

# PM+

SPECIALIZING IN RESERVE STUDIES SINCE 1990  
A PROFESSIONAL CORPORATION

## RESERVE STUDY LEVEL II UPDATE

### LAKE MANASSAS ROA

Gainesville, Virginia

Prepared for:

Board of Directors

Date:

December 8, 2014



Engineer

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## Executive Summary

- This study was prepared by comparing "Your Current Funding" plan to the two recognized methods for preparing reserve studies, "Cash Flow Method" and "Component Method." The Cash Flow Method is also known as the Pooling Method.
- The following relevant data was used in preparing this study:

1st Study Year FY14	\$1,131,540 AOH at Start of Fiscal Year ♦
FY Begins 01-Jul-13	\$272,510 Your Contribution in FY14 ♦
Inspection Date(s) 4/4 & 8/13	2.47% Inflation ♦♦
# Units 551	3.67% Interest ♦♦

- ♦ AOH (cash amount on hand at start of fiscal year) and current year contribution were supplied by management and are considered best information available as of the proposal acceptance date. They are not audited amounts.
- ♦♦ Interest and inflation factors<sup>1</sup> best project the future needs of the property. Inflation is based on the last ten year average for the Consumer Price Index (CPI); interest on savings is based on the 10-Year U.S. Treasury Note Constant Maturity Yield.
- The following table summarizes our findings of the funding needed to meet the property's reserve requirement and compares your current funding to the two recognized methods for funding the reserves (see "Funding Plans - 30 Year Projection" chart):

<b><u>FY14 Contribution Summary</u></b>		
Your <sup>2</sup> Contribution	Cash Flow Method	Component Method
<b><u>Contribution Amount/Plan</u></b>		
\$272,510	\$293,860	\$459,160
<b><u>Average Contribution/Owner</u></b>		
\$495	\$533	\$833
<b><u>30-Yr Min/Max Balance</u></b>		
(\$163,040)	\$725,650	\$1,558,090
\$1,598,140	\$2,753,260	\$7,850,200
<b><u>50-Yr Min/Max Balance</u></b>		
(\$3,605,330)	\$920,370	\$7,888,780
\$836,920	\$4,139,380	\$17,353,730

- Your planned FY14 contribution will need to be increased to meet the reserve needs of the property.
- Cash flow method is the preferred method for funding reserves. It provides the most consistency in the annual contribution, from one year to the next year. Future contribution increases can be mostly attributable to inflation.
- Component method contributions can be expected to fluctuate considerably from year to year, making it less practical as a funding plan. If this method is chosen, the reserve tables should be updated more frequently, preferably annually.

1. Although the factors used may not prove to be precise they should be reasonable predictors of cost increases and contributions needed to support the reserve requirement over the life of the study.

2. If the study is being done for other than the current fiscal year, inflation is applied to your current contribution.

- In the funding plan we recommend, column (16) portrays the year end balances, both minimum and maximum, we expect will be available, based on the assumptions in this study. These amounts are calculated to assure: 1) funds are available for needed work, 2) there is always a minimum amount of savings available to provide for unforeseen contingencies, and 3) when studies are updated there is not a substantial increase needed to meet the reserve requirement. To prevent against substantial increases **PM+** studies take into consideration the first thirty years of the study and an additional twenty years, making the "look at" period a total of fifty years. The 50-year projection is to assure our recommended contribution is based on a sound analysis of the reserve needs of the property.
- Recommendation:
  - Fund the reserves using the Cash Flow method.

## Study Information

### Introduction

The purpose of this study is to design a **Table of Repair/Replacement Reserves** for the common and limited common elements of the property based on the current condition of the components. If the property is to preserve the owner's investment and its quality of life features, a reserve of funds is necessary to do future work.

In addition to the above, Properties located in the state of Virginia are required by Virginia Statutes, 2003 Condominium and Property Owner's Association Act, to conduct reserve studies at least every five years, review the results of the study at least annually and make adjustments as necessary unless the condominium instruments/declaration imposes more stringent requirements. Your attention is called to Sections 55-79.83:1 or 55-514.1 of the Statutes for the complete text.

This study is the seventh engagement for the property by **PM+**. **PM+** has neither collaborated with nor provided consulting advice to others on issues pertaining to the property.

In developing the table we consider items that have a predictable life cycle as well as those that will most likely need annual maintenance and repairs to keep them in serviceable condition. They are as follows:

#### Predictable life cycle (Non # sign items).

These components have a predictable life cycle (an average useful life). We show that life in column (3) in the "Table of Repair and Replacement Reserves." At the end of its useful life total replacement will be needed.

#### Annual Allowances (Items preceded by the # sign).

We reserve an average annual amount for these items. These items are typically "life of the property" or long lasting components that do not have a predictable life cycle. We assume the association will keep these components in satisfactory condition with timely spot repairs.

If major work to these items is needed it usually requires the services of an architect, engineer, or specialty contractors to determine scope and cost. We do not reserve for major work in this category unless we are informed the community has a project pending and an estimated cost is known. If future major work is needed it should be budgeted for in an updated reserve study or funded from other sources.

There are three major considerations to be taken into account when establishing the **Reserves**: 1) properly funded reserves avoids "special assessments", 2) each owner should pay their fair share for the time they use the component, and 3) when reserve funds are available the Association is more inclined not to defer work. Work deferral results in additional deterioration and "catch-up" costs to restore the item to a good condition. In addition to these considerations, a new factor has recently become apparent. Years ago owners were poorly informed on the importance of the reserves and paid very little attention to whether or

not a property had an adequate plan for funding the reserves. With the inclusion of reserve tables in resale packages and other publicity, many potential buyers are now verifying the reserve status before they buy.

Although we use generally accepted techniques and the best information available, it is possible actual costs and useful life can vary from our estimates. We recognize that possibility and attempt with our methodology to arrive at the overall funding recommendation that will avoid, or minimize the need for a special assessment to do reserve work.

This study only considers items already in place. It does not take into consideration any major work the association is contemplating to alter present conditions, unless noted otherwise. Nor does it consider correcting hazardous or defective conditions associated with asbestos, radon, lead, mold, FRT, utility, plumbing, mechanical, electrical systems, etc. Work of this nature requires a special study to determine scope and costs.

This purpose of this study is to determine the funding needed to support the property's reserve requirement and a recommended funding plan to meet the requirement. No other use is intended.

For any reserve projects in progress on the date(s) of our inspection our observation of the work should not be considered a project audit or quality control inspection. We leave that to others to determine.

