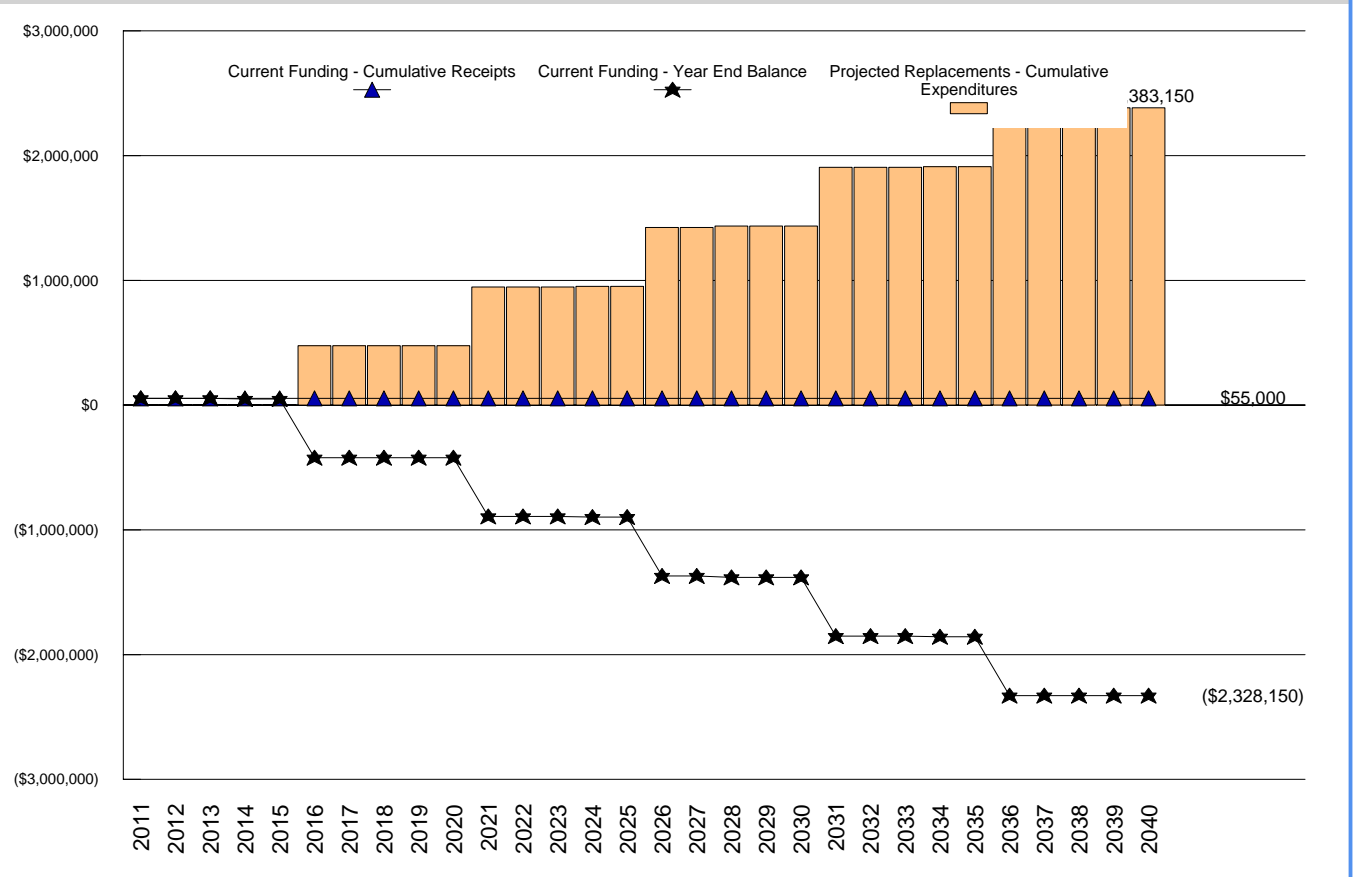
Our evaluation is based upon this Replacement Reserve Funding Level, a \$55,000 Beginning Balance, the Projected Annual Replacement Expenditures shown in Graph #1 and listed in the Replacement Reserve Inventory, and any interest, inflation rate, or constant annual increase in annual contribution adjustments discussed below.

- Evaluation. Our calculations have determined that Current Annual Funding of Replacement Reserves, as reported by the Association, is inadequate to fund Projected Replacement beginning in 2016.

The Current Annual Funding of Replacement Reserves results in insufficient funds to make Projected Replacements in 25 years of the 30-year Study Period, and a maximum shortfall of \$-2,328,150 occurs in 6114.

- Adjustment to the Current Association Funding for interest and inflation. The Calculations in the Replacement Reserve Analysis do not account for interest earned on Replacement Reserves, the effects of inflation of the cost of Projected Replacements, or a constant annual increase in Annual Funding of Replacement Reserves.
- Comparison of Current Association Funding and Average Annual Expenditure. The average annual expenditure for Projected Replacements listed in the Reserve Inventory over the 30-year Study Period is \$79,438 (see Graph #1). Current Association annual funding of Replacement Reserves is \$0, or approximately 0 percent of the Average Annual Expenditure.

**Graph #5. Current Association Funding - Cumulative Receipts and Expenditures Graph**



CURRENT FUNDING (cont'd)

**Table #3. Current Funding Data - Years 1 through 30**

Year	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Beginning balance	\$55,000									
Annual deposit										
Expenditures				\$5,000		\$471,250				
Year end balance	\$55,000	\$55,000	\$55,000	\$50,000	\$50,000	(\$421,250)	(\$421,250)	(\$421,250)	(\$421,250)	(\$421,250)
Cumulative Expenditures				\$5,000	\$5,000	\$476,250	\$476,250	\$476,250	\$476,250	\$476,250
Cumulative Receipts	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000
Year	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Annual deposit										
Expenditures	\$471,250			\$5,000		\$471,250		\$11,900		
Year end balance	(\$892,500)	(\$892,500)	(\$892,500)	(\$897,500)	(\$897,500)	(\$1,368,750)	(\$1,368,750)	(\$1,380,650)	(\$1,380,650)	(\$1,380,650)
Cumulative expenditures	\$947,500	\$947,500	\$947,500	\$952,500	\$952,500	\$1,423,750	\$1,423,750	\$1,435,650	\$1,435,650	\$1,435,650
Cumulative receipts	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000
Year	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040
Annual deposit										
Expenditures	\$471,250			\$5,000		\$471,250				
Year end balance	(\$1,851,900)	(\$1,851,900)	(\$1,851,900)	(\$1,856,900)	(\$1,856,900)	(\$2,328,150)	(\$2,328,150)	(\$2,328,150)	(\$2,328,150)	(\$2,328,150)
Cumulative Expenditures	\$1,906,900	\$1,906,900	\$1,906,900	\$1,911,900	\$1,911,900	\$2,383,150	\$2,383,150	\$2,383,150	\$2,383,150	\$2,383,150
Cumulative Receipts	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000	\$55,000

**COMMENTS ON THE REPLACEMENT RESERVE ANALYSIS**

- This Replacement Reserve Study has been developed in compliance with the Community Associations Institute, National Reserve Study Standards, for a Level One Study - Full Service.
- Village Green HOA has 648 units. The type of property is a home owner association.
- Our calculations assume that Replacement Reserves are not subject to tax.

