



**RESERVE STUDY UPDATE
FOR
FORTY EIGHT EAST HOMEOWNERS ASSOCIATION**



**Management By:
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16625 S Desert Foothills Pkwy
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Prepared By:
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February 13, 2024



EXECUTIVE SUMMARY

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION

February 13, 2024

Starting Reserve Balance 1/1/2024	\$116,650
Projected Fully Funded Reserve Balance 1/1/2024	\$38,575
Percent Fully Funded 1/1/2024	166%
Annual Reserve Contribution 2024	\$627

This study is an update to a previous study performed by Association Reserves dated October 18, 2016. This update was performed with a field visit.

This study is based on the cash flow method of funding. This reserve analysis is based on an observation and assessment of the condition of the reserve fund based on a field assessment of the condition of the assets of the association, a projection of the useful life and remaining useful life of those assets, and the replacement costs for those assets. The financial information was provided by the association on the reserve fund balance and contribution to the fund. The general guideline used in our studies to determine whether the cost to replace or maintain an asset is paid from reserves or operations is if the replacement cost exceeds \$500 it is included in reserves. That can be modified at the direction of the Board.

Following are some key points relative to your study:

1. The study has a fiscal year beginning date of January 1, 2024.
2. The study reflects a beginning balance for the reserve fund of \$116,650 and an annual contribution of \$627. The financial information was provided by the association and was not audited. As reflected by the Current Assessment Funding Model Projection in the report, on pages 1-1 and 1-2, the reserve fund is in good condition based on the current funding until 2034. Reserve funds are generally considered to be in a healthy condition if the reserve balance is at or above 70% of the fully funded balance.
3. An Alternate Funding Model was prepared and included in the report, on pages 1-3 and 1-4, for consideration by the Association. The model recommends funding levels in 2034 and beyond. The model suggests funding of \$5,000 in 2034, \$7,000 in 2035, \$9,000 in 2036, an annual increase of 8% in the annual contribution in 2037 through 2043 and 5% in 2050 and following years. Other funding alternatives can be prepared if desired by the Board. Note that the study includes a 3% inflation on costs based on current construction cost indexes so some increase in funding over time is recommended to stay even with cost increase from inflation.

4. This study should be compared with the operating budget to make sure there are no overlaps or gaps of items in this study and in the operating budget.
5. The physical assessment of components was based on field reviews conducted on January 31, 2024. The field review consisted of on-site observations of common areas and facilities. No sampling or destructive testing was performed. The on-site observation is not a comprehensive quality inspection. Quantification of assets was accomplished with a combination of on-site measurements, aerial photos and information provided by the association.
6. The consultant has no other involvement with the association that could be considered a conflict of interest. To our knowledge, there are no material issues that have not been disclosed that would cause a distortion of the association's reserve fund.

Report was prepared by:

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FORTY EIGHT EAST HOMEOWNERS ASSOCIATION

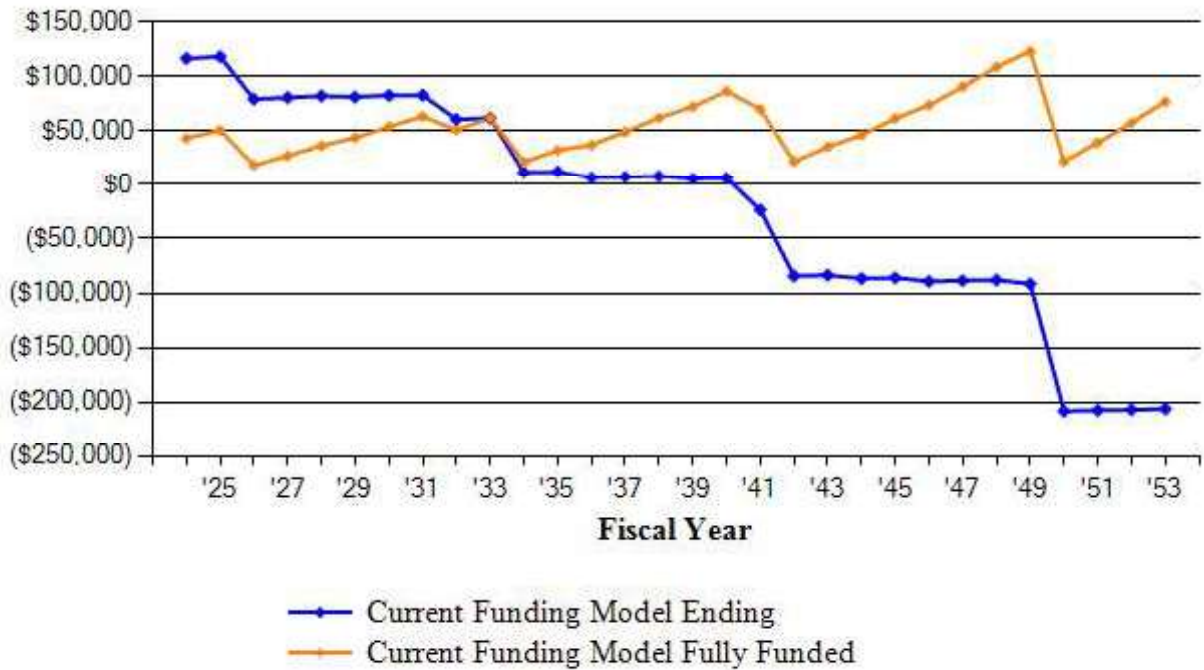
Current Assessment Funding Model Summary

Report Date	February 13, 2024
Budget Year Beginning	January 1, 2024
Budget Year Ending	December 31, 2024
Total Units	74

Report Parameters

Inflation	3.00%
Annual Assessment Increase	0.00%
Interest Rate on Reserve Deposit	1.00%
2024 Beginning Balance	\$116,650

Current Funding Model VS Fully Funded



Current Assessment Funding Model Summary of Calculations

Required Monthly Contribution	\$52.25
<i>\$0.71 per unit monthly</i>	
Average Net Monthly Interest Earned	\$96.26
Total Monthly Allocation to Reserves	\$148.51
<i>\$2.01 per unit monthly</i>	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Current Assessment Funding Model Projection