In order for the Table to be an effective budget management tool it will need periodic updates. Because reserves on hand, current costs, quality of maintenance, acts of God, vandalism, and useful life can vary from year to year, a periodic review will assure it remains an effective management tool.

## **Maintenance/Repair/Replacement “Tips” and Reserve Considerations**

There are three levels of care needed to maximize the useful life of equipment and property components: 1) Maintenance, 2) Repair and 3) Replacement.

Maintenance is taking care of an item by doing such tasks as sealing pavement cracks to prevent water from undermining the base, painting to prevent metal corrosion or wood rot, lubricating moving parts on mechanical equipment, fan belt adjustments, etc. It involves the least expenditure of funds and is the best way to maximize useful life. Repair is replacing a portion of an item, such as, a section of pavement, a part of a roof, an air conditioning compressor, etc. It's usually more expensive than maintenance. The most costly is replacement. It involves the entire replacement of the item.

The application of good maintenance and repair techniques can be explained by the following example: An asphalt parking lot of 1000 square yards develops a 10 foot long crack in the surface. The crack can be sealed for about a dollar a linear foot. By doing so, water will not seep through the asphalt causing damage to the base course. That simple maintenance action extended the useful life of the pavement at minimum cost. Assume the crack was not sealed and it grew to a 12' by 12' base damaged area. Cost of repairs would be approximately 60 times as much as fixing the crack. If the damaged area was not repaired and eventually the entire lot had to be replaced it would cost considerably more. Therefore, the prudent thing to do is good maintenance. It's the least costly of the three levels of work.

Prior to totally replacing an item, e.g., a roof, a fence, an air conditioner, etc., all measures should be taken to extend the useful life of the item with repairs. If the roof is leaking don't automatically think the entire roof needs to be replaced. Most leaks occur around penetrations and flashed areas and they can be repaired for less than replacing the entire roof. Fence posts almost always rot out at ground level before the rest of the fence. Posts can be replaced without purchasing a complete new fence. The same applies to most mechanical/electrical equipment. Tube leaks frequently occur in boilers; compressor failures occur in air conditioners and circuit breakers wear out in electric panels. These kinds of failures are repairable without replacing the entire item. The reserve table should be used as an aid in establishing budgets - not as a work plan. When used as a budget management tool its effectiveness will be recognized when funds are readily available to do work - when it must be done. Do not use the remaining useful life data as a work plan. It should be treated as a “window of probable expectancy”, based on statistical information, historical trends, conditions at time of survey and experience of when repair or replacement is most likely to be needed. Actual work should not be done until needed. For example, if paving is estimated to need replacement in five years but it's not a problem at that time, put it off until it is a problem. Conversely, if repairs are necessary sooner, do them sooner.

When contracting for services, seek competitive bids and purchase only what's necessary to restore the item to its “like original” condition. Include state-of-the-art improvements but avoid over buying or substantially enhancing an item beyond its original condition. Such improvements are not included in the cost estimates.

Catastrophic failures to such items as footers, foundations, floors, exterior walls and total replacement of utility systems, etc., are not included in the table. They are not included because they are not predictable

and it is rare that these items have to be replaced in total. We do recommend a reasonable annual amount be set aside for some repairs and reflect that in the reserve table.

Funding for reserves should be fair to all owners; past, present and future. The worst case scenario for a property is to have no money set aside to pay for repairs/replacements forcing the current owners to pay the total cost. Additionally, having insufficient reserves also presents some injustices as illustrated by the following example:

Mr. and Mrs. "X" owned a unit at the property for the first ten years of its existence when reserve funding was suppressed and insufficient to take care of future problems. Mr. and Mrs. "X" sell their unit and leave. Five years after they leave the pavement and sidewalks need to be repaired. Mr. & Mrs. "Y" now own the unit and receive notice they are to be "specially assessed" to pay for the repair costs.

For demonstration purposes let's say the pavement and sidewalk repairs costs \$150,000 and the association has \$50,000 in the reserve account. Let's also assume there are 100 units at this property.

Over the last fifteen years, past and present owners set aside \$50,000 to take care of the \$150,000 expenditure. Expressed in \$/year that equates to \$3,333/yr or \$33.33 per owner per year.

Mr. & Mrs. "X" had the benefit of good paving and sidewalks for 10 years at a total cost to them of \$333.30. Unfortunately for Mr. & Mrs. "Y", they only used the items for five years, but it will cost them \$1166.50 for their share of the repairs.

Calculations for the above are as follows:

$$5 \text{ years they lived there} \times \$33.33/\text{yr} = \$166.50$$

The difference between amount in reserves and repair costs divided by number of unit owners:

$$\begin{aligned} (\$150,000 - 50,000) / 100 &= \underline{\$1000.00} \\ \text{Total cost to Mr. \& Mrs. "Y"} &= \$1166.50 \end{aligned}$$

Or, said another way:

Mr. and Mrs. "X" used the items for 66% of their useful life but only paid 22% of the repair cost.

Mr. and Mrs. "Y" used the items for 34% of their useful life but had to pay 78% of the cost.

For funding to be fair all owners should contribute their share of the costs for the period of time they use the item.

Where we describe preventive maintenance recommendations in this study they are intended to be general in nature and the most common tasks needed to extend item useful life. They are not all inclusive; we do not imply that is all that is necessary for good maintenance. Manufactures brochures, service specialty companies and other qualified sources should be consulted to establish the full array of actions needed for proper preventive maintenance.

## **Level of Service and Engineer's Qualification**

This is a Level II, Update, (with on-site review) as defined by CAI's National Reserve Study Standards

This study was compiled in accordance with generally accepted standards and represents our professional opinion on the items, timing and dollar amounts that should be budgeted for repair and replacement. The contents of this study comply with the proposal acceptance. In compiling this study we used information obtained from drawings, field measurements, observations and management (information provided by management is considered to be reliable). We also took into considered construction features, current conditions and component age. Testing was not performed, nor was demolition done or panels removed to determine conditions that are not obvious. Based on our inspection and the information gained during the inspection this study contains, to the best of our ability, all material issues required to determine the funding needed to meet the property's reserve requirement.

This reserve study was done in its entirety by Mario B. "Ben" Ginnetti, a registered professional engineer (P.E.) licensed to practice engineering in the states of Virginia, Maryland and the District of Columbia. He is also a CAI Certified Reserve Specialist (RS) and a Professional Reserve Analyst (PRA).

### **Age, Units and Style**

Constructed began in the mid 1990's and is almost built-out.  
551 Luxury homes. All homes are single family, except for 20 townhome units.  
Major amenities – swimming pool, bathhouse, tennis courts and tot-lot.