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## REPLACEMENT RESERVE INVENTORY GENERAL INFORMATION

Village Green HOA - Replacement Reserve Inventory identifies 67 items. Two types of items are identified, Projected Replacements and Excluded Items:

- **PROJECTED REPLACEMENTS.** 6 of the items are Projected Replacements and the periodic replacements of these items are scheduled for funding from Replacement Reserves. The Projected Replacements have an estimated one-time replacement cost of \$1,901,900. Replacements totaling \$2,383,150 are scheduled in the Replacement Reserve Inventory over the 30-year Study Period.

Projected Replacements are the replacement of commonly owned physical assets that require periodic replacement and whose replacement is to be funded from Replacement Reserves.

- **EXCLUDED ITEMS.** 61 of the items are Excluded Items, and expenditures for these items are NOT scheduled for funding from Replacement Reserves. The accuracy of the calculations made in the Replacement Reserve Analysis is dependent on expenditures NOT being made for Excluded Items. The Excluded Items are listed in the Replacement Reserve Inventory to identify specific items and categories of items that are not to be funded from Replacement Reserves. There are multiple categories of items that are typically excluded from funding by Replacement Reserves, including but not limited to:

**Tax Code.** The United States Tax Code grants very favorable tax status to Replacement Reserves, conditioned on expenditures being made within certain guidelines. These guidelines typically exclude maintenance activities, partial replacements, repairs, capital improvements, and one-time only replacements.

**Value.** Items with a replacement cost of less than \$1,000 are typically excluded from funding from Replacement Reserves. This exclusion is made to accurately reflect how Replacement Reserves are administered. If the Association has selected an alternative level, it will be noted in the Replacement Reserve Inventory - General Comments on Page B2.

**Long-lived Items.** Items that when properly maintained, can be assumed to have a life equal to the property as a whole, are typically excluded from the Replacement Reserve Inventory.

**Unit improvements.** Items located on property owned by a single unit and where the items serve a single unit are generally assumed to be the responsibility of that unit, not the Association.

**Other non-common improvements.** Items owned by the local government, public and private utility companies, the United States Postal Service, Master Associations, state and local highway authorities, etc., may be installed on property that is owned by the Association. These types of items are generally not the responsibility of the Association and are excluded from the Replacement Reserve Inventory.

The rationale for the exclusion of an item from funding by Replacement Reserves is discussed in more detail in the 'Comments' section of its page of the Replacement Reserve Inventory.

- **CATEGORIES.** The 67 items included in the Village Green HOA Replacement Reserve Inventory are divided into 8 major categories. Each category is printed on a separate page, Pages B3 to B10.
- **LEVEL OF SERVICE.** This Replacement Reserve Inventory has been developed in compliance with the standards established for a Level One Study - Full Service, as defined by the National Reserve Study Standards, established in 1998 by Community Associations Institute, which states:

*A Level I - Full Service Reserve Study includes the computation of complete component inventory information regarding commonly owned components provided by the property manager, quantities derived from field measurements and/or quantity takeoffs from to-scale engineering drawings that may be made available. The condition of all components is ascertained from a visual inspection of each component by the analyst. The life expectancy and the value of the components are provided based on these observations and the funding status and funding plan are then derived from analysis of this data.*

## REPLACEMENT RESERVE INVENTORY - GENERAL INFORMATION (cont'd)

- **INVENTORY DATA.** Each of the 6 Projected Replacements listed in the Replacement Reserve Inventory includes the following data:

Item Number. The Item Number is assigned sequentially and is intended for identification purposes only.

Item Description. We have named each item included in the Inventory. Where the name of the item and the category are not sufficient to specifically identify the item, we have included additional information in the Comments section at the bottom of the page.

Units. We have used standard abbreviations to identify the number of units including SF-square feet, FT-foot, SY-square yard, LS-lump sum, EA-each, and PR-pair. Nonstandard abbreviations are noted in the Comments section on the page on which the abbreviation is used.

Number of Units. The methods used to develop the quantities are discussed in "Level of Service" above.

Unit Replacement Cost. We use three sources to develop the unit cost data shown in the Inventory; actual replacement cost data provided by the client, industry standard estimating manuals, and a cost database that we have developed based upon our detailed interviews with contractors and service providers who are specialists in their respective lines of work. In addition, trends in the Producers Price Index (PPI), labor rates, and transportation costs are monitored and considered. This cost database is reviewed and updated regularly by Miller Dodson and biannually by an independent professional cost estimating firm.

Normal Economic Life (Yrs). The number of years that a new and properly installed item should be expected to remain in service.

Economic Life Remaining (Yrs). The estimated number of years before an item will need to be replaced. In "normal" conditions, this could be calculated by subtracting the age of the item from the Normal Economic Life of the item, but only rarely do physical assets age "normally". Some items may have longer or shorter lives depending on many factors such as environment, initial quality of the item, maintenance, etc.

Total Replacement Cost. This is calculated by multiplying the Unit Replacement Cost by the Number of Units.

Each of the 61 Excluded Items includes the Item Description, Units, and Number of Units. Many of the Excluded Items are listed as a 'Lump Sum' with a quantity of 1. For the Excluded Items, this indicates that all of the items identified by the 'Item Description' are excluded from funding by Replacement Reserves.

- **REVIEW OF EXPENDITURES.** All expenditures from Replacement Reserves should be made only after consultation with an accounting professional.
- **PARTIAL FUNDING.** Items may have been included in the Replacement Reserve Inventory at less than 100 percent of their full quantity and/or replacement cost. This is done on items that will never be replaced in their entirety, but which may require periodic replacements over an extended period of time. The assumptions that provide the basis for any partial funding are noted on in the Comments section.

## REPLACEMENT RESERVE INVENTORY - GENERAL COMMENTS

- **PLEASE NOTE:** For inventory items with a Remaining Economic Life greater than 40 years, the replacement projections fall outside this study's limits and are not included in the annual calculations. However, tracking these items over time will bring them within the 40 year window and they will be included in the future.

**SITE  
 PROJECTED REPLACEMENTS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
1	Dredge Storm Water Ponds, 25%	cy	7,250	\$65.00	20	5	\$471,250
2	Dredge Storm Water Ponds, 25%	cy	7,250	\$65.00	20	10	\$471,250
3	Dredge Storm Water ponds, 25%	cy	7,250	\$65.00	20	15	\$471,250
4	Dredge Storm Water Ponds, 25%	cy	7,250	\$65.00	20	20	\$471,250
5	Repoint Brick Entrance Monuments	sf	1,400	\$8.50	15	17	\$11,900
6	Replace tree, allowance	ls	1	\$5,000.00	10	3	\$5,000

SITE - Replacement Costs - Subtotal \$1,901,900

**SITE  
 COMMENTS**

- Storm Water Pond dredging includes incidental repairs to piping and inlets. For discussion of Storm Water Ponds see page D-1, Condition Assessment, of this Report.
- Tree replacement allowance provides for replacement of large commonly-owned trees and shrubs that add significant value to the property.