Beginning Balance: \$116,650

Year	Current Cost	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2024	62,085	627	1,155	2,000	116,432	43,450	268%
2025	63,948	627	1,173		118,232	50,704	233%
2026	65,866	627	786	40,314	79,331	18,616	426%
2027	67,842	627	800		80,759	27,326	296%
2028	69,877	627	815		82,200	36,542	225%
2029	71,974	627	806	2,319	81,315	43,898	185%
2030	74,133	627	820		82,762	54,123	153%
2031	76,357	627	821	1,353	82,857	63,528	130%
2032	78,647	627	602	23,309	60,777	50,876	119%
2033	81,007	627	614		62,018	62,136	100%
2034	83,437	627	113	51,069	11,690	21,424	55%
2035	85,940	627	121		12,438	32,393	38%
2036	88,518	627	63	6,537	6,590	37,268	18%
2037	91,174	627	70		7,287	49,341	15%
2038	93,909	627	77		7,991	62,105	13%
2039	96,726	627	52	3,116	5,554	72,381	8%
2040	99,628	627	59		6,240	86,523	7%
2041	102,617	627		30,412	-23,545	70,124	
2042	105,696	627		61,288	-84,206	21,802	
2043	108,866	627			-83,579	35,537	
2044	112,132	627		3,612	-86,564	46,356	
2045	115,496	627			-85,937	61,624	
2046	118,961	627		3,832	-89,142	73,820	
2047	122,530	627			-88,515	90,757	
2048	126,206	627			-87,888	108,644	
2049	129,992	627		4,188	-91,449	123,210	
2050	133,892	627		117,319	-208,140	22,156	
2051	137,909	627			-207,513	39,391	
2052	142,046	627			-206,886	57,640	
2053	146,307	627			-206,259	76,949	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION

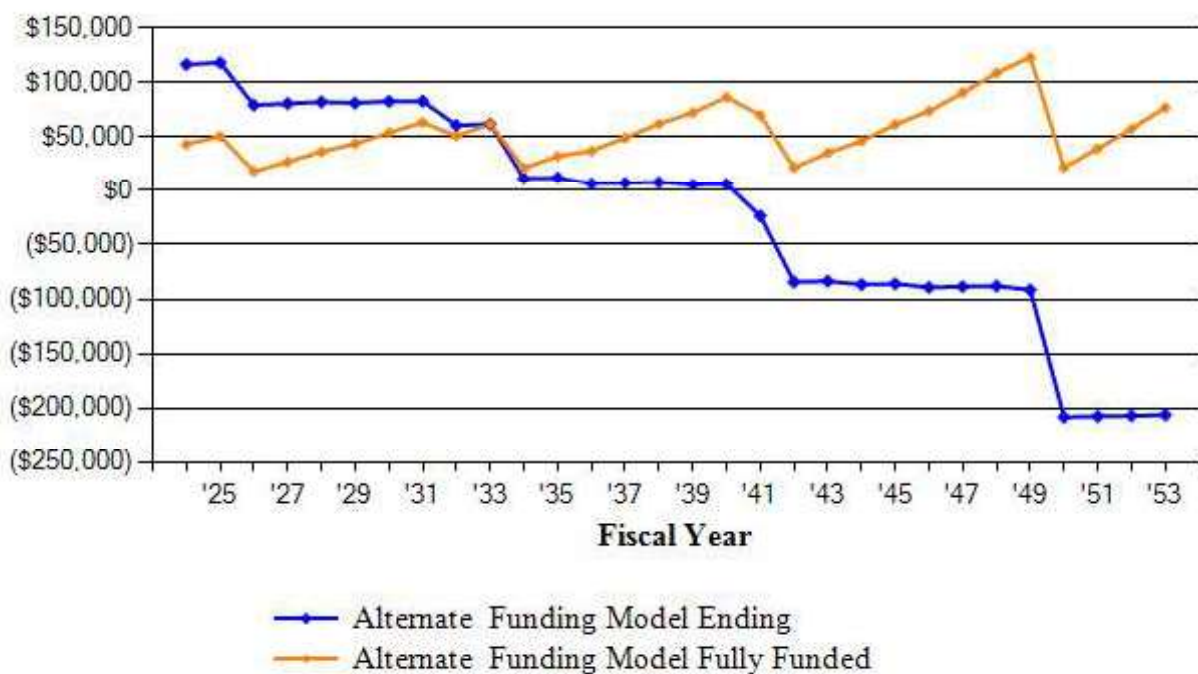
Alternate Funding Model Summary

Report Parameters

Report Date	February 13, 2024
Budget Year Beginning	January 1, 2024
Budget Year Ending	December 31, 2024
Total Units	74

Inflation	3.00%
Interest Rate on Reserve Deposit	1.00%
2024 Beginning Balance	\$116,650

Alternate Funding Model Ending VS Fully Funded



Alternate Funding Model Summary of Calculations

Required Monthly Contribution	\$52.25
<i>\$0.71 per unit monthly</i>	
Average Net Monthly Interest Earned	\$96.26
Total Monthly Allocation to Reserves	\$148.51
<i>\$2.01 per unit monthly</i>	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Alternate Funding Model Projection

Beginning Balance: \$116,650

Year	Current Cost	Annual Contribution	Annual Interest	Annual Expenditures	Projected Ending Reserves	Fully Funded Reserves	Percent Funded
2024	62,085	627	1,155	2,000	116,432	43,450	268%
2025	63,948	627	1,173		118,232	50,704	233%
2026	65,866	627	786	40,314	79,331	18,616	426%
2027	67,842	627	800		80,759	27,326	296%
2028	69,877	627	815		82,200	36,542	225%
2029	71,974	627	806	2,319	81,315	43,898	185%
2030	74,133	627	820		82,762	54,123	153%
2031	76,357	627	821	1,353	82,857	63,528	130%
2032	78,647	627	602	23,309	60,777	50,876	119%
2033	81,007	627	614		62,018	62,136	100%
2034	83,437	5,000	137	51,069	16,087	21,424	75%
2035	85,940	7,000	200		23,286	32,393	72%
2036	88,518	9,000	217	6,537	25,966	37,268	70%
2037	91,174	9,720	314		36,000	49,341	73%
2038	93,909	10,497	419		46,916	62,105	76%
2039	96,726	11,337	502	3,116	55,639	72,381	77%
2040	99,628	12,244	625		68,508	86,523	79%
2041	102,617	13,223	455	30,412	51,774	70,124	74%
2042	105,696	14,281		61,288	4,767	21,802	22%
2043	108,866	15,423	132		20,322	35,537	57%
2044	112,132	15,423	252	3,612	32,385	46,356	70%
2045	115,496	15,423	409		48,218	61,624	78%
2046	118,961	15,423	530	3,832	60,339	73,820	82%
2047	122,530	15,423	690		76,452	90,757	84%
2048	126,206	15,423	852		92,727	108,644	85%
2049	129,992	15,423	973	4,188	104,936	123,210	85%
2050	133,892	16,195		117,319	3,812	22,156	17%
2051	137,909	17,004	131		20,947	39,391	53%
2052	142,046	17,855	307		39,109	57,640	68%
2053	146,307	18,747	495		58,351	76,949	76%