### **"Cash flow" and "Component" Method Studies**

This study was calculated using both the Cash flow and Component methods. A synopsis of each method is as follows:

Cash flow method - This method develops the funding plan by having the annual contributions offset the variable annual expenses. All expenses are averaged over the life of the study to calculate the annual contribution needed to support the reserve requirement.

Component method - This method develops the funding plan by dividing the remaining useful life into the balance needed to fund the item for only the next cycle of work. The individual item contributions are then added to calculate the total annual contribution needed to support the reserve requirement for that year.

Because of averaging the cash flow method provides a more consistent annual contribution from one update to another and the annual contribution can be calculated so that a special assessment is not anticipated over the life of the study. With the component method annual contributions can vary significantly from year to year depending on where the components are in their life cycle. If the component method is chosen the reserve tables should be updated more frequently, preferably annually.

### **Funding Goals**

The following represent the basic categories of Funding Plan goals as defined by the Community Association Institute (CAI) for reserve studies:

- Baseline Funding - Establishing a Reserve funding goal of keeping the Reserve cash balance above zero.
- Component Full Funding - Setting a Reserve funding goal of attaining and maintaining cumulative Reserves at or near 100% funded.
- Statutory Funding - Establishing a Reserve funding goal of setting aside the specific minimum amount of reserves required by local statutes or financing agencies.
- Threshold Funding - Establishing a Reserve funding goal of keeping the Reserve balance above a specified dollar or Percent Funded amount. Depending on the threshold, this may be more or less conservative than "Fully Funding." This study complies with this goal.

## Common and Limited Common Elements (Major Components)

### Pavements/Sidewalks

Asphalt Pavements  
Concrete Curbs & Gutters  
Concrete Sidewalks

### Swimming Pool

Pavements  
Curbs/Gutters/Sidewalks  
Peaked Roof  
Gutter and Downspouts  
Siding  
Heating and Air Conditioning  
Water Heater  
Adult Pool  
Baby Pool  
Concrete Deck  
Decorative Metal Fencing  
Lighting  
Pool Furniture  
Arbor

### \* Tennis/Basketball Courts

Asphalt Courts  
Pole Lights  
Chain Link Fencing

### Multi Purpose Courts

Asphalt  
Pole Lights

### Tot-Lot

Metal & Plastic

### Other Property Features

Gate House  
Sliding Gate  
Gate Arms  
Entry Control  
Signs  
Mail Boxes (Townhome units only)  
Retaining Walls/Railings  
Masonry Columns  
Storm Drainage  
Irrigation Systems  
Electrical Systems  
Fencing  
Rip Rap

## Reading and Understanding the Tables and Charts

### General Comment

The Repair and Replacement Table shows the common or limited common element, average and remaining useful life and estimated cost for work. This information, for the most part, is self-explanatory; however, when we believe more information is needed, we provide comments or use photographs.

### Table of Repair & Replacement Reserves

#### Column

- (1) The various property components and major items of equipment we believe the community should include in the reserves. Where a 15%, 30%, etc., is shown means that total replacement of that item is not anticipated. These items generally have an indefinite life span and only need partial repairs. Items preceded by the pound (#) sign are budgeted for a year at a time. Typically, these items need annual repairs. These items should be adjusted at each update based on historical trends and the amount of work anticipated the following year. If we have omitted or added any items that are not common or limited common area responsibility, please inform us so we can provide a revised table. It also applies if the association accomplishes the work from their annual operating expense and a reserve set-aside is not needed.
- (2) Approximate quantity and unit of measure. The following abbreviations are used; however, they may not all appear in this study:

AC – Acres	HP – Horsepower
AOH - Amount-On-Hand	RC - Replacement Cost
AnAvg - Annual Average	SF - Square Feet
BLD - Building	SY - Square Yards
EA - Each	TN - Tons
CY - Cubic Yards	UN - Units
LF - Linear Feet	> - Greater Than
LS - Lump Sum	< - Less Than
- (3) The components average useful life (Avg). Leading publications on useful life data, our own experiences and historical trends are used to determine the average useful life.
- (4) Our best estimate of the remaining useful life (RUL). Some items in the table may not fail precisely as shown. We use the remaining useful life in conjunction with the estimated cost to calculate the annual contribution needed to fund the component.
- (5) Current cost estimates are in current dollars. Estimates are based on similar work in the greater Washington area, association experience, industry publications, such as R.S. Means and Home-Tech, contractors and other reliable sources. It assumes the association will competitively seek bids and obtain a fair price in today's market. Some work, such as, balconies, roofing, garages, façade, boiler and chiller replacements, etc. may need the services of an engineer or architect to determine scope and oversee repairs. Those estimates take precedence over those shown in the table. Conditions that are not obvious from observations, such as excessive deterioration in materials and systems could result in higher costs than shown.
- (6) Distribution of the funds the association had (is projected to have) at the start of their fiscal year or the amount we were requested to use. The program distributes a prorated amount to each item.
- (7) The amount needed to fund the balance of the requirement.
- (8) The contribution needed to fund the 1<sup>st</sup> year applying the cash flow method. This value is the product of the reserve components and the Funding Plans - 30 Year Projection chart. The annual contribution is calculated so that the reserve balance never falls below the "X" axis and there is always a minimum balance for unforeseen contingencies.

(9) The contribution needed to fund the 1<sup>st</sup> year applying the component method.

Fiscal Years 1 - 10 Expense Projection - The actual cash out-lays the association should be prepared to fund in the first ten years of the study.

Fiscal Years 11 - 30 Expense Projection - The actual cash out-lays the association should be prepared to fund in the next twenty years of the study. Note - these projections are needed to verify the association is funding the reserves to avoid a "Special Assessment" over the life of the study.

Average Contribution Per Owner - The average contribution needed per owner to fund the 1st year reserve contribution. This amount is not indicative of each owner's individual contribution.

### **Funding Plans - 30 Year Projection**

Column

- (10) Fiscal Year.
- (11) Projected annual expenses.
- (12) Cumulative expenses over 30-years.
- (13) 30-year projected contribution if your current funding plan continues, inflation applied.
- (14) Projected year-end balances based on your current contributions, interest applied.
- (15) 30-year projected contribution if the cash flow method is implemented to fund the reserves, inflation applied.
- (16) Projected year-end balances based on the cash flow method, interest applied.
- (17) 30-year projected contribution if the component method is implemented to fund the reserves, inflation applied.
- (18) Projected year-end balances based on the component method, interest applied.