**VALUATION EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Site lighting fixtures	ls	1				EXCLUDED
	Property identification signage	ls	1				EXCLUDED
	Miscellaneous signage	ls	1				EXCLUDED
	Mailboxes	ls	1				EXCLUDED

**VALUATION EXCLUSIONS**

**COMMENTS**

- Valuation Exclusions. For ease of administration of the Replacement Reserves and to reflect accurately how Replacement Reserves are administered, items with a dollar value less than \$2,500.00 have not been scheduled for funding from Replacement Reserves. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
  
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

**LONG-LIFE EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Masonry features	ls	1				EXCLUDED
	Miscellaneous culverts	ls	1				EXCLUDED
	Bridge structure and foundations	ls	1				EXCLUDED
	Concrete retaining walls	ls	1				EXCLUDED
	Segmental retaining walls	ls	1				EXCLUDED

**LONG-LIFE EXCLUSIONS**

**COMMENTS**

- Long Life Exclusions. Components that when properly maintained, can be assumed to have a life equal to the property as a whole, are normally excluded from the Replacement Reserve Inventory. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- Exterior masonry is generally assumed to have an unlimited economic life but periodic repointing is required and we have included this for funding in the Replacement Reserve Inventory.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

**UNIT IMPROVEMENTS EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Domestic water pipes serving one unit	ls	1				EXCLUDED
	Sanitary sewers serving one unit	ls	1				EXCLUDED
	Electrical wiring serving one unit	ls	1				EXCLUDED
	Cable TV service serving one unit	ls	1				EXCLUDED
	Telephone service serving one unit	ls	1				EXCLUDED
	Gas service serving one unit	ls	1				EXCLUDED
	Driveway on an individual lot	ls	1				EXCLUDED
	Apron on an individual lot	ls	1				EXCLUDED
	Sidewalk on an individual lot	ls	1				EXCLUDED
	Stairs on an individual lot	ls	1				EXCLUDED
	Curb & gutter on an individual lot	ls	1				EXCLUDED
	Retaining wall on an individual lot	ls	1				EXCLUDED
	Fence on an individual lot	ls	1				EXCLUDED
	Unit exterior	ls	1				EXCLUDED
	Unit windows	ls	1				EXCLUDED
	Unit doors	ls	1				EXCLUDED
	Unit skylights	ls	1				EXCLUDED
	Unit deck, patio, and/or balcony	ls	1				EXCLUDED
	Unit mailbox	ls	1				EXCLUDED
	Unit interior	ls	1				EXCLUDED
	Unit HVAC system	ls	1				EXCLUDED

**UNIT IMPROVEMENTS EXCLUSIONS**

**COMMENTS**

- Unit improvement Exclusions. We understand that the elements of the project that relate to a single unit are the responsibility of that unit owner. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
  
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

**UTILITY EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Primary electric feeds	ls	1				EXCLUDED
	Electric transformers	ls	1				EXCLUDED
	Cable TV systems and structures	ls	1				EXCLUDED
	Telephone cables and structures	ls	1				EXCLUDED
	Site lighting	ls	1				EXCLUDED
	Gas mains and meters	ls	1				EXCLUDED
	Water mains and meters	ls	1				EXCLUDED
	Sanitary sewers	ls	1				EXCLUDED

**UTILITY EXCLUSIONS**

**COMMENTS**

- Utility Exclusions. Many improvements owned by utility companies are on property owned by the Association. We have assumed that repair, maintenance, and replacements of these components will be done at the expense of the appropriate utility company. Examples of items excluded from funding Replacement Reserves by this standard are listed above.
  
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

**MAINTENANCE AND REPAIR EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Cleaning of asphalt pavement	ls	1				EXCLUDED
	Crack sealing of asphalt pavement	ls	1				EXCLUDED
	Painting of curbs	ls	1				EXCLUDED
	Striping of parking spaces	ls	1				EXCLUDED
	Numbering of parking spaces	ls	1				EXCLUDED
	Landscaping and site grading	ls	1				EXCLUDED
	Exterior painting	ls	1				EXCLUDED
	Interior painting	ls	1				EXCLUDED
	Janitorial service	ls	1				EXCLUDED
	Repair services	ls	1				EXCLUDED
	Partial replacements	ls	1				EXCLUDED
	Capital improvements	ls	1				EXCLUDED

**MAINTENANCE AND REPAIR EXCLUSIONS**

**COMMENTS**

- Maintenance activities, one-time-only repairs, and capital improvements. These activities are NOT appropriately funded from Replacement Reserves. The inclusion of such component in the Replacement Reserve Inventory could jeopardize the special tax status of ALL Replacement Reserves, exposing the Association to significant tax liabilities. We recommend that the Board of Directors discuss these exclusions and Revenue Ruling 75-370 with a Certified Public Accountant.
- Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

**GOVERNMENT EXCLUSIONS**  
 EXCLUDED ITEMS

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Government, roadways & parking	ls	1				EXCLUDED
	Government, sidewalks & curbs	ls	1				EXCLUDED
	Government, lighting	ls	1				EXCLUDED
	Government, stormwater mgmt.	ls	1				EXCLUDED
	Government, mailboxes	ls	1				EXCLUDED

**GOVERNMENT EXCLUSIONS**  
 COMMENTS

- Government Exclusions. We have assumed that some of the improvements installed on property owned by the Association will be maintained by the state, county, or local government, or other association or other responsible entity. Examples of items excluded from funding by Replacement Reserves by this standard are listed above.
- All roads are owned by the Government. We assume tha this includes catch basins and inlets within the road rights-of-way.
- The list above exemplifies exclusions by the cited standard(s) and is not intended to be comprehensive.

**IRRIGATION SYSTEM EXCLUSIONS**

**EXCLUDED ITEMS**

ITEM #	ITEM DESCRIPTION	UNIT	NUMBER OF UNITS	UNIT REPLACEMENT COST (\$)	NORMAL ECONOMIC LIFE (YRS)	REMAINING ECONOMIC LIFE (YRS)	REPLACEMENT COST (\$)
	Subsurface irrigation pipe	ls	1				EXCLUDED
	Subsurface irrigation valve	ls	1				EXCLUDED
	Subsurface irrigation control wiring	ls	1				EXCLUDED
	Irrigation control system	ls	1				EXCLUDED
	Irrigation system electrical service	ls	1				EXCLUDED
	Irrigation system enclosures	ls	1				EXCLUDED

**IRRIGATION SYSTEM EXCLUSIONS**

**COMMENTS**

- Irrigation System Exclusions. We have assumed that the maintenance, repair, and periodic replacement of the components of the extensive irrigation systems at the property will not be funded from Replacement Reserves. These systems should be inspected each spring when the systems are brought on line and each fall when they are winterized. Repairs/replacements should be made in conjunction with these inspections.

## PROJECTED ANNUAL REPLACEMENTS GENERAL INFORMATION

CALENDAR OF ANNUAL REPLACEMENTS. The 6 Projected Replacements in the Village Green HOA Replacement Reserve Inventory whose replacement is scheduled to be funded from Replacement Reserves are broken down on a year-by-year basis, beginning on Page C2.