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION

Asset Summary Report

Description	Date In Service	Replacement Date	Current Cost	Useful Life	Adjustment	Remaining	Future Cost	Quantity	Unit Cost
Painting									
Walls (Stucco) - Paint Asset ID: 1004	2023	2032	16,400	9	0	8	20,775	16400 @	1.00
Fencing/Security									
Metal Fence - Replace Asset ID: 1005	1996	2031	1,100	35	0	7	1,353	10 @	110.00
Walls (Stucco) - Repair/Replace Secti.. Asset ID: 1003	2023	2032	2,000	9	0	8	2,534	1 @	2,000.00
Equipment									
Backflow Preventer - Replace Asset ID: 1009	1009	Unfunded							
Drywells - Inspect & Clean Asset ID: 1013	2014	2024	2,000	5	0	0	2,000	4 @	500.00
Drywells - Partial Replacement Asset ID: 1014	1014	Unfunded							
Irrigation Controllers - Replace Asset ID: 1008	1008	Unfunded							
Irrigation System - Replace Asset ID: 1007	1007	Unfunded							
Grounds Components									
Concrete Components - Repair Asset ID: 1001	1996	2026	2,000	10	20	2	2,122	1 @	2,000.00
Granite - Replenish Asset ID: 1010	2014	2026	36,000	8	4	2	38,192	300 @	120.00
River Rock - Maintain Asset ID: 1011	2016	2036	85	20	0	12	121	1 @	85.00
Signs									
Monument - Refurbish Asset ID: 1006	1996	2036	2,500	40	0	12	3,564	1 @	2,500.00
Tree Trimming									
Tree & Plant - Trim/Replace Asset ID: 1012	1012	Unfunded							

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Walls (Stucco) - Paint

Asset ID	1004	16,400 SF	@ \$1.00
Category	Gounds	Asset Actual Cost	\$16,400.00
Placed in Service	Painting	Percent Replacement	100%
Useful Life	January 2023	Future Cost	\$20,775.03
Replacement Year	9		
Remaining Life	2032		
	8		



Good condition. Approximately 16,400 sq. ft. of painted stucco walls and metal fence.
2023 - AllStar Pro Painting applied (2) coats of paint for total of \$14,973.

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Metal Fence - Replace

		10 LF	@ \$110.00
Asset ID	1005	Asset Actual Cost	\$1,100.00
	Grounds	Percent Replacement	100%
Category	Fencing/Security	Future Cost	\$1,352.86
Placed in Service	January 1996		
Useful Life	35		
Replacement Year	2031		
Remaining Life	7		



Fair to good condition.

Walls (Stucco) - Repair/Replace Sections

		1 LS	@ \$2,000.00
Asset ID	1003	Asset Actual Cost	\$2,000.00
	Grounds	Percent Replacement	100%
Category	Fencing/Security	Future Cost	\$2,533.54
Placed in Service	January 2023		
Useful Life	9		
Replacement Year	2032		
Remaining Life	8		



Good condition. Budget for repairs "as needed" with each painting cycle. No allowance to

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Walls (Stucco) - Repair/Replace Sections continued...

completely restucco all walls.

2023 - AllStar Pro Painting scraped and repaired damaged stucco "as needed" 477 sq. ft. for a total of \$1,908.

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Backflow Preventer - Replace

Asset ID	1009	Asset Actual Cost	1 EA
Category	Gounds	Percent Replacement	100%
Placed in Service	Equipment	Future Cost	
No Useful Life	January 1996		



Unfunded. Assume operationally funded. 3/4" backflow preventer in cage located on Chandler Blvd.

Drywells - Inspect & Clean

Asset ID	1013	Asset Actual Cost	4 EA	@ \$500.00
Category	Gounds	Percent Replacement		100%
Placed in Service	Equipment	Future Cost		\$2,000.00
Useful Life	January 2014			
Replacement Year	5			
Remaining Life	2024			
	0			



Fair condition. Noted some river rocks covering grates.

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Drywells - Inspect & Clean continued...

2014 - inspected and cleaned total \$2,050.

Drywells - Partial Replacement

Asset ID	1014	4 EA	
Category	Gounds	Asset Actual Cost	
Placed in Service	Equipment	Percent Replacement	25%
Useful Life	January 1996	Future Cost	
Replacement Year	35		
Remaining Life	2031		
	7		



Drywells typically last indefinitely, if properly maintained

Irrigation Controllers - Replace

Asset ID	1008	1 EA	
Category	Gounds	Asset Actual Cost	
Placed in Service	Equipment	Percent Replacement	100%
No Useful Life	January 1996	Future Cost	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Irrigation Controllers - Replace continued...



Unfunded. Assume operationally funded. (1) wall mounted controller located on Chandler Blvd behind home. No access. Assume 12-station unit.

Irrigation System - Replace

Asset ID	1007	Asset Actual Cost	1 LS
Category	Gounds	Percent Replacement	100%
Placed in Service	Equipment	Future Cost	
No Useful Life	January 1996		

Unfunded. Outside scope of a reserve study. If community would like to add, please provide estimate of cost and anticipated year for replacing.

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Concrete Components - Repair

Asset ID	1001	1 LS	@ \$2,000.00
	Gounds	Asset Actual Cost	\$2,000.00
Category	Grounds Components	Percent Replacement	100%
Placed in Service	January 1996	Future Cost	\$2,121.80
Useful Life	10		
Adjustment	20		
Replacement Year	2026		
Remaining Life	2		



Good condition. Budget for repairs/replacement of sections "as needed" every 10 years. No allowance to completely replace all concrete components. (2) drainage swales bordering 47th Place & South Fork Drive.