### **Graphs**

Graphs depict the projected contributions and year end balances for each plan. The contribution objective should be to have a consistent contribution, year after year, that can be maintained with inflation adjustments. Avoid fluctuating contributions as they can impose financial hardships on owners. The plot objective for the reserve balance is to have the year end balances always above the "X" axis. If it falls below, it indicates a special assessment or loan will be needed to support the reserves.

### **Summary**

- 30-Year Annual Average - Average contribution needed to fund each funding plan.
- 30-Year Average/Owner - Average contribution per owner for each funding plan.
- 30 & 50-Year Minimum Balances - Projected minimum balance for each funding plan. An amount to be held in reserve to fund unforeseen contingencies.

### **Property Comparison (Not shown in some studies)**

The "Property Comparison" chart compares the property's current funding to the last 100 properties we have studied. The comparison shows the maximums, minimums and property averages compared to your property. Three comparisons are made:

- % Funded - Ratio of the current to the ideal Reserve Balance for each component in the Reserve Table. The ratio is a product of the "used-up" life, useful life and component cost.
- Reserve Depletion Factor - Number of years amount-on-hand will fund (It's the same as the "go broke" date if no more money is added to the reserves).
- Cost Per Owner – Average contribution per owner needed to meet the reserve requirement. Dollar amounts will vary from property to property based on construction features, common/limited common elements, past contributions to the reserves and other factors that may not result in a true comparison.

## COMMENTS

In general, each item has been reviewed for cost and remaining useful life and, where appropriate, changes have been made to reflect current conditions. Below, we address those items that have had a significant change since the last study was done and/or we comment on items that need explaining or provide recommendations for extending component useful life. Interested parties should refer to the earlier studies for previous comments made about the components.

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<b>PAVEMENTS</b>	<p>Since the FY12 study was done roads have had cracks sealed, some seal coated and Birnham Woods, Crooked Oaks and Horseshoe Bay Courts have been milled and overlaid. Overall, road condition is good. To maximize pavement useful life continue following the two step plan outlined below:</p> <p>1) Implement a preventive maintenance program - preventive maintenance consist of sealing open cracks (equal to or greater than 1/8"), repair wearing surface/base/sub-base areas that have failed (distinguished by "alligator" or "chicken wire" cracking), applying a seal coat to the entire surface and repaint all traffic markings. An additional benefit of the seal coat and traffic markings is the pavement will look uniform and that enhances property appearance. Funding for this work is identified as "Preventive Maintenance" in the reserve table. Although we allow for this work to be done every four years, if cracks open or asphalt failures occur sooner they should be repaired at that time. The contingency built into the funding plan should be more than adequate to fund these repairs in the off years. If additional funds are needed in the scheduled years, likewise, the contingency should be used.</p> <p>2) Be prepared to repave all asphalt around the time period shown in the table. Although we allow for 100% of the asphalt to be repaved our experience supports a smaller percentage of the base/sub-base will need repairs. We show that percentage in the "Base Course/Concrete Repairs" entry. When repaving, there are two possible courses of action; 1) mill only near the gutter pans to preserve proper drainage and then place a 1-1/2" of compacted asphalt throughout, and 2) total milling of all the asphalt and repave to the thickness removed. Also reserves for major concrete repairs to curbs, gutters and sidewalks.</p>
<b>TENNIS/BASKETBALL COURT(S)</b>	Two of six courts have been converted for basketball use, with four hoop standards installed. A contract has been awarded to resurface all courts; work is planned for CY2013.
<b>SWIMMING POOL COMPLEX/OFFICE</b> PAINTING INTERIOR GATE/ELECTRONIC CONTROL	Office is scheduled to be painted in FY13. We reserve for the next time painting may be needed. A new gate with electronic controls was installed to control access into the swimming pool area. We reserve for the next time replacement may be needed.
<b>STONEWALL GATE HOUSE</b>	Plans are being considered to enhance the exterior and interior of the gate house. We reserve \$20,000 for this work. Actual cost could vary from this estimate depending on features desired.
<b>OTHER PROPERTY FEATURES</b> STREET LIGHTS-HOUSING AREA PAINT LIGHT POLES-HOUSING/SWIM & TENNIS IMMEDIATE TREE/LANDSCAPE IMPROVEMENTS COMMUNITY WIDE SECURITY ENHANCEMENTS	A new entry to combine all street lights throughout the housing area into one line item. Provides for painting of all poles both for appearance and metal protection. Entry to support a one time tree and landscape enhancement project; entry demonstrates project can be done within the current reserve contribution. Same as above.
<b>ANNUAL ALLOWANCES</b>	This category provides for non-cyclical items that typically experience some kind of failure each year or every few years. We budget a reasonable amount each year to keep the items in good repair. Funding from other sources may be needed if major repairs are needed.
<b>FACADE/CAULK/WATERPROOFING/WINDOWS/DOORS</b>	Minor repairs to bricks, siding, shutters, sealing windows, doors, walls, expansion joints and other openings to keep buildings weather tight.
<b>CURBS/GUTTERS/SIDEWALKS/STEPS</b>	Curbs, gutters, sidewalks and steps will deteriorate, heave, settle, be damaged by vehicles or sustain other types of damage. Defective areas should be corrected as needed.
<b>POOL DECK/COPING &amp; TILE</b>	Deck, coping and tiles will need joint and crack sealing and spot repairs to keep them in good condition to meet safety and health department requirements.
<b>POOL FURNITURE</b>	Some pool chairs, tables and other furnishings will need servicing or replacement each year to keep them in good repair. Also allows for the upkeep of lifeguard stands and diving boards, if installed.
<b>OFFICE FURNITURE/EQUIPMENT</b>	Upkeep of furniture, computers, desks, calculators, telephones, file cabinets, etc.
<b>MECHANICAL/PLUMBING/ELECTRICAL</b>	A annual expenditure to keep in good repair common area mechanical, plumbing and electric systems that are not reserved for elsewhere. Heat exchangers, coils, unit heaters, motors, pumps, gauges, valves, controls, fire, security, mechanical system, plumbing pipes, electric faults and other kinds of system deterioration will need repair as problems occur.
<b>SECURITY SYSTEM UPKEEP/REPAIRS</b>	Provides for needed repairs and replacements for installed security systems.
<b>GATE REPAIRS</b>	Spot repairs as needed to keep control gate systems in operation.

