

Reserve Study and Funding Analysis Report

Southview Improvement District (SID)

Southview's Water System

Florence, OR

Fiscal Year 2023 (May 1, 2023 – April 30, 2024)

Prepared: June 1, 2023

Prepared by J. Polder & C. Grano using RFA Software



This Page Intentionally Left Blank

Table of Contents

Table of Contents	i
Table of Figures	ii
Table of Tables	ii
Introduction	1
Association or HOA Responsibilities	1
Description of Reserve Study Report	1
Summary	1
The Preparer's Report	1
Current Financial Summary Position	2
Included Components – Definition	2
Excluded Components – Definition	3
Community Profile and Account Summary	3
Financial Assumptions, Recommendations and Disclosure Summary	5
Site Map	6
Reserve Study Parameters	7
Physical Analysis	8
Funding Summary	9
Goals of Funding Analysis	9
Current Reserve Fund Percent Funding	9
Current Income	10
Current Expenses	10
Future Income Sources	11
Reserve Components	12
Included Components	12
Component Useful Life Estimates	12
Component Remaining Useful Life Estimates	12
Determining the Cost of Replacement	13
Excluded Components	13
Reserve Fund Allocation	13
Component Inventory Included in Analysis	15
Components Not Included in Funding	18
Income and Expenses	19
Loans	21
Taxes	21
Maximum Reserve Fund Expenses and Reserve Contributions	22
Detailed Financial Analysis	23
Annual Projected Expenses	23
Special Project Expenditures	23
First Year of Analysis Reserve Components Services Complete	23
Annual Reserve Component Expenditures	23
Reserve Fund Expenditures	32
All Expenses	32
Reserve Balance	34
Annual Income and Contribution to Reserve Fund	35
Income Sources	36
Annual Reserve Balance and Reserve Expenses	37
Current Funding versus Recommend Funding Plans	38
Risk of Special Assessment or Deferred Maintenance	39
Contingency Fund	40
Income and Expense Summaries	41
Years 2023 to 2032	42
Years 2033 to 2042	46
Years 2043 to 2053	49
Component Details	52
Appendix	58
Analysis Class	58
Terms and Definitions	59
Funding Methodologies	63

Table of Figures

Figure 1: Current Percent Funding	9
Figure 2: 30 Year Reserve Fund Allocation	14
Figure 3: Reserve Fund Expenditures	32
Figure 4: All Annual Expenses	33
Figure 5: All Annual Expenses versus Available Funds	34
Figure 6: Start of Year Reserve Balance Percent Funding	34
Figure 7: Annual Income and Reserve Contribution	35
Figure 8: Average Monthly Reserve Fund Contribution Rate	36
Figure 9: Annual Income by Source	37
Figure 10: Annual Reserve Balance vs Reserve Expenses	37
Figure 11: Reserve Account Comparison	38
Figure 12: Percent Funded Comparison	39
Figure 13: Risk of Special Assessment or Deferred Maintenance	40

Table of Tables

Table 1: Community Profile and Account Summary	4
Table 2: Assumptions, Recommendations and Disclosure Summary	5
Table 3: Reserve Study Parameters	7
Table 4: Current Income Sources	10
Table 5: Current Expenses	10
Table 6: Future Income Sources	11
Table 7: Reserve Component Inventory	15
Table 8: Components Not Included in Funding	18
Table 9: Projected Income & Expenses Summary	20
Table 10: Loan Summary	21
Table 11: Maximum Reserve Expenses and Contributions	22
Table 12: Special Projects Table	23
Table 13: Reserve Component Already Completed in First Year of Analysis Table	23
Table 14: Summary Component Expenditures Table	24

Introduction

Association or HOA Responsibilities

Associations or HOAs have a responsibility to establish and maintain a Replacement Reserve Fund to provide the maintenance or replacement of association depreciable components. The objectives of a Reserve Study or Analysis includes the following:

- Provide a current estimate of the costs of repairing and replacing major common area components over the long term.
- All major repair and replacement costs will be covered by funds set aside by the association as reserves, so that funds are available when needed.
- An examination of the association's repair and replacement obligations is conducted.
- The costs and timing of replacement are determined.
- Distribute the contributions of old and new owners.
- Allows for the aesthetic qualities of the community to be maintained.
- Minimizes the need for special assessments.
- Shows owners and potential buyers a more accurate and complete picture of the association's financial strength and market value.
- Disclose to buyers, lenders, and others the manner in which management of the association is making provisions for non-annual maintenance requirements.
- Define explicit association decisions on how to provide for long-term funding.
- Provide or contribute to a maintenance planning tool for the association.

Description of Reserve Study Report

The purpose of a reserve study is to give those overseeing the maintenance of the property advanced notice of what major expenses to expect and an educated estimate of when these expenses will occur. With this knowledge, the homeowners' association board or manager can create a budget so association members will make their fair share of reserve contributions, designed to offset the slow but steady ongoing reserve component deterioration of the association assets, and avoid being surprised by components that deteriorated often in plain sight and over a number of years. In addition, the reserve study provides important annual disclosures to association members (and prospective buyers) about the condition of common area components, and the level of preparedness, or strength, of the reserve fund. A reserve study is a roadmap that allows decisions to be made which will be efficient and effective for the long term.

Summary

The Preparer's Report

This reserve study report is prepared using the *Reserve Funding Analyzer* software in accordance with generally accepted reserve study standards and software as recommended by the *International Capital Budgeting Institute*, the *Foundation for Community Association Research*, and the *Community Associations Institute*.

Current Financial Summary Position

Current Financial Summary Position

As of Date 01 May 2023

Current Replacement Cost of All Components	\$ 426,000
Future Replacement Cost of All Components	\$ 664,716
Reserve Fund Balance at Start of Year 2023	\$ 79,145
100% Funded Amount as of start of year 2023	\$ 249,276
Percent Funded as of start of year 2023	32%
Reserve Surplus / Deficit of FFB - Average per Unit start of year 2023	-\$5,317
Projected Total Reserve Contribution in year 2023	\$ 19,023
Annual Reserve Contribution per unit in year 2023	\$ 594
Projected Special Assessments	\$ 0
Projected Inflation Rate (Operating Expenses)	3.0%
Projected Inflation Rate (Reserve Expenses)	3.0%
Projected Interest Rate for Earnings of Reserve Fund	3.8%
Current Reserve Funding Strength:	Fair
Current Risk of Special Assessment:	Moderate

The long-term financial outlook for the SID is strong. The current financial situation is fair, as reserve funding is below the 70% threshold level for ten years. This is primarily due to the maintenance and replacement requirements for the reservoir, costs for which had not previously been included in reserve calculations. Recommended repair and replacement costs for the existing tank in the next ten years present a higher overall cost than installing two smaller tanks over a longer term. The current forecast includes a special assessment of \$1,563 per lot in 2028 and again in 2041, corresponding to installation of the two new tanks. The special assessments prevent significant increases to the annual assessments at this time. The current forecast includes a 10% increase (an additional \$50 per lot) in the annual assessment next year and a 5% increase for the following three years. Short-term contributions from special assessments are preferred to continually increasing assessments over time. This plan projects the reserves to reach 70% funding in 2034 and to be fully-funded at 100% by 2042. Reserves funded at 70% or above are generally considered to be strong (see discussion beginning on Page 8 of this report).

Included Components – Definition

Reserve expenses for components are major expenses which must be budgeted for in advance in order to provide the necessary funds in time for their occurrence. Reserve expenses are reasonably predictable both in terms of frequency and cost. They are expenses that when incurred would have a significant impact on the smooth operation of the budgetary process from one year to the next if they were not reserved for in advance.