## REPLACEMENT RESERVE ANALYSIS AND INVENTORY POLICIES, PROCEDURES, AND ADMINISTRATION

- **REVISIONS.** Revisions will be made to the Replacement Reserve Analysis and Replacement Reserve Inventory in accordance with the written instructions of the Board of Directors. No additional charge is incurred for the first revision, if requested in writing within three months of the date of the Replacement Reserve Study. It is our policy to provide revisions in electronic (Adobe PDF) format only.
- **TAX CODE.** The United States Tax Code grants favorable tax status to a common interest development (CID) meeting certain guidelines for their Replacement Reserve. If a CID files their taxes as a 'Corporation' on Form 1020 (IRC Section 277), these guidelines typically require maintenance activities, partial replacements, minor replacements, capital improvements, and one-time only replacements to be excluded from Reserves. A CID cannot commingle planning for maintenance activities with capital replacement activities in the Reserves (Revenue Ruling 75-370). Funds for maintenance activities and capital replacements activities must be held in separate accounts. If a CID files taxes as an "Exempt Homeowners Association" using Form 1020H (IRC Section 528), the CID does not have to segregate these activities. However, because the CID may elect to change their method of filing from year to year within the Study Period, we advise using the more restrictive approach. We further recommend that the CID consult with their Accountant and consider creating separate and independent accounts and reserves for large maintenance items, such as painting.
- **CONFLICT OF INTEREST.** Neither Miller - Dodson Associates nor the Reserve Analyst has any prior or existing relationship with this Association which would represent a real or perceived conflict of interest.
- **RELIANCE ON DATA PROVIDED BY THE CLIENT.** Information provided by an official representative of the Association regarding financial, physical conditions, quality, or historical issues is deemed reliable.
- **INTENT.** This Replacement Reserve Study is a reflection of the information provided by the Association and the visual evaluations of the Analyst. It has been prepared for the sole use of the Association and is not for the purpose of performing an audit, quality/forensic analyses, or background checks of historical records.
- **PREVIOUS REPLACEMENTS.** Information provided to Miller - Dodson Associates regarding prior replacements is considered to be accurate and reliable. Our visual evaluation is not a project audit or quality inspection.
- **UPDATING.** In the first two or possibly three years after the completion of a Level One Replacement Reserve Study, we recommend the Association review and revise the Replacement Reserve Analysis and Inventory annually to take into account replacements which have occurred and known changes in replacement costs. This can frequently be handled as a Level Two or Level Three Study (as defined by the Community Associations Institute), unless the Association has completed major replacement projects. A full analysis (Level One) based on a comprehensive visual evaluation of the site should be accomplished every three to five years or after each major replacement project.
- **EXPERIENCE WITH FUTURE REPLACEMENTS.** The Calendar of Annual Projected Replacements, lists replacements we have projected to occur over the next thirty years, begins on Page C2. Actual experience in replacing the items may differ significantly from the cost estimates and time frames shown because of conditions beyond our control. These differences may be caused by maintenance practices, inflation, variations in pricing and market conditions, future technological developments, regulatory actions, acts of God, and luck. Some items may function normally during our visual evaluation and then fail without notice.
- **REVIEW OF THE REPLACEMENT RESERVE STUDY.** For this study to be effective, it should be reviewed by the Village Green HOA Board of Directors, those responsible for the management of the items included in the Replacement Reserve Inventory, and the accounting professionals employed by the Association.

**PROJECTED REPLACEMENTS - YEARS ONE TO FIFTEEN**

Item	2011	\$
No Scheduled Replacements		

Item	2012	\$
No Scheduled Replacements		

Item	2013	\$
No Scheduled Replacements		

Item	2014	\$
6	Replace tree, allowance	\$5,000
Total Scheduled Replacements		\$5,000

Item	2015	\$
No Scheduled Replacements		

Item	2016	\$
1	Dredge Storm Water Ponds,	\$471,250
Total Scheduled Replacements		\$471,250

Item	2017	\$
No Scheduled Replacements		

Item	2018	\$
No Scheduled Replacements		

Item	2019	\$
No Scheduled Replacements		

Item	2020	\$
No Scheduled Replacements		

Item	2021	\$
2	Dredge Storm Water Ponds,	\$471,250
Total Scheduled Replacements		\$471,250

Item	2022	\$
No Scheduled Replacements		

Item	2023	\$
No Scheduled Replacements		

Item	2024	\$
6	Replace tree, allowance	\$5,000
Total Scheduled Replacements		\$5,000

Item	2025	\$
No Scheduled Replacements		

**PROJECTED REPLACEMENTS - YEARS SIXTEEN TO THIRTY**

Item	2026	\$
3	Dredge Storm Water ponds,	\$471,250
Total Scheduled Replacements		\$471,250

Item	2027	\$
No Scheduled Replacements		

Item	2028	\$
5	Repoint Brick Entrance Mon	\$11,900
Total Scheduled Replacements		\$11,900

Item	2029	\$
No Scheduled Replacements		

Item	2030	\$
No Scheduled Replacements		

Item	2031	\$
4	Dredge Storm Water Ponds,	\$471,250
Total Scheduled Replacements		\$471,250

Item	2032	\$
No Scheduled Replacements		

Item	2033	\$
No Scheduled Replacements		

Item	2034	\$
6	Replace tree, allowance	\$5,000
Total Scheduled Replacements		\$5,000

Item	2035	\$
No Scheduled Replacements		

Item	2036	\$
1	Dredge Storm Water Ponds,	\$471,250
Total Scheduled Replacements		\$471,250

Item	2037	\$
No Scheduled Replacements		

Item	2038	\$
No Scheduled Replacements		

Item	2039	\$
No Scheduled Replacements		

Item	2040	\$
No Scheduled Replacements		

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## CONDITION ASSESSMENT

**General Comments.** Miller - Dodson Associates conducted a Reserve Study at Village Green in September, 2010. Village Green appears in very good condition for a community constructed in 1992. A review of the Replacement Reserve Inventory will show that we are anticipating most of the components achieving their normal economic lives.

The following comments pertain to the larger, more significant components in the Replacement Reserve Inventory and to those items that are unique or deserving of attention because of their condition or the manner in which they have been treated in the Replacement Reserve Analysis or Inventory.



**Storm Water Ponds.** The community is served by approximately 26 storm water ponds that have an approximate total surface area of 783,000 square feet (take-off from Google Earth image). These ponds will accumulate silt and, over time, lose their ability to store storm water at their design levels. This could result in overflows and minor local flooding conditions, in addition to environmental issues due to stagnant water caused by inadequate depth. Accordingly, the ponds will require periodic dredging.

Estimates of cost and the frequency of dredging the ponds are a function of many variables, including the volume of the pond, the siltation rate, the nature of the material being removed, the method of removal, and the haul distance to a site that will accept the spoil material. Most of this information is unknown and must be assumed for the purpose of Reserve Fund planning. The rate of siltation and the cost of periodically dredging the ponds to remove this material are very speculative and will vary greatly with local conditions.

As a rule of thumb, dredging should be accomplished when approximately one third of the volume of the pond has been filled with silt. In the absence of accurate information about the original depth of the ponds and the local siltation rate, we have assumed that it will be necessary to remove one cubic yard of material over one third of the pond area every 20 years. We have assumed that the material being removed is free of heavy metals and hydrocarbons, and that it will be accepted as fill at a local landfill. The cost to remove, haul and dispose of the material, as well as replacement of damaged banks, is estimated at \$65 per cubic yard, a price consistent with local experience. A more accurate prediction will require a hydrologic analysis and testing of the silt for contaminants, which is beyond the scope of our study. In the absence of hard data, we have assumed, as a prudent preliminary estimate, to provide funds in the Reserve to dredge one quarter of the pond area every five years.

Because of the significance of the cost of this work in establishing the correct Reserve contribution, we strongly recommend that the Association undertake studies to refine the information and replace the assumptions we have had to make with more factual information as a basis for the estimates.