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### COMMENTS

TRAIL REPAIRS	Allows for spot repairs to keep trail in good repair. Trail is exposed to light loads, e.g., pedestrians, carriages, bicycles, etc. As failures occur due to erosion, tree root heaving, settling, asphalt slippage, etc., repairs should be made as needed.
TOT-LOT MULCH	New entry. Provides for mulch replenishment. 70% of tot-lot injuries are caused by children falling on non-absorbing materials.
RETAINING WALLS/RAILINGS AND MASONRY COLUMNS	Concrete, masonry and stone walls are a "life of the property" component that should never need to be completely replaced unless a catastrophic failure occurs. We allow an annual amount to keep them in good repair. Railings will also last the life of the property if spot repaired and periodically painted.
IRRIGATION SYSTEM	Allows an annual amount for the upkeep of the irrigation systems throughout the property. These systems can be maintained indefinitely by doing repairs as needed.
TREES/LANDSCAPE REMOVAL/REMEDICATION	As communities mature, tree care and landscape needs can become expensive. Reserves for removal/replacement of diseased/dead plantings and general enhancements.
SITE ITEMS	Repairs to entrance features, signs, sign posts, flood lights, drainage, picnic tables/benches, trash receptacles, dog stations and other miscellaneous items.

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### EXCLUSIONS

ADA ACCESSIBLE SWIMMING POOL	We make no allowance for making pools ADA accessible as the pools are not considered to be for public use. If this assumption is incorrect please advise and we will revise the study.
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## Appendix A

TABLE OF REPAIR & REPLACEMENT RESERVES

FISCAL YEARS 1 - 10 EXPENSE PROJECTION

ITEM	APPROXIMATE QUANTITY	USEFUL LIFE (YRS)	ESTIMATED COST CURRENT (\$)	DISTRIBUTION AS OF 01-Jul-13 (%)	BALANCE NEEDED TO FUND RESERVE	FY14 CONTRIBUTION CASH FLOW	FY14 COMPONENT METHODS	(6)	(7)	(8)	(9)	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
												\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
<b>RESIDENTIAL ROADS</b>																						
<b>EAST PENINSULA</b>																						
<b>SECTION 1</b>																						
<b>KAMEHAMEHA PLACE</b>																						
	2,543	SY	4	3	\$4,700	\$1,830	\$2,870	\$610	\$960	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
	2,543	SY	13	5	31,780	12,390	19,390	2,480	3,880	0	0	0	0	0	0	0	0	0	0	0	0	0
	381	SY	13	5	12,970	5,060	7,910	1,010	1,580	0	0	0	0	0	0	0	0	0	0	0	0	0
	20	EA	20	8	3,800	1,480	2,320	190	290	0	0	0	0	0	0	0	0	0	4,510	0	0	0
<b>SECTION 1 - ESTATE LOTS</b>																						
<b>VALDERAMA COURT</b>																						
	3,967	SY	4	1	7,340	2,860	4,480	2,870	4,480	0	0	0	0	0	0	0	0	0	0	0	0	0
	3,967	SY	13	10	49,580	19,330	30,250	1,940	3,030	0	0	0	0	0	0	0	0	0	0	0	0	0
	595	SY	13	10	20,230	7,890	12,340	790	1,230	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>SECTION 4</b>																						
<b>BONNIE BRIAR &amp; ALPINE BAY LOOPS</b>																						
	6,057	SY	4	1	11,200	4,370	6,830	4,370	6,830	0	0	0	0	0	0	0	0	0	0	0	0	0
	6,057	SY	13	8	75,710	29,520	46,190	3,700	5,770	0	0	0	0	0	0	0	0	0	0	0	0	0
	909	SY	13	8	30,880	12,040	18,850	1,510	2,360	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>BIRNHAM WOODS/CROOKED OAKS/HORSESHOE BAY COURTS</b>																						
	7,105	SY	4	3	13,140	5,120	8,020	1,710	2,670	0	0	0	0	0	0	0	0	0	0	0	0	0
	7,105	SY	13	12	86,810	34,630	54,180	2,890	4,520	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,066	SY	13	12	36,240	14,130	22,110	1,180	1,840	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>SECTION 5</b>																						
<b>AMSTERDAM COURT</b>																						
	2,760	SY	4	3	5,110	1,990	3,120	670	1,040	0	0	0	0	0	0	0	0	0	0	0	0	0
	2,760	SY	13	8	34,500	13,450	21,050	1,680	2,630	0	0	0	0	0	0	0	0	0	0	0	0	0
	414	SY	13	8	14,080	5,490	8,590	690	1,070	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PIPE STEMS</b>																						
	929	SY	4	1	1,720	670	1,050	670	1,050	1,720	0	0	0	0	0	0	0	0	0	0	0	0
	486	SY	13	5	6,070	2,370	3,700	470	740	0	0	0	0	0	0	0	0	0	0	0	0	0
	443	SY	13	5	5,540	2,160	3,380	430	680	0	0	0	0	0	0	0	0	0	0	0	0	0
	139	SY	13	5	4,740	1,850	2,890	370	580	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>SECTION 6</b>																						
<b>WINDY HOLLOW CIRCLE/WILLINGBORO/CANCUAN/ARCADIAN SHORE COURTS</b>																						
	7,091	SY	4	3	13,120	5,120	8,000	1,710	2,670	0	0	0	0	0	0	0	0	0	0	0	0	0
	7,091	SY	13	6	88,630	34,560	54,070	5,770	9,010	0	0	0	0	0	0	0	0	0	0	0	0	0
	1,064	SY	13	6	36,180	14,100	22,080	2,350	3,680	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>PIPE STEMS</b>																						
	724	SY	4	1	1,340	520	820	520	820	1,340	0	0	0	0	0	0	0	0	0	0	0	0
	296	SY	13	4	3,700	1,440	2,260	360	570	0	0	0	0	0	0	0	0	0	0	0	0	0
	306	SY	13	4	3,820	1,490	2,330	370	580	0	0	0	0	0	0	0	0	0	0	0	0	0
	122	SY	13	4	1,530	600	930	150	230	0	0	0	0	0	0	0	0	0	0	0	0	0
	109	SY	13	4	3,690	1,440	2,250	360	560	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>WEST PENINSULA</b>																						
<b>SECTION 1</b>																						