A common concern when beginning a reserve study is what components are to be included and funded for in the Reserve Study. Nationally recognized reserve study standards indicate reserve components need to meet the following criteria:

- The component is part of the community's common elements.
 - The component is not already covered in a maintenance contract.
 - The component is not included in another part of the community's budget.
- The component's replacement or project costs is greater than the threshold amount imposed by the community.
- The component has a limited life expectancy.
- The component has a reasonably defined remaining useful life.

Refer to the *Reserve Components* section for an itemized listing of the included reserve components in this reserve study report.

Excluded Components – Definition

Some common area components may have been left out of the study or included in the component list but “Unfunded” and not considered in the mathematical models. These components will typically fall into one or more of the categories listed below.

- **Component Covered under Maintenance Contract** – The component's ongoing maintenance / replacement is performed as part of the services secured by a maintenance contract.
- **Component Costs Below Threshold** – Component repair and/or replacement costs that are deemed too small to be considered reserve expenses are typically included in the operational or maintenance budget have not been funded for in this study.
- **Useful Life is One Year or Less** – These occur at least annually and can be effectively budgeted for each year as part of the operational expenses. They are characterized as being reasonably predictable both in terms of frequency and cost.
- **Useful Life is Very Long, Unpredictable** – Components which, when properly maintained, have an exceedingly long useful life with no predictable replacement cycle.
- **Useful Life Cannot be Determined** – Components where the useful life cannot be determined.
- **Not Part of Common Elements** – Improvements made to the property that fall outside the responsibility of the association. Typically, these are components where the responsibility falls to individuals or organization other than the association such as individual unit owners or parties such as governmental agencies, utility companies, the US Postal Service, etc.

Community Profile and Account Summary

The following table is a summary of the community and the current financial status.

Table 1: Community Profile and Account Summary

Community Profile and Account Summary

As-Of Date this Analysis: 01 May 2023

Community:	Southview SID
Number of Units:	32
Start Year for Analysis:	2023
Reserve Fund Balance at SOY 2023:	\$ 79,145
Recommended 2023 Annual Reserve Contribution:	\$ 19,023
Reserve Fully Funded Balance (FFB) at SOY 2023:	\$ 249,276
Reserve Funding Percent of FFB at SOY 2023:	32%
Deficit or Surplus per unit of the FFB at SOY 2023: *	-\$ 5,317
Reserve Funding Strength at SOY 2023:	Fair
Risk of Special Assessment at SOY 2023:	Moderate
Outstanding Loan Balance:	\$ 0
Tax Liability Not Included in Analysis:	

Note: Any surplus or deficit noted in the above summary applies to the Fully Funded Balance and does not suggest that a refund should be applied (in the case of a surplus) or that an assessment is required (in the case of a deficit).

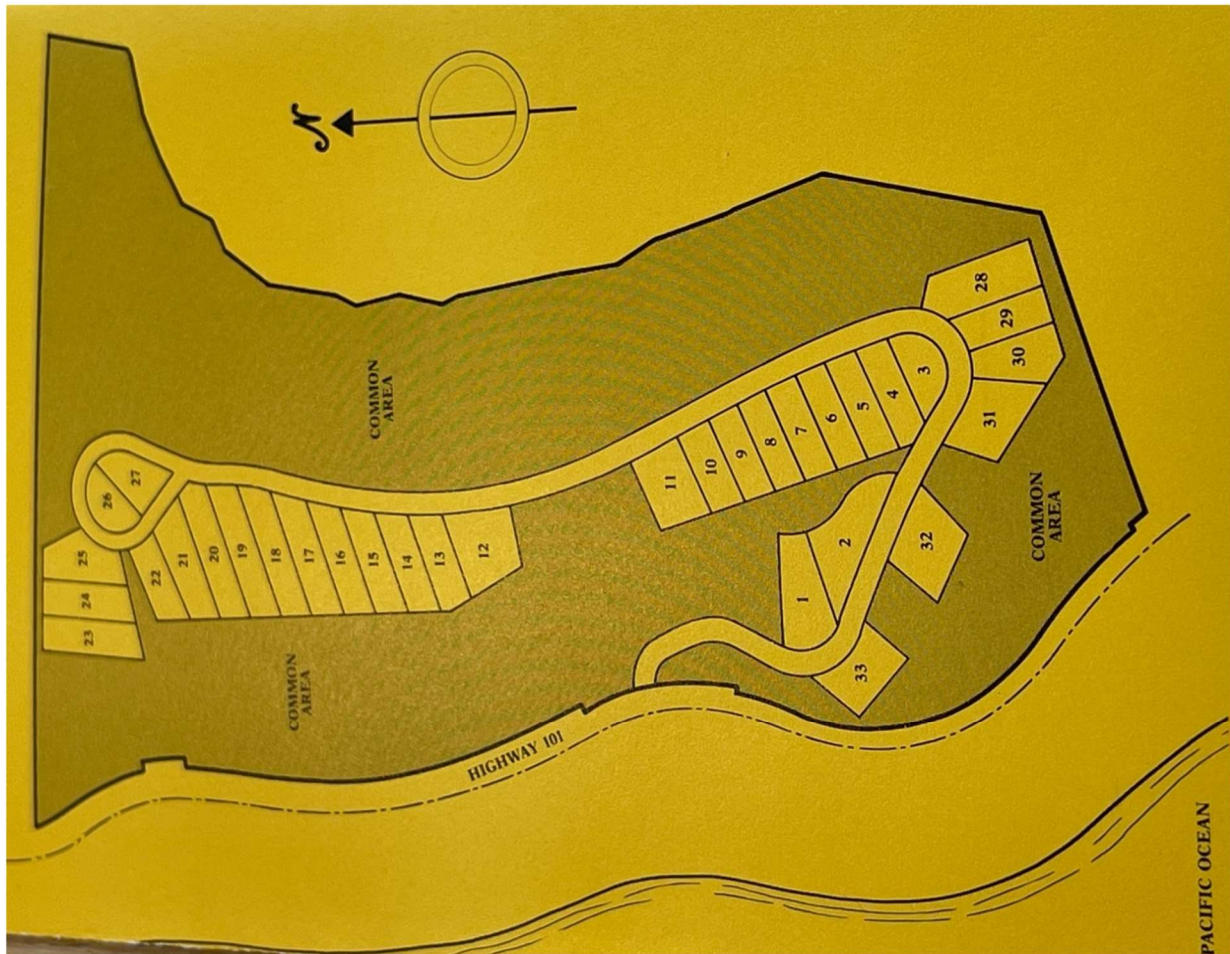
Financial Assumptions, Recommendations and Disclosure Summary

The certain assumptions must be adopted to develop the financial analysis for this study. These include assumptions about the community and specific economic assumptions. The association must carefully monitor these assumptions and update the financial analysis should any of them change. The following table summarizes the basic recommendations which were derived from the use of the stated assumptions and disclosures about financial calculations used in this analysis.