Granite - Replenish

Asset ID	1010	300 Ton	@ \$120.00
	Gounds	Asset Actual Cost	\$36,000.00
Category	Grounds Components	Percent Replacement	100%
Placed in Service	January 2014	Future Cost	\$38,192.40
Useful Life	8		
Adjustment	4		
Replacement Year	2026		
Remaining Life	2		

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Granite - Replenish continued...



Good condition. Budget to replenish 1" top-dress.

2014 - total \$27,300.

River Rock - Maintain

Asset ID	1011	1 LS	@ \$85.00
Category	Gounds	Asset Actual Cost	\$85.00
Placed in Service	January 2016	Percent Replacement	100%
Useful Life	20	Future Cost	\$121.19
Replacement Year	2036		
Remaining Life	12		



Fair to good condition. River rock is grouted in some areas. Noted some loose rocks and some rocks have moved.

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Monument - Refurbish

		1 EA	@ \$2,500.00
Asset ID	1006	Asset Actual Cost	\$2,500.00
	Grounds	Percent Replacement	100%
Category	Signs	Future Cost	\$3,564.40
Placed in Service	January 1996		
Useful Life	40		
Replacement Year	2036		
Remaining Life	12		



Good condition. Located on Chandler Blvd and 47th Place. Painted aluminum letters "Forty Eight East".

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Detail Report

Tree & Plant - Trim/Replace

Asset ID	1012	Asset Actual Cost	
	Gounds	Percent Replacement	100%
Category	Tree Trimming	Future Cost	
Placed in Service	January 1996		
No Useful Life			



Unfunded. Assume operationally funded.

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION

Detail Index

Asset ID	Description	Replacement	Page
Painting			
1004	Walls (Stucco) - Paint	2032	1-6
Fencing/Security			
1005	Metal Fence - Replace	2031	1-7
1003	Walls (Stucco) - Repair/Replace Sections	2032	1-7
Equipment			
1009	Backflow Preventer - Replace	2024	1-9
1013	Drywells - Inspect & Clean	2024	1-9
1014	Drywells - Partial Replacement	2031	1-10
1008	Irrigation Controllers - Replace	2024	1-10
1007	Irrigation System - Replace	2024	1-11
Grounds Components			
1001	Concrete Components - Repair	2026	1-12
1010	Granite - Replenish	2026	1-12
1011	River Rock - Maintain	2036	1-13
Signs			
1006	Monument - Refurbish	2036	1-14
Tree Trimming			
1012	Tree & Plant - Trim/Replace	2024	1-15
	Total Funded Assets	8	
	Total Unfunded Assets	<u>5</u>	
	Total Assets	13	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Annual Expenditure Detail

Description	Expenditures
Replacement Year 2024	
Equipment	
1013 Drywells - Inspect & Clean	2,000
Total for 2024	\$2,000
<i>No Replacement in 2025</i>	
Replacement Year 2026	
Grounds Components	
1001 Concrete Components - Repair	2,122
1010 Granite - Replenish	38,192
Total for 2026	\$40,314
<i>No Replacement in 2027</i>	
<i>No Replacement in 2028</i>	
Replacement Year 2029	
Equipment	
1013 Drywells - Inspect & Clean	2,319
Total for 2029	\$2,319
<i>No Replacement in 2030</i>	
Replacement Year 2031	
Fencing/Security	
1005 Metal Fence - Replace	1,353
Total for 2031	\$1,353
Replacement Year 2032	
Painting	
1004 Walls (Stucco) - Paint	20,775
Fencing/Security	
1003 Walls (Stucco) - Repair/Replace Sections	2,534
Total for 2032	\$23,309

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Annual Expenditure Detail

Description	Expenditures
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No Replacement in 2033

Replacement Year 2034

Equipment

1013	Drywells - Inspect & Clean	2,688
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Grounds Components

1010	Granite - Replenish	48,381
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Total for 2034	\$51,069
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No Replacement in 2035

Replacement Year 2036

Grounds Components

1001	Concrete Components - Repair	2,852
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1011	River Rock - Maintain	121
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Signs

1006	Monument - Refurbish	3,564
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Total for 2036	\$6,537
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No Replacement in 2037

No Replacement in 2038

Replacement Year 2039

Equipment

1013	Drywells - Inspect & Clean	3,116
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Total for 2039	\$3,116
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No Replacement in 2040

Replacement Year 2041

Painting

1004	Walls (Stucco) - Paint	27,107
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Fencing/Security

1003	Walls (Stucco) - Repair/Replace Sections	3,306
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Total for 2041	\$30,412
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FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Annual Expenditure Detail

Description	Expenditures
Replacement Year 2042	
Grounds Components	
1010 Granite - Replenish	61,288
Total for 2042	\$61,288
<i>No Replacement in 2043</i>	
Replacement Year 2044	
Equipment	
1013 Drywells - Inspect & Clean	3,612
Total for 2044	\$3,612
<i>No Replacement in 2045</i>	
Replacement Year 2046	
Grounds Components	
1001 Concrete Components - Repair	3,832
Total for 2046	\$3,832
<i>No Replacement in 2047</i>	
<i>No Replacement in 2048</i>	
Replacement Year 2049	
Equipment	
1013 Drywells - Inspect & Clean	4,188
Total for 2049	\$4,188
Replacement Year 2050	
Painting	
1004 Walls (Stucco) - Paint	35,368
Fencing/Security	
1003 Walls (Stucco) - Repair/Replace Sections	4,313
Grounds Components	
1010 Granite - Replenish	77,637
Total for 2050	\$117,319