FISCAL YEARS 11 - 30 EXPENSE PROJECTION

ITEM	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	
RESIDENTIAL ROADS																						
EAST PENINSULA																						
SECTION 1																						
KAMERAMENA PLACE																						
PREVENTIVE MAINTENANCE	4	3	\$4,700																			
PAVEMENT OVERLAY	13	5	31,780																			
BASE COURSE/CONCRETE RPRS @ 15%	13	5	12,970																			
MAIL BOXES-WALL	20	8	3,800																			
SECTION 1 - ESTATE LOTS																						
VALDERAMA COURT																						
PREVENTIVE MAINTENANCE	4	1	7,340																			
PAVEMENT OVERLAY	13	10	49,580																			
BASE COURSE/CONCRETE RPRS @ 15%	13	10	20,230																			
SECTION 4																						
BONNIE BRIAR & ALPINE BAY LOOPS																						
PREVENTIVE MAINTENANCE	4	1	11,200																			
PAVEMENT OVERLAY	13	8	75,710																			
BASE COURSE/CONCRETE RPRS @ 15%	13	8	30,890																			
BIRNHAM WOODS/CROOKED OAKS/HORSESHOE BAY COURTS																						
PREVENTIVE MAINTENANCE	4	3	13,140																			
PAVEMENT OVERLAY	13	12	88,810																			
BASE COURSE/CONCRETE RPRS @ 15%	13	12	36,240																			
SECTION 5																						
AMSTERDAM COURT																						
PREVENTIVE MAINTENANCE	4	3	5,110																			
PAVEMENT OVERLAY	13	8	34,500																			
BASE COURSE/CONCRETE RPRS @ 15%	13	8	14,080																			
SECTION 6																						
WINDY HOLLOW CIRCLE/WILLINGBORO/CANUNCUN/ARCADIAN SHORE COURTS																						
PREVENTIVE MAINTENANCE	4	3	13,120																			
PAVEMENT OVERLAY	13	6	88,630																			
BASE COURSE/CONCRETE RPRS @ 15%	13	6	36,160																			
WEST PENINSULA																						
SECTION 1																						
TURTLE POINT DRIVE/SPYGLASS HILL LOOPS/NEAD LOOP/TURTLE POINT EYEBROW/HANCOCK COURT/SAPPHIRE LAKE WAY																						
PREVENTIVE MAINTENANCE	4	1	36,490																			
PAVEMENT OVERLAY	13	7	246,530																			
BASE COURSE/CONCRETE RPRS @ 15%	13	7	100,590																			
SECTION 2																						
SPYGLASS HILL LOOP/PROXBOROUGH LOOP/ITRON WAY/RANSOM OAKS COURT																						
PREVENTIVE MAINTENANCE	4	1	33,950																			
PAVEMENT OVERLAY	13	5	229,370																			
BASE COURSE/CONCRETE RPRS @ 15%	13	5	93,590																			
SECTION 2 - ESTATE LOTS																						
SPYGLASS HILL LOOP																						
PREVENTIVE MAINTENANCE	4	1	14,280																			
PAVEMENT OVERLAY	13	7	96,460																			
BASE COURSE/CONCRETE RPRS @ 15%	13	7	39,360																			
SECTION 3																						
SPYGLASS HILL LOOP/LINK HILL LOOP/PIEDIGRUE COURT/TUXEDO LANE																						
PREVENTIVE MAINTENANCE	4	1	28,030																			
PAVEMENT OVERLAY	13	9	189,400																			

FISCAL YEARS 11 - 30 EXPENSE PROJECTION

ITEM	USEFUL LIFE ESTIMATED		AVG REM COST IN		FISCAL YEARS 11 - 30 EXPENSE PROJECTION																						
	(YRS)	(3)	(4)	(5)	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044		
BASE COURSE/CONCRETE RPRS @ 15%		13	9	77,270	0	0	0	0	0	0	0	0	0	0	0	128,990	0	0	0	0	0	0	0	0	0	0	
TOTAL RESIDENTIAL ROADS				1,763,300																							
TENNIS/BASKETBALL COURT(S)		5	5	30,960	0	0	0	43,570	0	0	0	0	0	49,220	0	0	0	0	0	55,510	0	0	0	0	0	0	62,820
RESURFACE-TENNIS		5	5	15,480	0	0	0	21,780	0	0	0	0	0	24,510	0	0	0	0	0	27,800	0	0	0	0	0	0	31,410
RESURFACE-BASKETBALL		30	14	64,800	0	0	88,980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIGHTS/POSTS (24 FIXTURES)		30	14	52,250	0	0	71,750	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10' CHAIN LINK FENCE		30	14	7,800	0	0	10,710	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3' CHAIN LINK FENCE		25	25	10,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18,860	0	0	0	0	0	0	0
BASKETBALL STANDARDS																											
MULTI-PURPOSE COURT		5	2	5,500	0	7,190	0	0	0	8,130	0	0	0	0	0	9,180	0	0	0	0	0	0	0	0	0	0	0
RESURFACE-MULTI-PURPOSE CT (SMALL)		30	14	5,200	0	0	7,140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
LIGHTS/POSTS																											
TOTAL TENNIS/MULTI-PURPOSE COURTS				192,490																							
TOT-LOT(S)		25	19	30,000	0	0	0	0	0	0	0	0	0	46,540	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL TOT-LOT(S)				30,000																							
SWIMMING POOL COMPLEX/OFFICE																											
PAVEMENT		4	1	5,340	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PREVENTIVE MAINTENANCE		13	4	36,100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PAVEMENT OVERLAY		13	4	14,730	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BASE COURSE/CONCRETE RPRS @ 15%		30	14	18,200	0	0	24,980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SITE LIGHTING																											
BATHHOUSE/OFFICE		20	4	19,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROOFING-SHINGLES		30	14	3,470	0	0	4,770	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GUTTERS/DOWNSPOUTS		15	1	3,900	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A/C & HEATING		15	11	3,900	0	0	0	5,620	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
A/C & HEATING		10	6	1,650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CARPET		20	16	1,160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VINYL FLOOR TILE		13	1	5,500	0	0	7,550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WATER HEATER		25	7	36,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
RENOVATE SHOWER ROOMS		5	3	12,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PAINTING EXTERIOR		5	5	7,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PAINTING INTERIOR																											
POOL(S)		6	4	32,550	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
WHITECOAT		12	10	58,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
COPING/TILES/WALLS&FLOORS		15	3	14,500	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FILTER/PUMPS/WATER LINES		30	14	46,020	0	0	63,200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6' METAL FENCE		30	14	3,710	0	0	5,090	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3.5" METAL FENCE		10	2	22,680	0	29,650	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
POOL COVERS		15	14	11,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
GATE/ELECTRONIC CONTROL																											
SITE LIGHTING		30	14	13,000	0	0	17,850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
POLE LIGHTS		20	4	8,800	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
SIDEWALK LIGHTS-BOLLARDS																											
ARBOR		20	13	19,800	0	0	26,540	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL SWIMMING POOL COMPLEX				399,610																							
ENTRANCE CONTROL																											
STONEWALL GATE HOUSE		20	9	2,300	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ROOFING-SHINGLES		99	1	20,000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ENHANCE BUILDING EXTERIOR/INTERIOR		4	5	3,200	0	0	4,290	0	0	0	4,730	0	0	0	5,210	0	0	0	0	0	0	0	0	0	0	0	0
PAINTING INTERIOR/EXTERIOR																											