Table 2: Assumptions, Recommendations and Disclosure Summary

Summary – Assumptions, Recommendations & Disclosures			
Beginning Assumptions			
	Number of Units:	32	
	Start Year for Analysis:	2023	
	Estimated First Year (2023) Reserve Contribution:	\$ 19,023	
	Maintenance Assessment Income for 2022:	\$ 16,000	
	Year 2023 Special Assessment:	\$ 0	
Economic Assumptions			
	Long-term inflation rate for Reserve Exp (CAPEX):	3.00%	
	Long-term inflation for Operating Exp (OPEX):	3.00%	
	Short-term Inflation for OPEX (only in year of 2023):	3.00%	
	Interest rate on Reserve Balance:	3.82%	
Current Reserve Status			
	Reserve Fund Balance at Start of Year 2023:	\$ 79,145	
	Reserve Fully Funded Balance (FFB) at SOY 2023:	\$ 249,276	
	Reserve Funding Percent of FFB at SOY 2023:	32%	
	Estimated First Year (2023) Reserve Contribution:	\$ 19,023	
Recommendations for next 10 Years			
	Total Special Assessments 2023 to 2033:	\$ 0	
	Avg Ann Reserve Contribution 2023 to 2033:	\$ 29,042	
	Avg Annual % Assessment Increase 2023 to 2033:	2.50%	
Disclosures			
- General calculations use Cash Flow Funding methodology. - The Percent Funded and the Fully Funded Balance determined using the Inflation Adjusted methodology as defined by the International Capital Budgeting Institute. - The earned interest on the reserve fund is calculated separately and is included as part of the ongoing income, therefore, the interest rate on the reserve fund is not included in the calculation of the Fully Funded Balance. - Estimated future reserve component major repair and replacement costs are based on current or actual replacement costs projected to the estimated repair or replacement date, applying an inflation rate of 3.00% for the entire 30-year financial period. - Operating Expenses are not included in this analysis			

Site Map



Reserve Study Parameters

Table 3: Reserve Study Parameters

Reserve Study Parameters	
Level of Reserve Study: Class II: Update with Site Visit	
Report Period:	Fiscal Year 2023
Interest rate on Reserve Balance:	3.82%
Long-term inflation rate for Reserve Exp (CAPEX):	3.00%
Long-term inflation for Operating Exp (OPEX):	3.00%
Short-term Inflation for OPEX (only in year of 2023):	3.00%
Funding Strategy:	Threshold Funding
Funding Methodology:	Cash Flow
As of Date:	1 May 2023

Preparation

- Prior reserve studies, if available, were used as references for this analysis as a baseline for identification of reserve asset components.
- The Association Manager, members of the Association Board or other party conducted an inventory of the reserve assets:
 - If available, prior reserve studies reserve assets inventory
 - Conduct current inventory of reserve assets
 - Verified that no assets were overlooked or if assets should be excluded
 - Condition of assets and useful life was evaluated by the association manager, knowledgeable members of the association and/or outside service providers
 - Review historical records for component maintenance frequency and costs
 - Assess component useful life based on how long past component maintenance endured

Assumptions

- The physical inventory and condition assessment of all physical assets is complete.
- The component replacement cost estimates are reasonably accurate.
- Projected future financial requirements to fund the reserve components are accumulated based on actual costs or current estimated costs. Future expenditures are thereby estimated using the inflation assumptions stated herein.
- Estimates for current and future operational expenses are reasonably accurate. This includes annual expenses such as insurance, administration, and maintenance. Future operational expenses are projected to rise at the projected inflation rate.

Funding Goals

- Provide sufficient funds when required
- Achieve and sustain a targeted percent funding of the Fully Funded Balance of the reserve fund
- Enable a stable contribution rate over the years
- Evenly distribute contributions over the years
- Minimize the need for special assessments
- Be fiscally responsible

It is common misconception that an HOA or community should maintain 100% of the fully funded balance. As a performance indicator, percent funding is used as a measure of the health of the reserve fund and a percent funding range of 70% to 100% is commonly adopted as a target percentage as it has been statistically shown that communities that maintain their percent funding in this range are far less likely to experience emergency assessments or deferral of maintenance. They can easily weather unexpected expenses and economic downturns. The actual percent funding target is used as a performance indicator and can vary according to unique circumstances.

The common guidelines for percent funding are:

- **Overfunded: Greater than 100%**
 - Indication that steps should be taken to bring the fund back into balance
 - Continued over funded places an unfair burden on individual members to maintain a fund in excess of what is needed
 - Overfunding does not provide additional safeguards that could be obtained from a strong position
- **Strong: 70% – 100%:**
 - Risk of special assessments or deferred maintenance is low
 - Higher marketability
 - Unexpected expense and economic downturns are easily overcome
- **Fair: 30% – 70%:**
 - Due diligence indicated to assure adequate funding scheduled expenses
 - Unexpected expenses and economic downturns pose a moderate to high risk of special assessments or deferred maintenance
- **Weak: 0% – 30%:**
 - Risk of special assessments is high, especially in the case of unexpected expenses or an economic downturn
 - Deferred maintenance of reserve components is common
 - High stress and political turmoil are likely
 - Lower marketability

Physical Analysis

The reserve funding plan is most contingent upon an accurate physical analysis. To the extent practical, this reserve study consists of:

- Review of all components to assure proper identification and quantity
- Identify any new components
- Inspect all reserve components to assess their condition
- Examine historical records of component maintenance and evaluate if the Component Useful Life is accurately represented in the inventory listing
- In cases where reserve components were serviced in the last few years, evaluate if the past costs, once adjusted for inflation, represent an accurate estimate of the current service cost
- Consult with knowledgeable vendors and service providers to evaluate current condition, assure correct costs and useful lives are assessed

Funding Summary

Goals of Funding Analysis

The goals of a Funding Analysis are to:

- establish funding goals
- identify annual funding requirements
- disclose limitations and assumptions

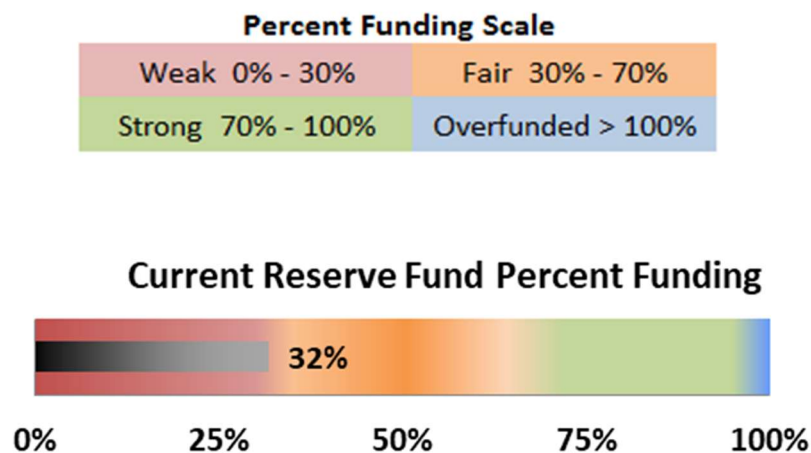
Once the components' estimated useful life, estimated remaining life, and estimated current replacement costs are identified, only then can the association develop a plan for funding the reserve account. This funding plan specifies future reserve cash needs and planned methods to offset the ongoing deterioration of the reserve components.

In preparing the funding plan, the association will have to make decisions about the amount of current assessments and the need for special assessments, balanced against projected liability. The law does not require the funding of projected replacement costs, only an explicit description of the plan for such funding, among other specific disclosures. The financial viability of the association will depend a great deal on the ability of the association to replace components as they wear out and not to defer major maintenance items.

A product of the Funding Analysis process is the development of a funding plan (cash flow forecast or projection) to estimate future reserve cash receipts and disbursements. This Reserve Study documents the funding plan with documented supporting assumptions and methodology.

Current Reserve Fund Percent Funding

Figure 1: SID Current Percent Funding



Current Income

The primary source of an association's income is from annual maintenance assessments. Other sources can also include sale of assets and rental of facilities. The following summarizes the sources of income used in this reserve study.