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Spread Sheet

ID	Description	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Painting											
1004	Walls (Stucco) - Paint									20,775	
Painting Total:										20,775	
Fencing/Security											
1005	Metal Fence - Replace								1,353		
1003	Walls (Stucco) - Repair/Replace Sections									2,534	
Fencing/Security Total:									1,353	2,534	
Equipment											
1009	Backflow Preventer - Replace	<i>Unfunded</i>									
1013	Drywells - Inspect & Clean	2,000					2,319				
1014	Drywells - Partial Replacement	<i>Unfunded</i>									
1008	Irrigation Controllers - Replace	<i>Unfunded</i>									
1007	Irrigation System - Replace	<i>Unfunded</i>									
Equipment Total:		2,000					2,319				
Grounds Components											
1001	Concrete Components - Repair										
1010	Granite - Replenish						2,122				
							38,192				
1011	River Rock - Maintain										
Grounds Components Total:							40,314				
Signs											
1006	Monument - Refurbish										
Signs Total:											
Tree Trimming											
1012	Tree & Plant - Trim/Replace	<i>Unfunded</i>									
Year Total:		2,000		40,314			2,319		1,353	23,309	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Spread Sheet

ID	Description	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043
Painting											
1004	Walls (Stucco) - Paint								27,107		
Painting Total:									27,107		
Fencing/Security											
1005	Metal Fence - Replace										
1003	Walls (Stucco) - Repair/Replace Sections								3,306		
Fencing/Security Total:									3,306		
Equipment											
1009	Backflow Preventer - Replace	<i>Unfunded</i>									
1013	Drywells - Inspect & Clean	2,688					3,116				
1014	Drywells - Partial Replacement	<i>Unfunded</i>									
1008	Irrigation Controllers - Replace	<i>Unfunded</i>									
1007	Irrigation System - Replace	<i>Unfunded</i>									
Equipment Total:		2,688					3,116				
Grounds Components											
1001	Concrete Components - Repair			2,852							
1010	Granite - Replenish	48,381								61,288	
1011	River Rock - Maintain			121							
Grounds Components Total:		48,381		2,973						61,288	
Signs											
1006	Monument - Refurbish			3,564							
Signs Total:				3,564							
Tree Trimming											
1012	Tree & Plant - Trim/Replace	<i>Unfunded</i>									
Year Total:		51,069		6,537			3,116		30,412	61,288	

FORTY EIGHT EAST HOMEOWNERS ASSOCIATION
Spread Sheet

ID	Description	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Painting											
1004	Walls (Stucco) - Paint							35,368			
Painting Total:								35,368			
Fencing/Security											
1005	Metal Fence - Replace										
1003	Walls (Stucco) - Repair/Replace Sections							4,313			
Fencing/Security Total:								4,313			
Equipment											
1009	Backflow Preventer - Replace	<i>Unfunded</i>									
1013	Drywells - Inspect & Clean	3,612					4,188				
1014	Drywells - Partial Replacement	<i>Unfunded</i>									
1008	Irrigation Controllers - Replace	<i>Unfunded</i>									
1007	Irrigation System - Replace	<i>Unfunded</i>									
Equipment Total:		3,612					4,188				
Grounds Components											
1001	Concrete Components - Repair			3,832							
1010	Granite - Replenish							77,637			
1011	River Rock - Maintain										
Grounds Components Total:				3,832				77,637			
Signs											
1006	Monument - Refurbish										
Signs Total:											
Tree Trimming											
1012	Tree & Plant - Trim/Replace	<i>Unfunded</i>									
Year Total:		3,612		3,832			4,188	117,319			

Important Information

The client shall have the right to reproduce and distribute copies of this report, or the information contained within, as may be required for compliance with all applicable regulations.

This reserve analysis study and the parameters under which it has been completed are based upon information provided to us in part by representatives of the association, its contractors and vendors and our own experience with local costs. We also may rely on various construction pricing and scheduling manuals including, but not limited to: Marshall & Swift Valuation Service, RS Means Facilities Maintenance & Repair Cost Data, RS Means Repair & Remodeling Cost Data, National Construction Estimator, National Repair & Remodel Estimator, Dodge Cost Manual and McGraw-Hill Professional, if needed.

It has been assumed, unless otherwise noted in this report, that all assets have been designed and constructed properly and that each estimated useful life will approximate that of the norm per industry standards and/or manufacturer's specifications. In some cases, estimates may have been used on assets, which have an indeterminable but potential liability to the association. The decision for the inclusion of these as well as all assets considered is left to the client.

This reserve analysis study is a reflection of information provided to or assembled by the consultant for the association's use, not for the purpose of performing an audit, quality/forensic analyses or background checks of historical records. Information provided by the official representative of the association regarding financial, physical, quantity, or historical issues is deemed reliable by the consultant.

We recommend that your reserve analysis study be updated on an annual basis due to fluctuating interest rates, inflationary changes, and the unpredictable nature of the lives of many of the assets under consideration. All of the information collected during our inspection of the association and computations made subsequently in preparing this reserve analysis study are retained in our computer files. Therefore, annual updates may be completed quickly and inexpensively each year.

FDReserve Studies would like to thank you for using our services. We invite you to call us at any time, should you have questions, comments or need assistance. In addition, any of the parameters and estimates used in this study may be changed at your request, after which we will provide a revised study.

This reserve analysis is prepared under the supervision of William A. Schlimgen PE, a registered professional engineer in Arizona with more than 10 years of experience in preparation of reserve studies and more than 40 years of engineering management, design, inspection and construction management experience.

Part I

Document

This reserve analysis study is provided as an aid for planning purposes and not as an accounting tool. Since it deals with events yet to take place, there is no assurance that the results enumerated within it will, in fact, occur as described.

Preparing the annual budget and overseeing the association's finances are perhaps the most important responsibilities of board members. The annual operating and reserve budgets reflect the planning and goals of the association and set the level and quality of service for all of the association's activities.

Funding Options

When a major repair or replacement is required in a community, an association has essentially four options available to address the expenditure:

The first, and only logical means that the Board of Directors has to ensure its ability to maintain the assets for which it is obligated, is by **assessing an adequate level of reserves** as part of the regular membership assessment, thereby distributing the cost of the replacements uniformly over the entire membership. The community is not only comprised of present members, but also future members. Any decision by the Board of Directors to adopt a calculation method or funding plan which would disproportionately burden future members in order to make up for past reserve deficits, would be a breach of its fiduciary responsibility to those future members. Unlike individuals determining their own course of action, the board is responsible to the "community" as a whole.

Whereas, if the association was setting aside reserves for this purpose, using the vehicle of the regularly assessed membership dues, it would have had the full term of the life of the roof, for example, to accumulate the necessary moneys. Additionally, those contributions would have been evenly distributed over the entire membership and would have earned interest as part of that contribution.