We recommend the following:

- Periodically remove accumulated debris and vegetation growing in the ponds. We understand that the Association has contracted a pond maintenance contractor to perform this work regularly, the cost of which is borne by the Maintenance Budget, not Reserves.
- Survey the ponds to establish the current profile of the bottom. After five years of operation, have the pond re-surveyed to establish new depths to determine the local siltation rate. This will establish the frequency required for periodic dredging.
- Periodically sample and test for contaminants.
- Consult with civil engineering consultants and local contractors to determine the cost of removing and disposing of the spoil once its nature is known. Note that the periodic removal of overgrown vegetation from the pond is considered to be a maintenance activity and has not been reserved for nor included in the Reserve Analysis.



Typical pond



Note clean, well-maintained banks

**Storm Water System Piping.** The cost of replacing community storm water systems varies widely with the number of dwelling units in the community, the density of the housing, the local climate, and the total area of impervious surfaces. Costs for piping system replacement typically range between \$1,000 and \$3,000 per dwelling unit.

Due to the subsurface locations of the pipe, the condition of individual sections cannot be easily determined. Different types of pipe have drastically different life expectancies. Generally, both reinforced concrete pipe (RCP) and aluminized steel corrugated pipe (ASCP) have 75-year service lives. Corrugated metal pipe that has been fully coated with asphalt (FCCMP) has a service life of 32-38 years.

No engineering drawings were available to accurately determine distances, sizes of lines, and materials used for underground components of the system. We understand that the system, although almost 20 years old, is functioning well. Inspection of the underground lines and structures is beyond the scope of work of this study.

Because it is highly unlikely that all of the community's storm water piping will fail and require replacement in the period of the study, we have assumed that repairs to inlet structures will be performed as part of the pond dredging operations or covered by the maintenance budget. We also assume that inlets and catch basins within the road rights-of-way are a municipal responsibility.



**Entrance Monuments.** Brick masonry walls have been erected as entrance monuments to the community and to four neighborhoods. Because the brickwork has a very long life expectancy, we have excluded replacement of these walls. We have, however, included funding for the periodic tuckpointing of mortar joints as exposure to weather over an extended period of time will wash lime out of the mortar and weaken the joint. Periodic tuckpointing of these joints and replacement of damaged brick is required to extend the life of the wall. Unless damaged by settlement, this work is typically not required until the walls are 35 years old.

This Condition Assessment is based upon our visual survey of the property. The sole purpose of the visual survey was an evaluation of the common elements of the property to ascertain the remaining useful life and the replacement costs of these common elements. Our evaluation assumed that all components met building code requirements in force at the time of construction. Our visual survey was conducted with care by experienced persons, but no warranty or guarantee is expressed or implied.

End of Condition Assessment

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## CASH FLOW METHOD ACCOUNTING SUMMARY

This Village Green HOA - Cash Flow Method Accounting Summary is an attachment to the Village Green HOA - Replacement Reserve Study dated September 30, 2010 and is for use by accounting and reserve professionals experienced in Association funding and accounting principles. This Summary consists of four reports, the 2011, 2012, and 2013 Cash Flow Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- CASH FLOW METHOD CATEGORY FUNDING REPORT, 2011, 2012, and 2013. Each of the 6 Projected Replacements listed in the Village Green HOA Replacement Reserve Inventory has been assigned to one of 1 categories. The following information is summarized by category in each report:
  - Normal Economic Life and Remaining Economic Life of the Projected Replacements.
  - Cost of all Scheduled Replacements in each category.
  - Replacement Reserves on Deposit allocated to the category at the beginning and end of the report period.
  - Cost of Projected Replacements in the report period.
  - Recommended Replacement Reserve Funding allocated to the category during the report period as calculated by the Cash Flow Method.
- THREE-YEAR REPLACEMENT FUNDING REPORT. This report details the allocation of the \$55,000 Beginning Balance (at the start of the Study Year) and the \$277,132 of additional Replacement Reserve Funding in 2011 through 2013 (as calculated in the Replacement Reserve Analysis) to each of the 6 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and discussed below. The calculated data includes:
  - Identification and estimated cost of each Projected Replacement schedule in years 2011 through 2013.
  - Allocation of the \$55,000 Beginning Balance to the Projected Replacements by Chronological Allocation.
  - Allocation of the \$277,132 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2011 through 2013, by Chronological Allocation.
- CHRONOLOGICAL ALLOCATION. Chronological Allocation assigns Replacement Reserves to Projected Replacements on a "first come, first serve" basis in keeping with the basic philosophy of the Cash Flow Method. The Chronological Allocation methodology is outlined below.
  - The first step is the allocation of the \$55,000 Beginning Balance to the Projected Replacements in the Study Year. Remaining unallocated funds are next allocated to the Projected Replacements in subsequent years in chronological order until the total of Projected Replacements in the next year is greater than the unallocated funds. Projected Replacements in this year are partially funded with each replacement receiving percentage funding. The percentage of funding is calculated by dividing the unallocated funds by the total of Projected Replacements in the partially funded year.

At Village Green HOA the Beginning Balance funds 10.6% of Scheduled Replacements in the Study Year through 2015 and provides partial funding(0%) of replacements scheduled in 2016.
  - The next step is the allocation of the \$92,377 of 2011 Cash Flow Method Reserve Funding calculated in the Replacement Reserve Analysis. These funds are first allocated to fund the partially funded" Projected Replacements and then to subsequent years in chronological order as outlined above.

At Village Green HOA the Beginning Balance and the 2011 Replacement Reserve Funding, funds replacements through 2015 and partial funds (30.2%) replacements in 2016.
  - Allocations of the 2010 and 2011 Reserve Funding are done using the same methodology.
  - The Three-Year Replacement Funding Report details component by component allocations made by Chronological Allocation.

### 2011 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 6 Projected Replacements included in the Village Green HOA Replacement Reserve Inventory has been assigned to one of the 1 categories listed in TABLE CF-1 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- A Beginning Balance of \$55,000 as of the first day of the Study Year, January 1, 2011.
- Total reserve funding (including the Beginning Balance) of \$147,377 in the Study Year.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2011 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF-1								
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2011 BEGINNING BALANCE	2011 RESERVE FUNDING	2011 PROJECTED REPLACEMENTS	2011 END OF YEAR BALANCE	
SITE	10 to 20 years	3 to 20 years	\$1,901,900	\$55,000	\$168,226		\$223,226	

## 2012 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 6 Projected Replacements included in the Village Green HOA Replacement Reserve Inventory has been assigned to one of the 1 categories listed in TABLE CF-2 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$147,377 on January 1, 2012.
- Total reserve funding (including the Beginning Balance) of \$239,755 in 2011 through 2012.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2012 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF-2								
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2012 BEGINNING BALANCE	2012 RESERVE FUNDING	2012 PROJECTED REPLACEMENTS	2012 END OF YEAR BALANCE	
SITE	10 to 20 years	2 to 19 years	\$1,901,900	\$223,226	\$168,226		\$391,453	

### 2013 - CASH FLOW METHOD CATEGORY FUNDING REPORT

Each of the 6 Projected Replacements included in the Village Green HOA Replacement Reserve Inventory has been assigned to one of the 1 categories listed in TABLE CF-3 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$239,755 on January 1, 2013.
- Total Replacement Reserve funding (including the Beginning Balance) of \$332,132 in 2011 to 2013.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2013 - CASH FLOW METHOD CATEGORY FUNDING - TABLE CF-3								
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2013 BEGINNING BALANCE	2013 RESERVE FUNDING	2013 PROJECTED REPLACEMENTS	2013 END OF YEAR BALANCE	
SITE	10 to 20 years	1 to 18 years	\$1,901,900	\$391,453	\$168,226		\$559,679	

**CASH FLOW METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT**

TABLE 4 below details the allocation of the \$55,000 Beginning Balance, as reported by the Association and the

Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made by Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and outlined on Page CF-1. The accuracy of the allocations is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$55,000 on January 1, 2011.
- Replacement Reserves on Deposit totaling \$147,377 on January 1, 2012.
- Replacement Reserves on Deposit totaling \$239,755 on January 1, 2013.
- Total Replacement Reserve funding (including the Beginning Balance) of \$332,132 in 2011 to 2013.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- 

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates, Inc., to arrange for an update of the Replacement Reserve Study.