Table 4: Current Income Sources

Current Funding Summary for Year 2023		
Income Type		Amount
Association Assessments Income for 2022:		\$ 16,000
Association Assessments Income for 2023:		\$ 16,000
Interest on Reserve Fund:		3.82%
Loans:		\$ 0
Other Annual Income:		\$ 0
Current Special Assessments		
Year	Amount	

Current Expenses

Table 5: Current Expenses

Current Expenses	
Operating Expenses for Year 2022:	Not Included
Estimated Operating Expenses for Year 2023:	Not Included
2022 to 2023 OPEX inflation (Short-term):	3.00%
2024 to 2053 OPEX inflation (Long-term):	3.00%
Current Loan Payments:	\$ 0

- Annual maintenance assessments and annual maintenance assessment increases
- New loans
- Annual income from other sources such as facilities rentals
- Interest on reserve fund accounts
- Special assessments
- Other one-time incomes such as a sale of assets

[illegible]

Reserve Components

Reserve expenses for components are major expenses which must be budgeted for in advance in order to provide the necessary funds in time to cover the necessary maintenance or replacement as components deteriorate. Reserve expenses are reasonably predictable both in terms of frequency and cost. They are expenses that, if not reserved in advance, would likely have a significant impact on the budgetary process from one year to the next.

Included Components

A common concern is what components are to be included and funded for in the Reserve Study. Nationally recognized Reserve Study Standards indicates reserve components need to meet **ALL** the following criteria:

- The component is owned and maintained by the Association
- The component is NOT already covered in a maintenance contract
- The component has a limited life expectancy
- The component has a predictable and reasonably defined remaining useful life
- The component project cost is above a threshold amount imposed by the Association

Component Useful Life Estimates

“Useful life” is defined as the number of years the component is expected to serve its intended purpose if given regular and proper maintenance. Estimating the useful life of each of components includes the following factors:

- Material manufacturer’s warranty
- Commercially available published source with estimates of useful life such as the US Department of Housing and Urban Development and Fannie Mae.
- Evaluating the Association’s past maintenance records

Component Remaining Useful Life Estimates

The “Remaining Life” is defined as the expected number of years the component will continue to serve its intended purpose prior to repair or replacement. Estimating the remaining useful life of each of components includes the following factors:

- Subtracting the year that the component was installed from the useful life estimate
- Evaluating the apparent physical condition by someone familiar with the component such as a service vendor and adjusting the remaining useful life as necessary
- Evaluating past maintenance records to determine if the useful life is accurately represented

In determining the remaining life of a component, a certain level of continued preventive maintenance is assumed. Any assumptions pertaining to these maintenance assumptions are explicitly stated so that proper maintenance can be continued throughout the component’s remaining life.

The remaining life of a component implicitly specifies the year in which maintenance or replacement is required. The analysis timeline shows the year of replacement for each component. The timeline serves as a schedule for expected component replacements and can be updated or changed when the Physical Analysis is updated or as components last for shorter or longer periods than expected.

Determining the Cost of Replacement

Replacement costs are obtained in various manners. All costs also include the cost of removing the existing component, if appropriate. Factors for estimating replacement costs include:

- Cost estimating manuals and guidelines, if appropriate
- Evaluating historical maintenance records and, where appropriate, adjusting for inflation
- Obtaining current estimates from reliable sources such as contractors, suppliers, or subject matter experts

Excluded Components

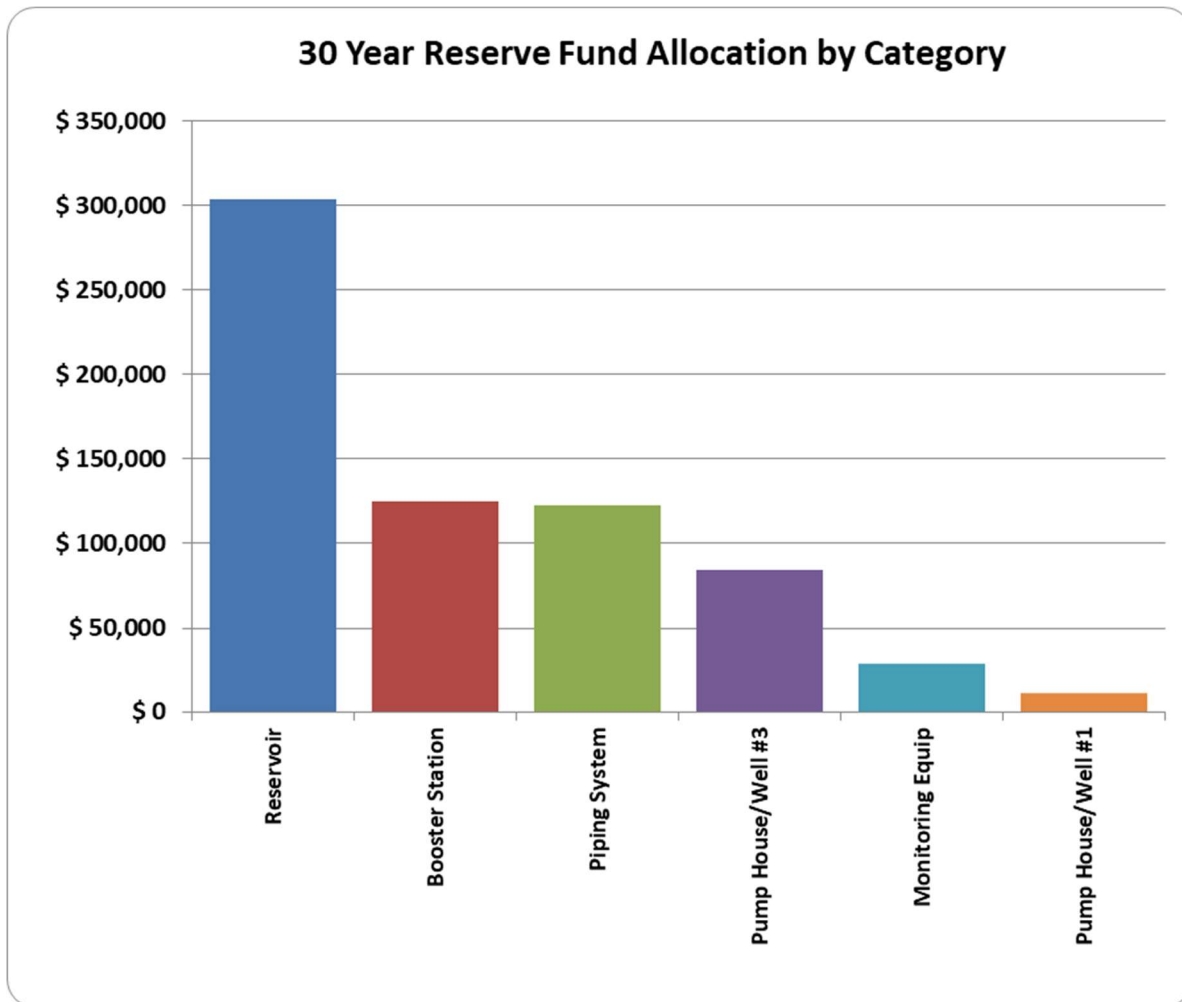
The following categories of reserve components are typically excluded from Reserve Studies:

- Below Threshold Costs: – Component repair and/or replacement costs that are deemed too small to be considered reserve expenses are typically included in the operational or maintenance budget. Expenses that are below this threshold are generally not included in this study and should be part of the operational expense budget.
- Reserve assets which should be part of the operational expenses such as asset expenses that occur annually or assets that have an annual maintenance service contract and can generally be effectively budgeted for each year. They are characterized as being reasonably predictable both in terms of frequency and cost.
- Very Long or Unpredictable Useful Life Expectancy: – Components which, when properly maintained, have a very long useful life with no predictable replacement cycle. Examples include most plumbing, electrical systems and retaining walls. Although there may be circumstances where an Association may wish to include items in these categories.
- Unit Improvements: – Improvements made to the property that fall within the Governing Documents' unit description summary as the responsibility of the unit's owner.
- Other Non-Association/Organization Owned: – Improvements installed on the property, but which are owned by other parties such as governmental agencies, utility companies, the US Postal Service, etc.