The second option is for the association to **acquire a loan** from a lending institution in order to effect the required repairs. In many cases, banks will lend to an association using "future homeowner assessments" as collateral for the loan. With this method, the current board is pledging the future assets of an association. They are also incurring the additional expense of interest fees along with the original principal amount. In the case of a \$150,000 roofing replacement, the association may be required to pay back the loan over a three to five year period, with interest.

The third option, too often used, is simply to **defer the required repair or replacement**. This option, which is not recommended, can create an environment of declining property values due to expanding lists of deferred maintenance items and the association's financial inability to keep pace with the normal aging process of the common area components. This, in turn, can have a seriously negative impact on sellers in the association by making it difficult, or even impossible, for potential buyers to obtain financing from lenders. Increasingly, lending institutions are requesting copies of the association's most recent reserve study before granting loans, either for the association itself, a prospective purchaser, or for an individual within such an association.

The fourth option is to pass a "**special assessment**" to the membership in an amount required to cover the expenditure. When a special assessment is passed, the association has the authority and responsibility to collect the assessments, even by means of foreclosure, if necessary. However, an association considering a special assessment cannot guarantee that an assessment, when needed, will be passed. Consequently, the association cannot guarantee its ability to perform the required repairs or replacements to those major components for which it is obligated when the need arises. Additionally,

while relatively new communities require very little in the way of major “reserve” expenditures, associations reaching 12 to 15 years of age and older, find many components reaching the end of their effective useful lives. These required expenditures, all accruing at the same time, could be devastating to an association’s overall budget.

Types of Reserve Studies

Most reserve studies fit into one of three categories:

Full Reserve Study;

Update with site inspection; and

Update without site inspection.

In a **Full Reserve Study**, the reserve provider conducts a component inventory, a condition assessment (based upon on-site visual observations), and life and valuation estimates to determine both a “fund status” and “funding plan”.

In an **Update with site inspection**, the reserve provider conducts a component inventory (verification only, not quantification unless new components have been added to the inventory), a condition assessment (based upon on-site visual observations), and life and valuation estimates to determine both the “fund status and “funding plan.”

In an **Update without site inspection**, the reserve provider conducts life and valuation estimates to determine the “fund status” and “funding plan.”

The Reserve Study: A Physical and a Financial Analysis

There are two components of a reserve study: a physical analysis and a financial analysis.

Physical Analysis

During the physical analysis, a reserve study provider evaluates information regarding the physical status and repair/replacement cost of the association’s major common area components. To do so, the provider conducts a component inventory, a condition assessment, and life and valuation estimates.

Developing a Component List

The budget process begins with full inventory of all the major components for which the association is responsible. The determination of whether an expense should be labeled as operational, reserve, or excluded altogether is sometimes subjective. Since this labeling may have a major impact on the financial plans of the association, subjective determinations should be minimized. We suggest the following considerations when labeling an expense.

Operational Expenses

Occur at least annually, no matter how large the expense, and can be budgeted for effectively each year. They are characterized as being reasonably predictable, both in terms of frequency and cost. Operational expenses include all minor expenses, which would not otherwise adversely affect an operational budget from one year to the next.

Reserve Expenses

These are major expenses that occur other than annually, and which must be budgeted for in advance in order to ensure the availability of the necessary funds in time for their use. Reserve expenses are reasonably predictable both in terms of frequency and cost. However, they may include significant assets that have an indeterminable but potential liability that may be demonstrated as a likely occurrence. They are expenses that, when incurred, would have a significant effect on the smooth operation of the budgetary process from one year to the next, if they were not reserved for in advance.

Budgeting is Normally Excluded

For expenses that are necessitated by acts of nature, accidents or other occurrences that are more properly insured for, rather than reserved for.

Financial Analysis

The financial analysis assesses the association's reserve balance or "fund status" (measured in cash or as percent fully funded) to determine a recommendation for the appropriate reserve contribution rate in the future, known as the "funding plan".

Preparing the Reserve Study

Once the reserve assets have been identified and quantified, their respective replacement costs, useful lives and remaining lives must be assigned so that a funding schedule can be constructed. Replacement costs and useful lives can be found in published manuals such as construction estimators, appraisal handbooks, and valuation guides. Remaining lives are calculated from the useful lives and ages of assets and adjusted according to conditions such as design, manufactured quality, usage, exposure to the elements and maintenance history.

By following the recommendations of an effective reserve study, the association should avoid any major shortfalls. However, to remain accurate, the report should be updated on an annual basis to reflect such changes as shifts in economic parameters, additions of phases or assets, or expenditures of reserve funds. The association can assist in simplifying the reserve analysis update process by keeping accurate records of these changes throughout the year.

Funding Methods

From the simplest to the most complex, reserve analysis providers use many different computational

processes to calculate reserve requirements. However, there are two basic processes identified as industry standards: the cash flow method and the component method.

The cash flow method develops a reserve-funding plan where contributions to the reserve fund are designed to offset the variable annual expenditures from the reserve fund. Different reserve funding plans are tested against the actual anticipated schedule of reserve expenses until the desired funding goal is achieved. This method sets up a “window” in which all future anticipated replacement costs are computed, based upon the individual lives of the components under consideration. The Threshold and the Current Assessment funding models are based upon the cash flow method.

The component method develops a reserve-funding plan where the total contribution is based upon the sum of contributions for individual components. The component method is the more conservative of the two funding options, and assures that the association will achieve and maintain an ideal level of reserve over time. This method also allows for computations on individual components in the analysis. The Component Funding model is based upon the component methodology.

Funding Strategies

Once an association has established its funding goals, the association can select an appropriate funding plan. There are four basic strategies from which most associations select. It is recommended that associations consult professionals to determine the best strategy or combination of plans that best suit the association's need. Additionally, associations should consult with their financial advisor to determine the tax implications of selecting a particular plan. Further, consultation with the American Institute of Certified Public Accountants (AICPA) for their reporting requirements is advisable. The four funding plans and descriptions of each are detailed below. Associations will have to update their reserve studies more or less frequently depending on the funding strategy they select.