**CASH FLOW METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CF-4**

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2011 Reserve Funding	2011 Projected Replacements	2011 End of Year Balance	2012 Reserve Funding	2012 Projected Replacements	2012 End of Year Balance	2013 Reserve Funding	2013 Projected Replacements	2013 End of Year Balance
	SITE											
1	Dredge Storm Water Ponds, 25%	471,250	50,000	92,377		142,377	92,377		234,755	92,377		327,132
2	Dredge Storm Water Ponds, 25%	471,250										
3	Dredge Storm Water ponds, 25%	471,250										
4	Dredge Storm Water Ponds, 25%	471,250										
5	Repoint Brick Entrance Monuments	11,900										
6	Replace tree, allowance	5,000	5,000			5,000			5,000			5,000

## COMPONENT METHOD ACCOUNTING SUMMARY

This Village Green HOA - Component Method Accounting Summary is an attachment to the Village Green HOA - Replacement Reserve Study dated September 30, 2010 and is for use by accounting and reserve professionals experienced in Association funding and accounting principals. This Summary consists of four reports, the 2011, 2012, and 2013 Cash Flow Method Category Funding Reports (3) and a Three-Year Replacement Funding Report.

- COMPONENT METHOD CATEGORY FUNDING REPORT, 2011, 2012, and 2013. Each of the 6 Projected Replacements listed in the Village Green HOA Replacement Reserve Inventory has been assigned to one of 1 categories. The following information is summarized by category in each report:
  - Normal Economic Life and Remaining Economic Life of the Projected Replacements.
  - Cost of all Scheduled Replacements in each category.
  - Replacement Reserves on Deposit allocated to the category at the beginning and end of the report period.
  - Cost of Projected Replacements in the report period.
  - Recommended Replacement Reserve Funding allocated to the category during the report period as calculated by the Component Method.
- THREE-YEAR REPLACEMENT FUNDING REPORT. This report details the allocation of the \$55,000 Beginning Balance (at the start of the Study Year) and the \$504,679 of additional Replacement Reserve funding in 2011 through 2013 (as calculated in the Replacement Reserve Analysis) to each of the 6 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made using the Component Method as outlined in the Replacement Reserve Analysis. The calculated data includes:
  - Identification and estimated cost of each Projected Replacement schedule in years 2011 through 2013.
  - Allocation of the \$55,000 Beginning Balance to the Projected Replacements by the Component Method.
  - Allocation of the \$504,679 of additional Replacement Reserve Funding recommended in the Replacement Reserve Analysis in years 2011 through 2013, by the Component Method.

### 2011 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 6 Projected Replacements included in the Village Green HOA Replacement Reserve Inventory has been assigned to one of the 1 categories listed in TABLE CM-1 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- A Beginning Balance of \$55,000 as of the first day of the Study Year, January 1, 2011.
- Total reserve funding (including the Beginning Balance) of \$223,226 in the Study Year.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2011 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM-1								
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2011 BEGINNING BALANCE	2011 RESERVE FUNDING	2011 PROJECTED REPLACEMENTS	2011 END OF YEAR BALANCE	
SITE	10 to 20 years	3 to 20 years	\$1,901,900	\$55,000	\$168,226		\$223,226	

### 2012 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 6 Projected Replacements included in the Village Green HOA Replacement Reserve Inventory has been assigned to one of the 1 categories listed in TABLE CM-2 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$223,226 on January 1, 2012.
- Total reserve funding (including the Beginning Balance) of \$391,453 in 2011 through 2012.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2012 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM-2								
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2012 BEGINNING BALANCE	2012 RESERVE FUNDING	2012 PROJECTED REPLACEMENTS	2012 END OF YEAR BALANCE	
SITE	10 to 20 years	2 to 19 years	\$1,901,900	\$223,226	\$168,226		\$391,453	

### 2013 - COMPONENT METHOD CATEGORY FUNDING REPORT

Each of the 6 Projected Replacements included in the Village Green HOA Replacement Reserve Inventory has been assigned to one of the 1 categories listed in TABLE CM-3 below. This calculated data is a summary of data provided in the Three-Year Replacement Funding Report and Replacement Reserve Inventory. The accuracy of this data is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$391,453 on January 1, 2013.
- Total Replacement Reserve funding (including the Beginning Balance) of \$559,679 in 2011 to 2013.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates to arrange for an update of the Replacement Reserve Study.

2013 - COMPONENT METHOD CATEGORY FUNDING - TABLE CM-3								
CATEGORY	NORMAL ECONOMIC LIFE	REMAINING ECONOMIC LIFE	ESTIMATED REPLACEMENT COST	2013 BEGINNING BALANCE	2013 RESERVE FUNDING	2013 PROJECTED REPLACEMENTS	2013 END OF YEAR BALANCE	
SITE	10 to 20 years	1 to 18 years	\$1,901,900	\$391,453	\$168,226		\$559,679	

### COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING REPORT

TABLE CM-4 below details the allocation of the \$55,000 Beginning Balance, as reported by the Association and the \$332,132 of Replacement Reserve Funding calculated by the Cash Flow Method in 2011 to 2013, to the 6 Projected Replacements listed in the Replacement Reserve Inventory. These allocations have been made by Chronological Allocation, a method developed by Miller Dodson Associates, Inc., and outlined on Page CF-1. The accuracy of the allocations is dependent upon many factors including the following critical financial data:

- Replacement Reserves on Deposit totaling \$55,000 on January 1, 2011.
- Replacement Reserves on Deposit totaling \$223,226 on January 1, 2012.
- Replacement Reserves on Deposit totaling \$391,453 on January 1, 2013.
- Total Replacement Reserve funding (including the Beginning Balance) of \$559,679 in 2011 to 2013.
- No expenditures from Replacement Reserves other than those specifically listed in the Replacement Reserve Inventory.
- 

If any of these critical factors are inaccurate, do not use the data and please contact Miller Dodson Associates, Inc., to arrange for an update of the Replacement Reserve Study.