Reserve Fund Allocation

The following chart illustrates the reserve fund allocation of the included reserve components. Attention should be given to those component categories which are a large percentage of the allocated costs as these may require significant planning to adequately budget for their replacement. These large expenses may be well into the future during "Peak Year" cycles.

Figure 2: 30 Year Reserve Fund Allocation



Component Inventory Included in Analysis

The following components are included in this Reserve Study financial analysis.

Table 7: Reserve Component Inventory

Summary Component Analysis

Yellow highlighting indicates components with zero remaining useful life

Item	Replace	Maintain	Category	Reserve Component Name	Replacement Cost	Replacement Cost Basis	Estimated Start of Year (2023) Replacement Cost	Last or Scheduled Service Year	Est Useful Life (yrs)	Useful Life Adjust (yrs)	Remaining Useful Life (yrs)	Qty	Unit of Measure	Next Service Year	Est Cost at Next Service
1	R		Booster Station	Reservoir Fence	\$ 3,500	Current Est	\$ 3,500	1989	40		6	1	lump sum	2029	\$ 4,179
2		M	Booster Station	Security -- Camera & Antenna	\$ 2,000	Current Est	\$ 2,000	2022	5		4	1	lump sum	2027	\$ 2,251
3	R		Booster Station	Flow Meter 1 1/2", Totalizing	\$ 1,500	Current Est	\$ 1,500	2023	15		15	1	each	2038	\$ 2,337
4	R		Booster Station	Flow Meter, Well	\$ 1,000	Current Est	\$ 1,000	2010	15		2	1	each	2025	\$ 1,061
5	R		Booster Station	Booster Sys/VFD Const. Pres. Sys.	\$ 5,000	Current Est	\$ 5,000	2012	15		4	1	lump sum	2027	\$ 5,628
6		M	Booster Station	Booster Building #2 by Reservoir	\$ 3,000	Current Est	\$ 3,000	2022	10		9	1	lump sum	2032	\$ 3,914
7		M	Booster Station	Electric Boxes in Booster Building	\$ 2,500	Current Est	\$ 2,500	1981	60		18	1	lump sum	2041	\$ 4,256
8	R		Booster Station	Telemetry Monitoring System	\$ 8,000	Current Est	\$ 8,000	2021	10		8	1	lump sum	2031	\$ 10,134
9	R		Booster Station	Chlorine Dosing System	\$ 2,000	Current Est	\$ 2,000	2023	10		10	1	lump sum	2033	\$ 2,688
10	R		Monitoring Equip	Ultrasonic Probe	\$ 1,500	Current Est	\$ 1,500	2023	7		7	1	each	2030	\$ 1,845
11	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)	\$ 1,000	Current Est	\$ 1,000	2022	3		2	2	each	2025	\$ 1,061
12		M	Piping System	Water Pipelines System	\$ 20,000	Current Est	\$ 20,000	1981	100		58	1	lump sum	2081	\$ 111,068
13	R		Piping System	4" Gate Valves (4)	\$ 10,000	Current Est	\$ 10,000	1981	60		18	4	each	2041	\$ 17,024
14	R		Piping System	6" Gate Valves (5)	\$ 13,000	Current Est	\$ 13,000	1981	60		18	5	each	2041	\$ 22,132
15	R		Piping System	Fire Hydrants (4)	\$ 14,000	Current Est	\$ 14,000	1981	70		28	4	each	2051	\$ 32,031

Summary Component Analysis

Yellow highlighting indicates components with zero remaining useful life

Item	Replace	Maintain	Category	Reserve Component Name	Replacement Cost	Replacement Cost Basis	Estimated Start of Year (2023) Replacement Cost	Last or Scheduled Service Year	Est Useful Life (yrs)	Useful Life Adjust (yrs)	Remaining Useful Life (yrs)	Qty	Unit of Measure	Next Service Year	Est Cost at Next Service
16	R		Piping System	3" PRV In Vault	\$ 2,000	Current Est	\$ 2,000	2020	80		77	1	each	2100	\$ 19,476
17	R		Piping System	4" PRV Spur Road	\$ 2,000	Current Est	\$ 2,000	2020	80		77	1	each	2100	\$ 19,476
18	R		Piping System	4" PRV Southview Lane	\$ 2,000	Current Est	\$ 2,000	2020	80		77	1	each	2100	\$ 19,476
19	R		Piping System	2" Gate Valves In Vault (2)	\$ 4,000	Current Est	\$ 4,000	1981	35	2	2	2	each	2025	\$ 4,244
20	R		Piping System	Water Sampling Stations (2)	\$ 6,000	Current Est	\$ 6,000	2020	20		17	2	lump sum	2040	\$ 9,917
21	R		Piping System	Lot Meters (29)	\$ 5,000	Current Est	\$ 5,000	2012	20		9	29	each	2032	\$ 6,524
22		M	Piping System	3" PRV In Vault	\$ 500	Current Est	\$ 500	2020	5		2	1	each	2025	\$ 530
23		M	Piping System	4" PRV Spur Road	\$ 500	Current Est	\$ 500	2020	5		2	1	each	2025	\$ 530
24		M	Piping System	4" PRV Southview Lane	\$ 500	Current Est	\$ 500	2020	5		2	1	each	2025	\$ 530
25	R		Piping System	Fire Road Standpipe Demolition (3)	\$ 3,000	Current Est	\$ 3,000	2023	100		100	1	lump sum	2123	\$ 57,656
26		M	Piping System	Fire Road Standpipe Maintenance (1)	\$ 500	Current Est	\$ 500	2023	20		20	1	lump sum	2043	\$ 903
27		M	Pump House/Well #1	Well Pump House #1 (near gate)	\$ 2,000	Current Est	\$ 2,000	2022	10		9	1	lump sum	2032	\$ 2,610
28	R		Pump House/Well #3	Grundfos SP10-25 Well #3 Pump	\$ 6,500	Current Est	\$ 6,500	2011	20		8	1	each	2031	\$ 8,234
29	R		Pump House/Well #3	Well Pump Electrical System	\$ 4,300	Current Est	\$ 4,300	2016	40		33	1	lump sum	2056	\$ 11,405
30	R		Pump House/Well #3	Surge Protector	\$ 500	Current Est	\$ 500	2021	3		1	1	each	2024	\$ 515
31	R		Pump House/Well #3	Well Pump Yaskawa 56 amp Controller	\$ 2,200	Current Est	\$ 2,200	2021	10		8	1	each	2031	\$ 2,787
32		M	Pump House/Well #3	Security -- Cameras (2) & Beam	\$ 2,500	Current Est	\$ 2,500	2022	5		4	1	lump sum	2027	\$ 2,814
33		M	Pump House/Well #3	Well Pump Building #3 (in quarry)	\$ 3,000	Current Est	\$ 3,000	2022	10		9	1	lump sum	2032	\$ 3,914
34	R		Reservoir	Reservoir Demolition	\$ 10,000	Current Est	\$ 10,000	1981	60		18	1	lump sum	2041	\$ 17,024

Summary Component Analysis

Yellow highlighting indicates components with zero remaining useful life

Item	Replace	Maintain	Category	Reserve Component Name	Replacement Cost	Replacement Cost Basis	Estimated Start of Year (2023) Replacement Cost	Last or Scheduled Service Year	Est Useful Life (yrs)	Useful Life Adjust (yrs)	Remaining Useful Life (yrs)	Qty	Unit of Measure	Next Service Year	Est Cost at Next Service
35	R		Reservoir	Reservoir Replacement (Tank #1)	\$ 100,000	Current Est	\$ 100,000	2028	100		5	1	lump sum	2028	\$ 115,927
36	R		Reservoir	Reservoir Replacement (Tank #2)	\$ 100,000	Current Est	\$ 100,000	2041	100		18	1	lump sum	2041	\$ 170,243

Components Not Included in Funding

The below components have been excluded from funding in this reserve study. Note that the inclusion of any of these items at a later date via a revision or update to this study will likely impact the funding strategies developed for this report.