Full Funding---Given that the basis of funding for reserves is to distribute the costs of the replacements over the lives of the components in question, it follows that the ideal level of reserves would be proportionately related to those lives and costs. If an association has a component with an expected estimated useful life of ten years, it would set aside approximately one-tenth of the replacement cost each year. At the end of three years, one would expect three-tenths of the replacement cost to have accumulated, and if so, that component would be "fully-funded." This model is important in that it is a measure of the adequacy of an association's reserves at any one point of time, and is independent of any particular method which may have been used for past funding or may be under consideration for future funding. This formula represents a snapshot in time and is based upon current replacement cost, independent of future inflationary or investment factors:

Fully Funded Reserves = Age divided by Useful Life the results multiplied by Current Replacement Cost

When an association's total accumulated reserves for all components meet this criterion, its reserves are considered "fully-funded."

The Threshold Funding Model (Minimum Funding). The goal of this funding method is to keep the reserve cash balance above zero. This means that while each individual component may not be fully funded, the reserve balance overall does not drop below zero during the projected period. An association using this funding method must understand that even a minor reduction in a component's remaining useful life can result in a deficit in the reserve cash balance.

The Threshold Funding Model. This method is based upon the cash flow funding concept. The minimum reserve cash balance in threshold funding, however, is set at a predetermined dollar amount (other than \$0).

The Current Assessment Funding Model. This method is also based upon the cash flow funding concept. The initial reserve assessment is set at the association's current fiscal year funding level and a 30-year projection is calculated to illustrate the adequacy of the current funding over time.

The Component Funding Model. This is a straight-line funding model. It distributes the cash reserves to individual reserve components and then calculates what the reserve assessment and interest contribution (minus taxes) should be, again by each reserve component. The current annual assessment is then determined by summing all the individual component assessments, hence the name "Component Funding Model". This is the most conservative funding model. It leads to or maintains the fully funded reserve position. The following details this calculation process.

Component Funding Model Distribution of Accumulated Reserves

The "Distribution of Accumulated Reserves Report" is a "Component Funding Model" calculation. This

distribution **does not** apply to the cash flow funding models.

When calculating reserves based upon the component methodology, a beginning reserve balance must be allocated for each of the individual components considered in the analysis, before the individual calculations can be completed. When this distribution is not available, or of sufficient detail, the following method is suggested for allocating reserves:

The first step the program performs in this process is subtracting, from the total accumulated reserves, any amounts for assets that have predetermined (fixed) reserve balances. The user can “fix” the accumulated reserve balance within the program on the individual asset’s detail page. If, by error, these amounts total more than the amount of funds available, then the remaining assets are adjusted accordingly. A provision for a contingency reserve is then deducted by the determined percentage used, and if there are sufficient remaining funds available.

The second step is to identify the ideal level of reserves for each asset. As indicated in the prior section, this is accomplished by evaluating the component’s age proportionate to its estimated useful life and current replacement cost. Again, the equation used is as follows:

Fully Funded Reserves = (Age/Useful Life) x Current Replacement Cost

The software program performs the above calculations to the actual month the component was placed-in-service. The program projects that the accumulation of necessary reserves for repairs or replacements will be available on the first day of the fiscal year in which they are scheduled to occur.

The next step the program performs is to arrange all of the assets used in the study in ascending order by remaining life, and alphabetically within each grouping of remaining life items. These assets are then assigned their respective ideal level of reserves until the amount of funds available is depleted, or until all assets are appropriately funded. If any assets are assigned a zero remaining life (scheduled for replacement in the current fiscal year), then the amount assigned equals the current replacement cost and funding begins for the next cycle of replacement. If there are insufficient funds available to accomplish this, then the software automatically adjusts the zero remaining life items to one year, and that asset assumes its new grouping position alphabetically in the final printed report.

If, at the completion of this task, there are additional moneys that have not been distributed, the remaining reserves are then assigned, in ascending order, to a level equal to, but not exceeding, the current replacement cost for each component. If there are sufficient moneys available to fund all assets at their current replacement cost levels, then any excess funds are designated as such and are not factored into any of the report computations. If, at the end of this assignment process there are designated excess funds, they can be used to offset the monthly contribution requirements recommended, or used in any other manner the client may desire.

Assigning the reserves in this manner defers the make-up period for any under-funding over the longest remaining life of all assets under consideration, thereby minimizing the impact of any deficiency. For example, if the report indicates an under funding of \$50,000, this under-funding will be assigned to components with the longest remaining lives in order to give more time to “replenish” the account. If the \$50,000 under-funding were to be assigned to short remaining life items, the impact would be felt immediately.

If the reserves are under-funded, the monthly contribution requirements, as outlined in this report, can be expected to be higher than normal. In future years, as individual assets are replaced, the funding requirements will return to their normal levels. In the case of a large deficiency, a special assessment may be considered. The program can easily generate revised reports outlining how the monthly contributions would be affected by such an adjustment, or by any other changes that may be under consideration.

Funding Reserves

Three assessment and contribution figures are provided in the report, the “Monthly Reserve Assessment Required”, the “Average Net Monthly Interest Earned” contribution and the “Total Monthly Allocation to Reserves.” The association should allocate the “Monthly Reserve Assessment Required” amount to reserves each month when the interest earned on the reserves is left in the reserve accounts as part of the contribution. Any interest earned on reserve deposits, must be left in reserves and only amounts set aside for taxes should be removed.

The second alternative is to allocate the “Total Monthly Allocation” to reserves (this is the member assessment plus the anticipated interest earned for the fiscal year). This method assumes that all interest earned will be assigned directly as operating income. This allocation takes into consideration the anticipated interest earned on accumulated reserves regardless of whether or not it is actually earned. When taxes are paid, the amount due will be taken directly from the association’s operating accounts as the reserve accounts are allocated only those moneys net of taxes.

Users’ Guide to your Reserve Analysis Study

Part II of your report contains the reserve analysis study for your association. There are seven types of reports in the study as described below.

Report Summaries

The Report Summary for all funding models lists all of the parameters that were used in calculating the report

The **Component Listing/Summary** lists all assets by category (i.e. roofing, painting, lighting, etc.) together with their remaining life, current cost, monthly reserve contribution, and net monthly allocation.

Detail Reports

The Detail Report itemizes each asset and lists all measurements, current and future costs, and calculations for that asset. Provisions for percentage replacements, salvage values, and one-time replacements can also be utilized. These reports can be sorted by category or group.