FUNDING PLANS - 30 YEAR PROJECTION

# Units = 551

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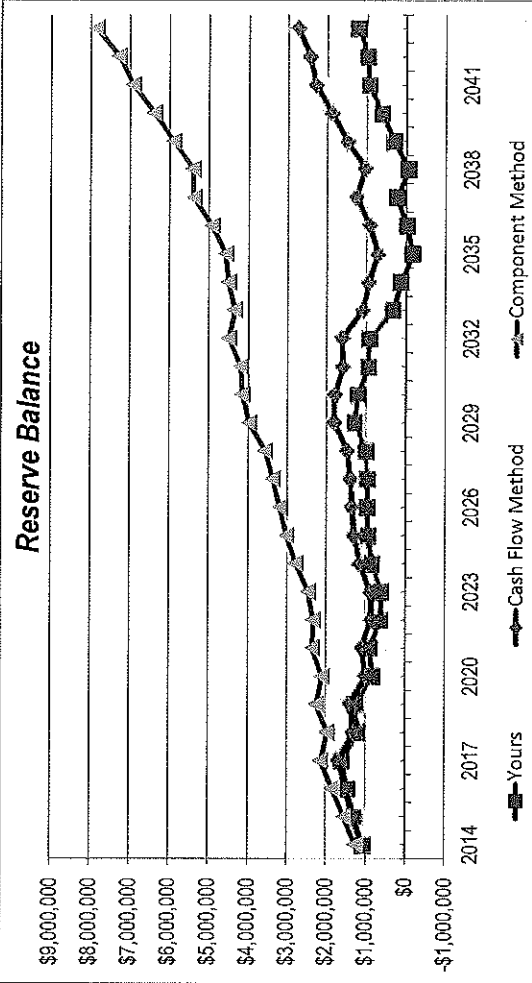
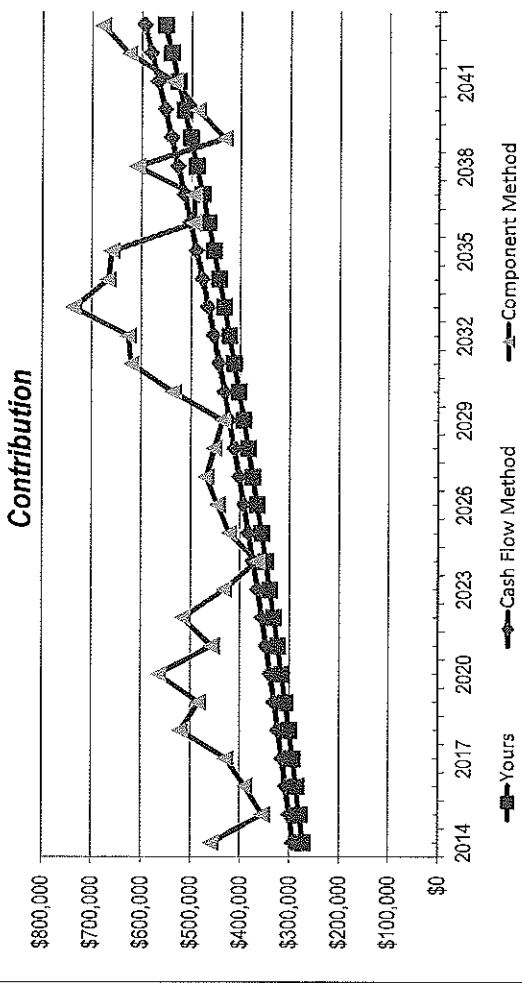
FY	Expenses		Yours		Cash Flow Method		Component Method	
	Annual* (11)	Cumulative (12)	Contrib'n (13)	Balance (14)	Contrib'n (15)	Balance (16)	Contrib'n (17)	Balance (18)
AOH				\$1,131,540		\$1,131,540		\$1,131,540
2014	374,560	374,560	272,510	1,071,020	293,860	1,092,370	459,160	1,257,670
2015	100,850	475,410	279,240	1,288,720	301,120	1,332,730	355,110	1,558,080
2016	164,600	640,010	286,140	1,457,650	308,560	1,525,600	390,380	1,841,050
2017	206,120	846,130	293,210	1,598,140	316,180	1,691,650	429,410	2,131,910
2018	781,670	1,607,800	300,450	1,195,570	323,990	1,316,050	520,990	1,989,470
2019	280,020	1,887,820	307,870	1,267,300	331,990	1,416,320	484,510	2,246,240
2020	792,100	2,679,920	315,470	837,180	340,190	1,016,390	565,150	2,101,730
2021	282,140	2,962,060	323,260	909,020	348,590	1,120,140	458,320	2,355,040
2022	634,930	3,596,990	331,240	638,690	357,200	883,520	516,990	2,323,530
2023	384,580	3,981,570	339,420	616,970	366,020	897,390	433,310	2,457,530
2024	136,360	4,117,930	347,800	851,050	375,060	1,169,020	365,510	2,776,870
2025	287,810	4,405,740	356,390	950,860	384,320	1,308,430	422,850	3,013,820
2026	382,190	4,787,930	365,190	968,760	393,810	1,366,070	446,920	3,189,160
2027	408,950	5,196,880	374,210	969,670	403,540	1,412,870	470,150	3,367,400
2028	378,460	5,575,340	383,450	1,010,140	413,510	1,499,770	453,910	3,566,430
2029	153,010	5,728,350	392,920	1,287,120	423,720	1,825,520	437,290	3,981,600
2030	516,780	6,245,130	402,630	1,220,210	434,190	1,809,930	535,530	4,146,470
2031	722,820	6,967,950	412,570	954,740	444,910	1,598,440	621,050	4,196,880
2032	484,510	7,452,460	422,760	928,030	455,900	1,628,490	626,930	4,483,330
2033	1,052,780	8,505,240	433,200	342,510	467,160	1,102,640	736,550	4,342,010
2034	665,520	9,170,760	443,900	133,460	478,700	956,290	667,280	4,503,120
2035	756,260	9,927,020	454,860	(163,040)	490,520	725,650	660,740	4,572,860
2036	315,990	10,243,010	466,100	(18,910)	502,640	938,930	496,070	4,920,760
2037	215,140	10,458,150	477,510	242,870	515,060	1,273,310	495,160	5,381,370
2038	794,500	11,252,650	489,410	(53,310)	527,780	1,063,320	610,720	5,395,090
2039	133,250	11,385,900	501,500	312,980	540,820	1,499,550	434,470	5,894,310
2040	214,840	11,600,740	513,890	623,520	554,180	1,893,920	487,930	6,383,720
2041	229,190	11,829,930	526,580	943,790	567,870	2,302,110	535,700	6,924,510
2042	528,020	12,357,950	539,590	990,000	581,900	2,440,480	626,570	7,277,190
2043	373,060	12,731,010	552,920	1,206,190	596,270	2,763,260	679,000	7,850,200