#### COMPONENT METHOD - THREE-YEAR REPLACEMENT FUNDING - TABLE CM-4

Item #	Description of Projected Replacement	Estimated Replacement Costs	Allocation of Beginning Balance	2011 Reserve Funding	2011 Projected Replacements	2011 End of Year Balance	2012 Reserve Funding	2012 Projected Replacements	2012 End of Year Balance	2013 Reserve Funding	2013 Projected Replacements	2013 End of Year Balance
SITE												
1	Dredge Storm Water Ponds, 25%	471,250	28,385	73,811		102,196	73,811		176,006	73,811		249,817
2	Dredge Storm Water Ponds, 25%	471,250	18,247	41,182		59,429	41,182		100,611	41,182		141,793
3	Dredge Storm Water ponds, 25%	471,250	8,110	28,946		37,056	28,946		66,002	28,946		94,949
4	Dredge Storm Water Ponds, 25%	471,250		22,440		22,440	22,440		44,881	22,440		67,321
5	Repoint Brick Entrance Monuments	11,900		661		661	661		1,322	661		1,983
6	Replace tree, allowance	5,000	258	1,185		1,444	1,185		2,629	1,185		3,815

## 1. COMMON INTEREST DEVELOPMENTS - AN OVERVIEW

Over the past 40 years, the responsibility for community facilities and infrastructure around many of our homes has shifted from the local government to Community Associations. Thirty years ago, a typical new town house abutted a public street on the front and a public alley on the rear. Open space was provided by a nearby public park and recreational facilities were purchased ala carte from privately owned country clubs, swim clubs, tennis clubs, and gymnasiums. Today, 60% of all new residential construction, i.e. townhouses, single family homes, condominiums, and cooperatives, is in Common Interest Developments (CID). In a CID, a home owner is bound to a Community Association that owns, maintains, and is responsible for periodic replacements of various components that may include the roads, curbs, sidewalks, playgrounds, street lights, recreational facilities, and other community facilities and infrastructure.

The growth of Community Associations has been explosive. In 1965 there were only 500 Community Associations in the United States. According to the U.S. Census, there were 130,000 Community Associations in 1990. Community Associations Institute (CAI), a national trade association, estimates there were more than 200,000 Community Associations in the year 2000, and that the number of Community Associations will continue to multiply.

The shift of responsibility for billions of dollars of community facilities and infrastructure from the local government and private sector to Community Associations has generated new and unanticipated problems. Although Community Associations have succeeded in solving many short term problems, many Associations have failed to properly plan for the tremendous expenses of replacing community facilities and infrastructure components. When inadequate replacement reserve funding results in less than timely replacements of failing components, home owners are exposed to the burden of special assessments, major increases in Association fees, and a decline in property values.

## 2. REPLACEMENT RESERVE STUDY

The purpose of a Replacement Reserve Study is to provide the Association with an inventory of the common community facilities and infrastructure components that require periodic replacement, a general view of the condition of these components, and an effective financial plan to fund projected periodic replacements. The Replacement Reserve Study consists of the following:

- Replacement Reserve Study Introduction. The introduction provides a description of the property, reviews the intent of the Replacement Reserve Study, and lists documents and site evaluations upon which the Replacement Reserve Study is based.
- Section A Replacement Reserve Analysis. Many components owned by the Association have a limited life and require periodic replacement. Therefore it is essential the Association have a financial plan that provides funding for the timely replacement of these components in order to protect the safety, appearance, and value of the community. In conformance with American Institute of Certified Public Accountant guidelines, Section A Replacement Reserve Analysis evaluates the current funding of Replacement Reserves as reported by the Association and recommends annual funding of Replacement Reserves by two generally accepted accounting methods; the Cash Flow Method and the Component Method. Section A Replacement Reserve Analysis includes graphic and tabular presentations of these methods and current Association funding.
- Section B Replacement Reserve Inventory. The Replacement Reserve Inventory lists the commonly-owned components within the community that require periodic replacement using funding from Replacement Reserves. The Replacement Reserve Inventory also provides information about components excluded from the Replacement Reserve Inventory whose replacement is not scheduled for funding from Replacement Reserves.  
  
Replacement Reserve Inventory includes estimates of the normal economic life and the remaining economic life for those components whose replacement is scheduled for funding from Replacement Reserves.
- Section C Projected Annual Replacements. The Calendar of Projected Annual Replacements provides a year-by-year listing of the Projected Replacements based on the data in the Replacement Reserve Inventory.
- Section D Condition Assessment. Several of the items listed in the Replacement Reserve Inventory are discussed in more detail. The Condition Assessment includes a narrative and photographs that document conditions at the property observed during our visual evaluation.
- Section E Attachments. The Appendix is provided as an attachment to the Replacement Reserve Study. Additional attachments may include supplemental photographs to document conditions at the property and additional information specific to the property cited in the Conditions Assessment (i.e. Consumer Product Safety Commission, Handbook for Public Playground Safety, information on segmental retaining walls, manufacturer recommendations for asphalt shingles or siding, etc).

### 3. METHODS OF ANALYSIS

The Replacement Reserve industry generally recognizes two different methods of accounting for Replacement Reserve Analysis. Due to the difference in accounting methodologies, these methods lead to different calculated values for the Minimum Annual Contribution to the Reserves. The results of both methods are presented in this report. The Association should obtain the advice of its accounting professional as to which method is more appropriate for the Association. The two methods are:

- **Component Method.** This method is a time tested mathematical model developed by HUD in the early 1980s. It treats each item in the replacement schedule as an individual line item budget. Generally, the Minimum Annual Contribution to Reserves is higher when calculated by the Component Method. The mathematical model for this method works as follows:

First, the total Current Objective is calculated, which is the reserve amount that would have accumulated had all of the items on the schedule been funded from initial construction at their current replacement costs. Next, the Reserves Currently on Deposit (as reported by the Association) are distributed to the components in the schedule in proportion to the Current Objective. The Minimum Annual Deposit for each component is equal to the Estimated Replacement Cost, minus the Reserves on Hand, divided by the years of life remaining.

- **Cash Flow Method.** The Cash Flow Method is sometimes referred to as the "Pooling Method." It calculates the minimum constant annual contribution to reserves (Minimum Annual Deposit) required to meet projected expenditures without allowing total reserves on hand to fall below the specified minimum level in any year. This method usually results in a calculated requirement for annual contribution somewhat less than that arrived at by the Component Method of analysis.

First, the Minimum Recommended Reserve Level to be Held on Account is determined based on the age, condition, and replacement cost of the individual components. The mathematical model then allocates the estimated replacement costs to the future years in which they are projected to occur. Based on these expenditures, it then calculates the minimum constant yearly contribution (Minimum Annual Deposit) to the reserves necessary to keep the reserve balance at the end of each year above the Minimum Recommended Reserve Level to be Held on Account. The Cash Flow Analysis assumes that the Association will have authority to use all of the reserves on hand for replacements as the need occurs. This method usually results in a Minimum Annual Deposit which is less than that arrived at by the Component Method.

- **Adjusted Cash Flow Analysis.** This program has the ability to modify the Cash Flow Method to take into account forecasted inflation and interest rates, thereby producing an Adjusted Cash Flow Analysis. Attempting to forecast future inflation and interest rates and the impact of changing technology is highly tenuous. Therefore, in most cases it is preferable to make a new schedule periodically rather than attempt to project far into the future. We will provide more information on this type of analysis upon request.

### 4. REPLACEMENT RESERVE STUDY DATA

- **Identification of Reserve Components.** The Reserve Analyst has only two methods of identifying Reserve Components; 1) information provided by the Association and 2) observations made at the site. It is important that the Reserve Analyst be provided with all available information detailing the components owned by the Association. It is our policy to request such information prior to bidding on a project and to meet with the individuals responsible for maintaining the community after acceptance of our proposal. After completion of the Study, the Study should be reviewed by the Board of Directors, individuals responsible for maintaining the community, and the Association's accounting professionals. We are dependent upon the Association for correct information, documentation, and drawings.