The numerical listings for each asset are enhanced by extensive narrative detailing factors such as design, manufactured quality, usage, exposure to elements and maintenance history.

The Detail Index is an alphabetical listing of all assets, together with the page number of the asset's detail report, the projected replacement year, and the asset number.

Projections

Thirty-year projections add to the usefulness of your reserve analysis study.

Definitions

Report I.D.

Includes the Report Date (example: November 15, 1992), Account Number (example: 9773), and Version (example: 1.0). Please use this information (displayed on the summary page) when referencing your report.

Budget Year Beginning/Ending

The budgetary year for which the report is prepared. For associations with fiscal years ending December 31st, the monthly contribution figures indicated are for the 12-month period beginning 1/1/20xx and ending 12/31/20xx.

Number of Units and/or Phases

If applicable, the number of units and/or phases included in this version of the report.

Inflation

This figure is used to approximate the future cost to repair or replace each component in the report. The current cost for each component is compounded on an annual basis by the number of remaining years to replacement, and the total is used in calculating the monthly reserve contribution that will be necessary to accumulate the required funds in time for replacement.

Annual Assessment Increase

This represents the percentage rate at which the association will increase its assessment to reserves at the end of each year. For example, in order to accumulate \$10,000 in 10 years, you could set aside \$1,000 per year. As an alternative, you could set aside \$795 the first year and increase that amount by 5% each year until the year of replacement. In either case you arrive at the same amount. The idea is that you start setting aside a lower amount and increase that number each year in accordance with the planned percentage. Ideally this figure should be equal to the rate of inflation. It can, however, be used to aide those associations that have not set aside appropriate reserves in the past, by making the initial year's allocation less formidable.

Investment Yield Before Taxes

The average interest rate anticipated by the association based upon its current investment practices.

Taxes on Interest Yield

The estimated percentage of interest income that will be set aside to pay income taxes on the interest earned.

Projected Reserve Balance

The anticipated reserve balance on the first day of the fiscal year for which this report has been prepared.

This is based upon information provided and not audited.

Percent Fully Funded

The ratio, at the beginning of the fiscal year, of the actual (or projected) reserve balance to the calculated fully funded balance, expressed as a percentage.

Phase Increment Detail and/or Age

Comments regarding aging of the components on the basis of construction date or date of acceptance by the association.

Monthly Assessment

The assessment to reserves required by the association each month.

Interest Contribution (After Taxes)

The interest that should be earned on the reserves, net of taxes, based upon their beginning reserve balance and monthly contributions for one year. This figure is averaged for budgeting purposes.

Total Monthly Allocation

The sum of the monthly assessment and interest contribution figures.

Group and Category

The report may be prepared and sorted either by group (location, building, phase, etc.) or by category (roofing, painting, etc.). The standard report printing format is by category.

Percentage of Replacement or Repairs

In some cases, an asset may not be replaced in its entirety or the cost may be shared with a second party. Examples are budgeting for a percentage of replacement of streets over a period of time, or sharing the expense to replace a common wall with a neighboring party.

Placed-In-Service Date

The month and year that the asset was placed-in-service. This may be the construction date, the first escrow closure date in a given phase, or the date of the last servicing or replacement.

Estimated Useful Life

The estimated useful life of an asset based upon industry standards, manufacturer specifications, visual inspection, location, usage, association standards and prior history. All of these factors are taken into consideration when tailoring the estimated useful life to the particular asset. For example, the carpeting in a hallway or elevator (a heavy traffic area) will not have the same life as the identical carpeting in a seldom-used meeting room or office.

Adjustment to Useful Life

Once the useful life is determined, it may be adjusted, up or down, by this separate figure for the current cycle of replacement. This will allow for a current period adjustment without affecting the estimated replacement cycles for future replacements.

Estimated Remaining Life

This calculation is completed internally based upon the report's fiscal year date and the date the asset was placed-in-service.

Replacement Year

The year that the asset is scheduled to be replaced. The appropriate funds will be available by the first day of the fiscal year for which replacement is anticipated.

Annual Fixed Reserves

An optional figure which, if used, will override the normal process of allocating reserves to each asset.

Fixed Assessment

An optional figure which, if used, will override all calculations and set the assessment at this amount. This assessment can be set for monthly, quarterly or annually as necessary.

Salvage Value

The salvage value of the asset at the time of replacement, if applicable.

One-Time Replacement

Notation if the asset is to be replaced on a one-time basis.

Current Replacement Cost

The estimated replacement cost effective at the beginning of the fiscal year for which the report is being prepared

Future Replacement Cost

The estimated cost to repair or replace the asset at the end of its estimated useful life based upon the current replacement cost and inflation.

Component Inventory

The task of selecting and qualifying reserve components. This task can be accomplished through on-site visual, review of association design and organizational documents, a review of established association precedents, and discussion with appropriate association representative(s).

A Multi-Purpose Tool

Your Report is an important part of your association's budgetary process. Following its recommendations should ensure the association's smooth budgetary transitions from one fiscal year to the next, and either decrease or eliminate the need for "special assessments".

In addition, your reserve study serves a variety of useful purposes:

- Following the recommendations of a reserve study performed by a professional consultant can protect the Board of Directors in a community from personal liability concerning reserve components and reserve funding.
- A reserve analysis study is required by your accountant during the preparation of the association's annual audit.
- The reserve study is often requested by lending institutions during the process of loan applications, both for the community and, in many cases, the individual owners.
- Your Report is also a detailed inventory of the association's major assets and serves as a management tool for scheduling, coordinating and planning future repairs and replacements.
- Your Report is a tool that can assist the Board in fulfilling its legal and fiduciary obligations for maintaining the community in a state of good repair. If a community is operating on a special assessment basis, it cannot guarantee that an assessment, when needed, will be passed. Therefore, it cannot guarantee its ability to perform the required repairs or replacements to those major components for which the association is obligated.
- Since the reserve analysis study includes measurements and cost estimates of the client's assets, the detail reports may be used to evaluate the accuracy and price of contractor bids when assets are due to be repaired or replaced.
- The reserve study is an annual disclosure to the membership concerning the financial condition of the association, and may be used as a "consumers' guide" by prospective purchasers.