Table 8: Components Not Included in Funding

Item	Major Component	Reason Not Considered for Analysis	Comments
1	Reservoir mixer	Other (add comments)	Pending needs/cost analysis
2	Chlorine monitoring system	Other (add comments)	Pending needs/cost analysis
3	Reservoir maintenance	Other (add comments)	Reservoir to be replaced with no further maintenance
4	Well #3 replacement	Other (add comments)	Special assessment included in 2042 (placeholder)
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			

Income and Expenses

The funding plan of this reserve study will help the association's reserve account to be highly funded over the next 30 years. This requires a recommended allocation amount into the reserve account. The following table summarizes incomes and expenses and indicates the recommended contributions to the reserve account. This funding plan considers four basic principles:

1. There are adequate reserves when needed.
2. The budget should remain stable but increasing to offset inflationary factors.
3. The costs are well distributed over time.
4. The funding plan must allow the Association to be fiscally responsible.

The following table summarizes each year's incomes and expenses: It includes the following elements to derive the Annual Maintenance assessments and Annual Reserve Contributions:

- Annual reserve balance
- The fully funded balance of all reserve components
- Total income
- Total expenses (reserve components, operational and loans)

Table 9: Projected Income & Expenses Summary

Summary Table of Annual Incomes and Expenses

Incomes										Expenses									
Year	Start of Year Reserve Balance	Fully Funded Balance	Start Of Year Percent Funded	Reserve Fund Deficiency from FFB (per unit)	Special Assessments	Total Annual Maintenance Assessments	Loans	Reserve Balance Interest Income	Other Incomes	Total Annual Income	Operating Expenses	Loan Expenses (payments)	Special Projects	Reserve Expenses *	Estimated Annual Taxes	Total Expenses	Annual Reserve Contribution (less loans) **	Reserve Contrib as Pct of Total Income	EOY Reserve Balance
2023	\$ 79,145	\$ 249,276	32%	-\$ 5,317	\$ 0	\$ 16,000	\$ 0	\$ 3,023	\$ 0	\$ 19,023	\$ 0	\$ 0	\$ 0	\$ 8,500	\$ 0	\$ 8,500	\$ 19,023	100%	\$ 89,668
2024	\$ 89,668	\$ 260,055	34%	-\$ 5,325	\$ 0	\$ 17,600	\$ 0	\$ 3,425	\$ 0	\$ 21,025	\$ 0	\$ 0	\$ 0	\$ 515	\$ 0	\$ 515	\$ 21,025	100%	\$ 110,179
2025	\$ 110,179	\$ 276,560	40%	-\$ 5,199	\$ 0	\$ 18,480	\$ 0	\$ 4,209	\$ 0	\$ 22,689	\$ 0	\$ 0	\$ 0	\$ 7,956	\$ 0	\$ 7,956	\$ 22,689	100%	\$ 124,911
2026	\$ 124,911	\$ 286,173	44%	-\$ 5,039	\$ 0	\$ 19,404	\$ 0	\$ 4,772	\$ 0	\$ 24,176	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0	\$ 24,176	100%	\$ 149,087
2027	\$ 149,087	\$ 304,554	49%	-\$ 4,858	\$ 0	\$ 20,374	\$ 0	\$ 5,695	\$ 0	\$ 26,069	\$ 0	\$ 0	\$ 0	\$ 11,256	\$ 0	\$ 11,256	\$ 26,069	100%	\$ 163,900
2028	\$ 163,900	\$ 312,189	53%	-\$ 4,634	\$ 50,000	\$ 20,374	\$ 0	\$ 6,261	\$ 0	\$ 76,635	\$ 0	\$ 0	\$ 0	\$ 117,086	\$ 0	\$ 117,086	\$ 76,635	100%	\$ 123,450
2029	\$ 123,450	\$ 211,348	58%	-\$ 2,747	\$ 0	\$ 20,374	\$ 0	\$ 4,716	\$ 0	\$ 25,090	\$ 0	\$ 0	\$ 0	\$ 4,179	\$ 0	\$ 4,179	\$ 25,090	100%	\$ 144,361
2030	\$ 144,361	\$ 224,089	64%	-\$ 2,492	\$ 0	\$ 20,374	\$ 0	\$ 5,515	\$ 0	\$ 25,889	\$ 0	\$ 0	\$ 0	\$ 4,305	\$ 0	\$ 4,305	\$ 25,889	100%	\$ 165,944
2031	\$ 165,944	\$ 237,404	70%	-\$ 2,233	\$ 0	\$ 20,374	\$ 0	\$ 6,339	\$ 0	\$ 26,713	\$ 0	\$ 0	\$ 0	\$ 22,422	\$ 0	\$ 22,422	\$ 26,713	100%	\$ 170,236
2032	\$ 170,236	\$ 232,788	73%	-\$ 1,955	\$ 0	\$ 20,374	\$ 0	\$ 6,503	\$ 0	\$ 26,877	\$ 0	\$ 0	\$ 0	\$ 22,834	\$ 0	\$ 22,834	\$ 26,877	100%	\$ 174,279
2033	\$ 174,279	\$ 227,951	76%	-\$ 1,677	\$ 0	\$ 20,374	\$ 0	\$ 6,657	\$ 0	\$ 27,032	\$ 0	\$ 0	\$ 0	\$ 3,360	\$ 0	\$ 3,360	\$ 27,032	100%	\$ 197,951
2034	\$ 197,951	\$ 243,377	81%	-\$ 1,420	\$ 0	\$ 20,374	\$ 0	\$ 7,562	\$ 0	\$ 27,936	\$ 0	\$ 0	\$ 0	\$ 1,384	\$ 0	\$ 1,384	\$ 27,936	100%	\$ 224,502
2035	\$ 224,502	\$ 261,663	86%	-\$ 1,161	\$ 0	\$ 20,374	\$ 0	\$ 8,576	\$ 0	\$ 28,950	\$ 0	\$ 0	\$ 0	\$ 2,139	\$ 0	\$ 2,139	\$ 28,950	100%	\$ 251,314
2036	\$ 251,314	\$ 280,092	90%	-\$ 899	\$ 0	\$ 20,374	\$ 0	\$ 9,600	\$ 0	\$ 29,974	\$ 0	\$ 0	\$ 0	\$ 734	\$ 0	\$ 734	\$ 29,974	100%	\$ 280,554
2037	\$ 280,554	\$ 300,904	93%	-\$ 636	\$ 0	\$ 20,374	\$ 0	\$ 10,717	\$ 0	\$ 31,091	\$ 0	\$ 0	\$ 0	\$ 10,588	\$ 0	\$ 10,588	\$ 31,091	100%	\$ 301,057
2038	\$ 301,057	\$ 312,586	96%	-\$ 360	\$ 0	\$ 20,374	\$ 0	\$ 11,500	\$ 0	\$ 31,875	\$ 0	\$ 0	\$ 0	\$ 2,337	\$ 0	\$ 2,337	\$ 31,875	100%	\$ 330,595
2039	\$ 330,595	\$ 333,524	99%	-\$ 92	\$ 0	\$ 20,374	\$ 0	\$ 12,629	\$ 0	\$ 33,003	\$ 0	\$ 0	\$ 0	\$ 802	\$ 0	\$ 802	\$ 33,003	100%	\$ 362,796
2040	\$ 362,796	\$ 357,090	102%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 13,859	\$ 0	\$ 34,233	\$ 0	\$ 0	\$ 0	\$ 15,701	\$ 0	\$ 15,701	\$ 34,233	100%	\$ 381,328
2041	\$ 381,328	\$ 349,423	109%	\$ 0	\$ 50,000	\$ 20,374	\$ 0	\$ 14,567	\$ 0	\$ 84,941	\$ 0	\$ 0	\$ 0	\$ 248,043	\$ 0	\$ 248,043	\$ 84,941	100%	\$ 218,226
2042	\$ 218,226	\$ 136,926	159%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 8,336	\$ 0	\$ 28,710	\$ 0	\$ 0	\$ 0	\$ 31,565	\$ 0	\$ 31,565	\$ 28,710	100%	\$ 215,371
2043	\$ 215,371	\$ 123,943	174%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 8,227	\$ 0	\$ 28,601	\$ 0	\$ 0	\$ 0	\$ 6,321	\$ 0	\$ 6,321	\$ 28,601	100%	\$ 237,652
2044	\$ 237,652	\$ 137,032	173%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 9,078	\$ 0	\$ 29,452	\$ 0	\$ 0	\$ 0	\$ 2,790	\$ 0	\$ 2,790	\$ 29,452	100%	\$ 264,314
2045	\$ 264,314	\$ 154,628	171%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 10,097	\$ 0	\$ 30,471	\$ 0	\$ 0	\$ 0	\$ 3,832	\$ 0	\$ 3,832	\$ 30,471	100%	\$ 290,953
2046	\$ 290,953	\$ 172,168	169%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 11,114	\$ 0	\$ 31,489	\$ 0	\$ 0	\$ 0	\$ 1,974	\$ 0	\$ 1,974	\$ 31,489	100%	\$ 320,468
2047	\$ 320,468	\$ 192,655	166%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 12,242	\$ 0	\$ 32,616	\$ 0	\$ 0	\$ 0	\$ 9,148	\$ 0	\$ 9,148	\$ 32,616	100%	\$ 343,936
2048	\$ 343,936	\$ 206,889	166%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 13,138	\$ 0	\$ 33,513	\$ 0	\$ 0	\$ 0	\$ 1,047	\$ 0	\$ 1,047	\$ 33,513	100%	\$ 376,401
2049	\$ 376,401	\$ 230,429	163%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 14,379	\$ 0	\$ 34,753	\$ 0	\$ 0	\$ 0	\$ 2,157	\$ 0	\$ 2,157	\$ 34,753	100%	\$ 408,997
2050	\$ 408,997	\$ 254,084	161%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 15,624	\$ 0	\$ 35,998	\$ 0	\$ 0	\$ 0	\$ 3,333	\$ 0	\$ 3,333	\$ 35,998	100%	\$ 441,662
2051	\$ 441,662	\$ 277,808	159%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 16,871	\$ 0	\$ 37,246	\$ 0	\$ 0	\$ 0	\$ 74,815	\$ 0	\$ 74,815	\$ 37,246	100%	\$ 404,093
2052	\$ 404,093	\$ 229,201	176%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 15,436	\$ 0	\$ 35,811	\$ 0	\$ 0	\$ 0	\$ 43,597	\$ 0	\$ 43,597	\$ 35,811	100%	\$ 396,306
2053	\$ 396,306	\$ 211,895	187%	\$ 0	\$ 0	\$ 20,374	\$ 0	\$ 15,139	\$ 0	\$ 35,513	\$ 0	\$ 0	\$ 0	\$ 8,496	\$ 0	\$ 8,496	\$ 35,513	100%	\$ 423,323