- **Unit Costs.** Unit costs are developed using nationally published standards and estimating guides and are adjusted by state or region. In some instances, recent data received in the course of our work is used to modify these figures.

Contractor proposals or actual cost experience may be available as part of the Association records. This is useful information which should be incorporated into your report. Please bring any such available data to our attention, preferably before the report is commenced.

- **Replacement vs. Repair and Maintenance.** A Replacement Reserve Study addresses the required funding for Capital Replacement Expenditures. This should not be confused with operational costs or cost of repairs or maintenance.

## 5. DEFINITIONS

**Adjusted Cash Flow Analysis.** Cash flow analysis adjusted to take into account annual cost increases due to inflation and interest earned on invested reserves. In this method, the annual contribution is assumed to grow annually at the inflation rate.

**Annual Deposit if Reserves Were Fully Funded.** Shown on the Summary Sheet A1 in the Component Method summary, this would be the amount of the Annual Deposit needed if the Reserves Currently on Deposit were equal to the Total Current Objective.

**Cash Flow Analysis.** See Cash Flow Method, above.

**Component Analysis.** See Component Method, above.

**Contingency.** An allowance for unexpected requirements. Roughly the same as the Minimum Recommended Reserve Level to be Held on Account used in the Cash Flow Method of analysis.

**Critical Year.** In the Cash Flow Method, a year in which the reserves on hand are projected to fall to the established minimum level. See Minimum Recommended Reserve Level to be Held on Account.

**Current Objective.** This is the reserve amount that would have accumulated had the item been funded from initial construction at its current replacement cost. It is equal to the estimated replacement cost divided by the estimated economic life, times the number of years expended (the difference between the Estimated Economic Life and the Estimated Life Left). The Total Current Objective can be thought of as the amount of reserves the Association should now have on hand based on the sum of all of the Current Objectives.

**Cyclic Replacement Item.** A component item that typically begins to fail after an initial period (Estimated Initial Replacement), but which will be replaced in increments over a number of years (the Estimated Replacement Cycle). The Reserve Analysis program divides the number of years in the Estimated Replacement Cycle into five equal increments. It then allocates the Estimated Replacement Cost equally over those five increments. (As distinguished from Normal Replacement Items, see below)

**Estimated Economic Life.** Used in the Normal Replacement Schedules. This represents the industry average number of years that a new item should be expected to last until it has to be replaced. This figure is sometimes modified by climate, region, or original construction conditions.

**Estimated Economic Life Left.** Used in the Normal Replacement Schedules. Number of years until the item is expected to need replacement. Normally, this number would be considered to be the difference between the Estimated Economic Life and the age of the item. However, this number must be modified to reflect maintenance practice, climate, original construction and quality, or other conditions. For the purpose of this report, this number is determined by the Reserve Analyst based on the present condition of the item relative to the actual age.

**Estimated Initial Replacement.** For a Cyclic Replacement Item (see above), the number of years until the replacement cycle is expected to begin.

**Estimated Replacement Cycle.** For a Cyclic Replacement Item, the number of years over which the remainder of the component's replacement occurs.

**Minimum Annual Deposit.** Shown on the Summary Sheet A1. The calculated requirement for annual contribution to reserves as calculated by the Cash Flow Method (see above).

**Minimum Deposit in the Study Year.** Shown on the Summary Sheet A1. The calculated requirement for contribution to reserves in the study year as calculated by the Component Method (see above).

**Minimum Recommended Reserve Level to be Held on Account.** Shown on the Summary Sheet A1, this number is used in the Cash Flow Method only. This is the prescribed level below which the reserves will not be allowed to fall in any year. This amount is determined based on the age, condition, and replacement cost of the individual components. This number is normally given as a percentage of the total Estimated Replacement Cost of all reserve components.

**Normal Replacement Item.** A component of the property that, after an expected economic life, is replaced in its entirety. (As distinguished from Cyclic Replacement Items, see above.)

**Normal Replacement Schedules.** The list of Normal Replacement Items by category or location. These items appear on pages designated.

**Number of Years of the Study.** The number of years into the future for which expenditures are projected and reserve levels calculated. This number should be large enough to include the projected replacement of every item on the schedule, at least once. This study covers a 40-year period.

One Time Deposit Required to Fully Fund Reserves. Shown on the Summary Sheet A1 in the Component Method summary, this is the difference between the Total Current Objective and the Reserves Currently on Deposit.

Reserves Currently on Deposit. Shown on the Summary Sheet A1, this is the amount of accumulated reserves as reported by the Association in the current year.

Reserves on Hand. Shown in the Cyclic Replacement and Normal Replacement Schedules, this is the amount of reserves allocated to each component item in the Cyclic or Normal Replacement schedules. This figure is based on the ratio of Reserves Currently on Deposit divided by the total Current Objective.

Replacement Reserve Study. An analysis of all of the components of the common property of the Association for which a need for replacement should be anticipated within the economic life of the property as a whole. The analysis involves estimation for each component of its estimated Replacement Cost, Estimated Economic Life, and Estimated Life Left. The objective of the study is to calculate a recommended annual contribution to the Association's Replacement Reserve Fund.

Total Replacement Cost. Shown on the Summary Sheet A1, this is total of the Estimated Replacement Costs for all items on the schedule if they were to be replaced once.

Unit Replacement Cost. Estimated replacement cost for a single unit of a given item on the schedule.

Unit (of Measure). Non-standard abbreviations are defined on the page of the Replacement Reserve Inventory where the item appears. The following standard abbreviations are used in this report:

EA: each    FT: feet    LS: lump sum    PR: pair    SF: square feet    SY: square yard

#### 6. LIST OF RECOMMENDED REPAIRS - PROCEDURES

A List of Recommended Repairs is offered as a supplemental report to the Replacement Reserve Study (at an additional fee) to assist the Association in understanding the financial implications of all items owned by the Association, not just the items included for funding by Replacement Reserves listed in the Replacement Reserve Inventory. The following information relates to the List of Recommended Repairs:

- Repair costs. Cost range estimates given in the repair list assume that all work by a given trade will be done together as a single project. If repairs are done piece-meal, the costs would be significantly higher. The costs of any repairs to be funded out of the Reserve Fund should be subtracted from the Reserves Currently on Deposit figure. The Board or Property Manager should coordinate this decision with the Reserve Analyst as part of the revision process.
- Completion of repairs. The Replacement Reserve Analysis assumes that all repairs cited in the Repair List will be completed within a twelve-month period of time. Estimated Life Left in the Replacement Reserve Study has been factored under this assumption. Any deletions or delays of the projects included in the List of Recommended Repairs may result in major inaccuracies in the Replacement Reserve Analysis.
- Safety issues. If safety issues have been cited, they should be given the highest priority and should be done immediately upon receipt of this report. The Board must recognize that from a liability standpoint, they have been made aware of the existence of these unsafe conditions, if any, once the report is delivered for their review.
- Unit costs. Nationally published standards and standard estimating manuals have been used in the development of this report. Contractor proposals or actual cost experience may be available as part of the Association records. We will adjust our figures to conform to your experience if the material or information is disclosed to us and/or made available for our use.