SUMMARY

30-Year Annual Average =	\$396,880	\$427,990	\$514,120
30-Year Average/Owner =	\$720	\$777	\$933
30-Year Minimum Balance =	(\$163,040)	\$725,650	\$1,558,090
30-Year Maximum Balance =	\$1,598,140	\$2,763,260	\$7,850,200

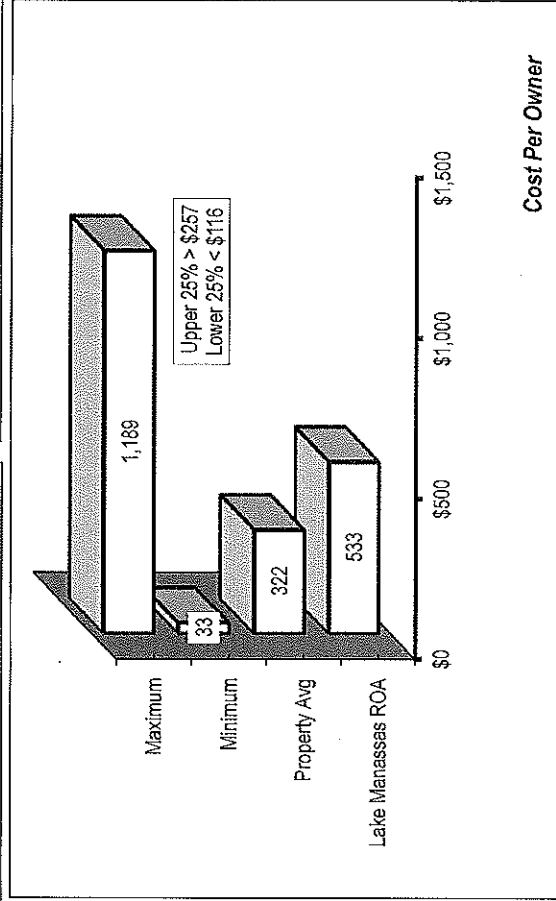
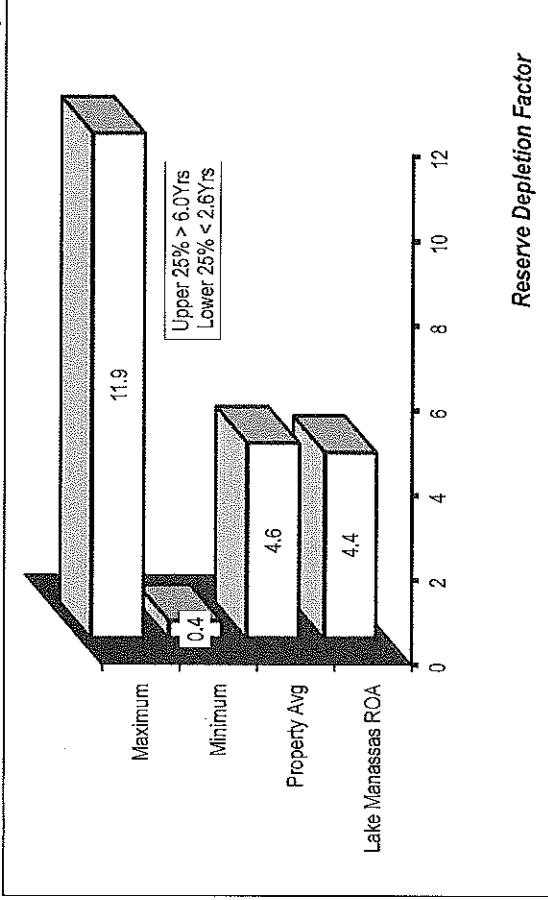
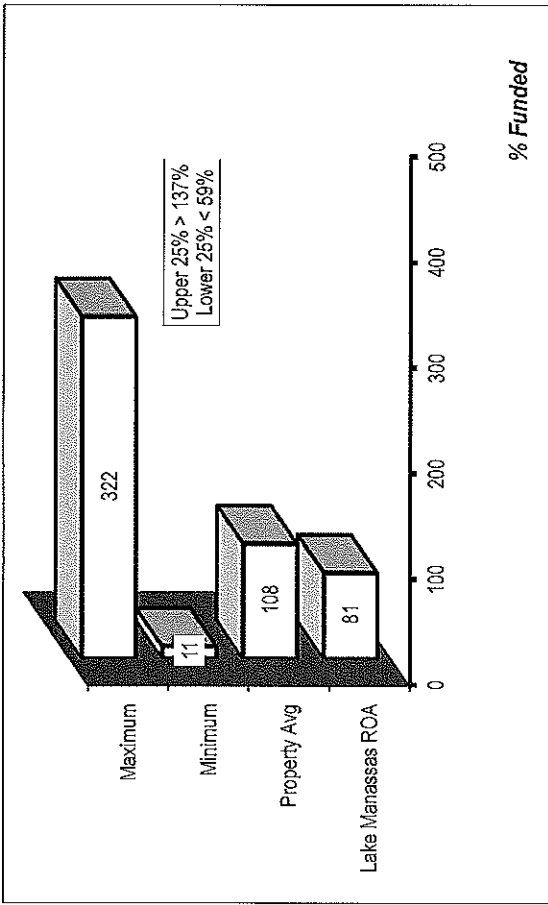
Notes:

\* An annual average cost. Some expenditures may be needed in earlier years, some in later years, depending on when the actual work is done. Data is a projection based on this point in time. The projection will change as useful life, current costs and amount-on-hand vary. Data should be considered a more accurate projection for years 1 - 5 than the out-years. Minimum balance does not include the first year.



**PROPERTY COMPARISON**  
Sample Size = 100 HOA's/POA's

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**Legend:**

This comparison only compares the first study year to other properties.

% Funded -- Used-up life divided by Useful Life times Current Cost.

Reserve Depletion Factor -- Number of years the amount-on-hand will fund if no more is contributed to the reserves.

Cost Per Owner - The average cost per owner to meet the reserve requirement compared to other properties.