* Reserve expenses in 2023 includes all Reserve Component expenses incurred in 2023

** Annual Reserve Contribution = Total Annual Income – Operating Expenses – Loan Amount – Loan Expenses – Taxes

Loans

Loans are considered an income source and the loan payments are included in the annual operational expenses.

- The principal amount of **new** loans is considered a new, one-time income source.
- Loan payments are included in the annual operational expenses.
- Inflation is not applied to annual loan payments.

The following table summarizes both the current existing loans and any new loans that are planned.

Table 10: Loan Summary

Loan Summary						
<i>There are no loans in this analysis. If any current or new loans were included, they would appear in the list below.</i>						
<u>Loan #</u>	<u>Loan Description</u>	<u>Loan Type</u>	<u>Loan Amount</u>	<u>Origin Year</u>	<u>Term</u>	<u>Ann Interest Ann Payment</u>
1						
2						
3						
4						
5						
6						

Taxes

Within the United States, most associations will file Federal Tax Form 1120 or 1120-H. Managing the reserve fund is critical and every association should seek specific advice about their tax liability to minimize the amount of taxable income.

If estimated taxes are included in this analysis, refer to *Table 9: Projected Income & Expenses Summary* for the estimated annual tax liability.

Based on user input,

- Taxes are not included in this analysis
- Not applicable
- Not applicable

Disclaimer: *Any estimated annual taxes or the estimated tax rate used in this analysis is a calculated estimate only that is based on information supplied by the association. The calculation cannot accurately account for the effect of final calculations which are done independently. The estimate provided is not to be construed as financial or other professional advice. If accounting, legal or other expert assistance is required, and you are not yourself a professional, you should seek the service of a competent professional before acting on any information provided herein.*

Maximum Reserve Fund Expenses and Reserve Contributions

The most important aspect of preparing a financial plan is to have confidence that you can meet all anticipated expenses in the year of their occurrences. It is best to not focus on percent funding as the key indicator of your ability to meet those expense. Instead, focus on each year's total expenses versus the total resources available to meet those expenses. In addition, the following criteria should be considered:

- Regular contributions to the reserve fund should be established and maintained to assure that funding is available to meet future reserve expenses.
- Maintain a percent funding threshold high enough so that the association's consumers pay for the resources. Generally, this is in the range of 70% to 100%.
- Maintain the reserve fund balance at a level high enough to not only meet each year's expenses, but also minimize the risks of special assessments and deferred maintenance.
 - The annual reserve fund contribution required to support this analysis is shown in *Table 9: Projected Income & Expenses Summary* on page 20.
 - A graphical view of the monthly reserve fund contribution is displayed in *Figure 8: Average Monthly Reserve Fund Contribution Rate* on page 36.

The following table lists the year that the maximum reserve fund expenses (depreciable asset expenses) occur and the financial state of the reserve fund in that year.

Table 11: Maximum Reserve Expenses and Contributions

Maximum Reserve Expenses & Reserve Contribution	
Year Maximum Reserve Expenses Occur:	2041
Min Req'd % FFB at Start of 2041:	71%
This analysis, Start of Year % Funding in 2041:	109%
Reserve Fund Balance at Start of 2041:	\$ 381,328
Reserve Contribution in 2041:	\$ 84,941
Total Available Reserve Funds in 2041: *	\$ 466,269
Total Reserve Expenses in 2041:	\$ 248,043

* Does not include funds from anticipated annual maintenance assessments in year 2041

Detailed Financial Analysis

Annual Projected Expenses

The annual projected reserve expenses are estimates based on estimated useful life of the components, the current cost estimates, and adjustments for inflation.

Special Project Expenditures

Any special projects are shown in the following table.

Table 12: Special Projects Table

Year	Cost	Special Project or One-Time Expense
------	------	-------------------------------------

First Year of Analysis Reserve Components Services Complete

At the time the financial analysis was performed, if any reserve components' services which may have been due in the first year of analysis was already completed, then funding during the first year of analysis would not be required for those components. Any components which have been completed will appear in the following table.

Table 13: Reserve Component Already Completed in First Year of Analysis Table

As of 01 May 2023, these components' scheduled services are complete

Year	Cost	Replace	Maintain	Category	Component
Total:	\$ 0				

Annual Reserve Component Expenditures

The following Summary Component Analysis table discloses each reserve component expenditure for each year of the analysis period, (including those components that were indicated as being complete at the time the financial analysis was performed).

Table 14: Summary Component Expenditures Table

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
2023	\$ 1,500	R		Booster Station	Flow Meter 1 1/2", Totalizing
	\$ 2,000	R		Booster Station	Chlorine Dosing System
	\$ 1,500	R		Monitoring Equip	Ultrasonic Probe
	\$ 3,000	R		Piping System	Fire Road Standpipe Demolition (3)
	\$ 500		M	Piping System	Fire Road Standpipe Maintenance (1)
2023 Total:	\$ 8,500				
2024	\$ 515	R		Pump House/Well #3	Surge Protector
2024 Total:	\$ 515				
2025	\$ 1,061	R		Booster Station	Flow Meter, Well
	\$ 1,061	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 4,244	R		Piping System	2" Gate Valves In Vault (2)
	\$ 530		M	Piping System	3" PRV In Vault
	\$ 530		M	Piping System	4" PRV Spur Road
	\$ 530		M	Piping System	4" PRV Southview Lane
2025 Total:	\$ 7,956				
2026	No Reserve Expenses Anticipated				

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
2027	\$ 2,251		M	Booster Station	Security -- Camera & Antenna
	\$ 5,628	R		Booster Station	Booster Sys/VFD Const. Pres. Sys.
	\$ 563	R		Pump House/Well #3	Surge Protector
	\$ 2,814		M	Pump House/Well #3	Security -- Cameras (2) & Beam
2027 Total:	\$ 11,256				
2028	\$ 1,159	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 115,927	R		Reservoir	Reservoir Replacement (Tank #1)
2028 Total:	\$ 117,086				
2029	\$ 4,179	R		Booster Station	Reservoir Fence
2029 Total:	\$ 4,179				
2030	\$ 1,845	R		Monitoring Equip	Ultrasonic Probe
	\$ 615		M	Piping System	3" PRV In Vault
	\$ 615		M	Piping System	4" PRV Spur Road
	\$ 615		M	Piping System	4" PRV Southview Lane
	\$ 615	R		Pump House/Well #3	Surge Protector
2030 Total:	\$ 4,305				

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
2031	\$ 10,134	R		Booster Station	Telemetry Monitoring System
	\$ 1,267	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 8,234	R		Pump House/Well #3	Grundfos SP10-25 Well #3 Pump
	\$ 2,787	R		Pump House/Well #3	Well Pump Yaskawa 56 amp Controller
2031 Total:	\$ 22,422				
2032	\$ 2,610		M	Booster Station	Security -- Camera & Antenna
	\$ 3,914		M	Booster Station	Booster Building #2 by Reservoir
	\$ 6,524	R		Piping System	Lot Meters (29)
	\$ 2,610		M	Pump House/Well #1	Well Pump House #1 (near gate)
	\$ 3,262		M	Pump House/Well #3	Security -- Cameras (2) & Beam
	\$ 3,914		M	Pump House/Well #3	Well Pump Building #3 (in quarry)
2032 Total:	\$ 22,834				
2033	\$ 2,688	R		Booster Station	Chlorine Dosing System
	\$ 672	R		Pump House/Well #3	Surge Protector
2033 Total:	\$ 3,360				
2034	\$ 1,384	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
2034 Total:	\$ 1,384				

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
2035	\$ 713		M	Piping System	3" PRV In Vault
	\$ 713		M	Piping System	4" PRV Spur Road
	\$ 713		M	Piping System	4" PRV Southview Lane
2035 Total:	\$ 2,139				
2036	\$ 734	R		Pump House/Well #3	Surge Protector
2036 Total:	\$ 734				
2037	\$ 3,025		M	Booster Station	Security -- Camera & Antenna
	\$ 2,269	R		Monitoring Equip	Ultrasonic Probe
	\$ 1,513	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 3,781		M	Pump House/Well #3	Security -- Cameras (2) & Beam
2037 Total:	\$ 10,588				
2038	\$ 2,337	R		Booster Station	Flow Meter 1 1/2", Totalizing
2038 Total:	\$ 2,337				
2039	\$ 802	R		Pump House/Well #3	Surge Protector
2039 Total:	\$ 802				

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
2040	\$ 1,653	R		Booster Station	Flow Meter, Well
	\$ 1,653	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 9,917	R		Piping System	Water Sampling Stations (2)
	\$ 826		M	Piping System	3" PRV In Vault
	\$ 826		M	Piping System	4" PRV Spur Road
	\$ 826		M	Piping System	4" PRV Southview Lane
2040 Total:	\$ 15,701				
2041	\$ 4,256		M	Booster Station	Electric Boxes in Booster Building
	\$ 13,619	R		Booster Station	Telemetry Monitoring System
	\$ 17,024	R		Piping System	4" Gate Valves (4)
	\$ 22,132	R		Piping System	6" Gate Valves (5)
	\$ 3,745	R		Pump House/Well #3	Well Pump Yaskawa 56 amp Controller
	\$ 17,024	R		Reservoir	Reservoir Demolition
	\$ 170,243	R		Reservoir	Reservoir Replacement (Tank #2)
2041 Total:	\$ 248,043				
2042	\$ 3,507		M	Booster Station	Security -- Camera & Antenna
	\$ 8,768	R		Booster Station	Booster Sys/VFD Const. Pres. Sys.
	\$ 5,261		M	Booster Station	Booster Building #2 by Reservoir

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
	\$ 3,507		M	Pump House/Well #1	Well Pump House #1 (near gate)
	\$ 877	R		Pump House/Well #3	Surge Protector
	\$ 4,384		M	Pump House/Well #3	Security -- Cameras (2) & Beam
	\$ 5,261		M	Pump House/Well #3	Well Pump Building #3 (in quarry)
2042 Total:	\$ 31,565				
2043	\$ 3,612	R		Booster Station	Chlorine Dosing System
	\$ 1,806	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 903		M	Piping System	Fire Road Standpipe Maintenance (1)
2043 Total:	\$ 6,321				
2044	\$ 2,790	R		Monitoring Equip	Ultrasonic Probe
2044 Total:	\$ 2,790				
2045	\$ 958		M	Piping System	3" PRV In Vault
	\$ 958		M	Piping System	4" PRV Spur Road
	\$ 958		M	Piping System	4" PRV Southview Lane
	\$ 958	R		Pump House/Well #3	Surge Protector
2045 Total:	\$ 3,832				

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
2046	\$ 1,974	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
2046 Total:	\$ 1,974				
2047	\$ 4,066		M	Booster Station	Security -- Camera & Antenna
	\$ 5,082		M	Pump House/Well #3	Security -- Cameras (2) & Beam
2047 Total:	\$ 9,148				
2048	\$ 1,047	R		Pump House/Well #3	Surge Protector
2048 Total:	\$ 1,047				
2049	\$ 2,157	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
2049 Total:	\$ 2,157				
2050	\$ 1,111		M	Piping System	3" PRV In Vault
	\$ 1,111		M	Piping System	4" PRV Spur Road
	\$ 1,111		M	Piping System	4" PRV Southview Lane
2050 Total:	\$ 3,333				
2051	\$ 18,303	R		Booster Station	Telemetry Monitoring System
	\$ 3,432	R		Monitoring Equip	Ultrasonic Probe

Reserve Component Expenditures for Years 2023 to 2052

Year	Cost	Replace	Maintain	Category	Component
	\$ 32,031	R		Piping System	Fire Hydrants (4)
	\$ 14,872	R		Pump House/Well #3	Grundfos SP10-25 Well #3 Pump
	\$ 1,144	R		Pump House/Well #3	Surge Protector
	\$ 5,033	R		Pump House/Well #3	Well Pump Yaskawa 56 amp Controller
2051 Total:	\$ 74,815				

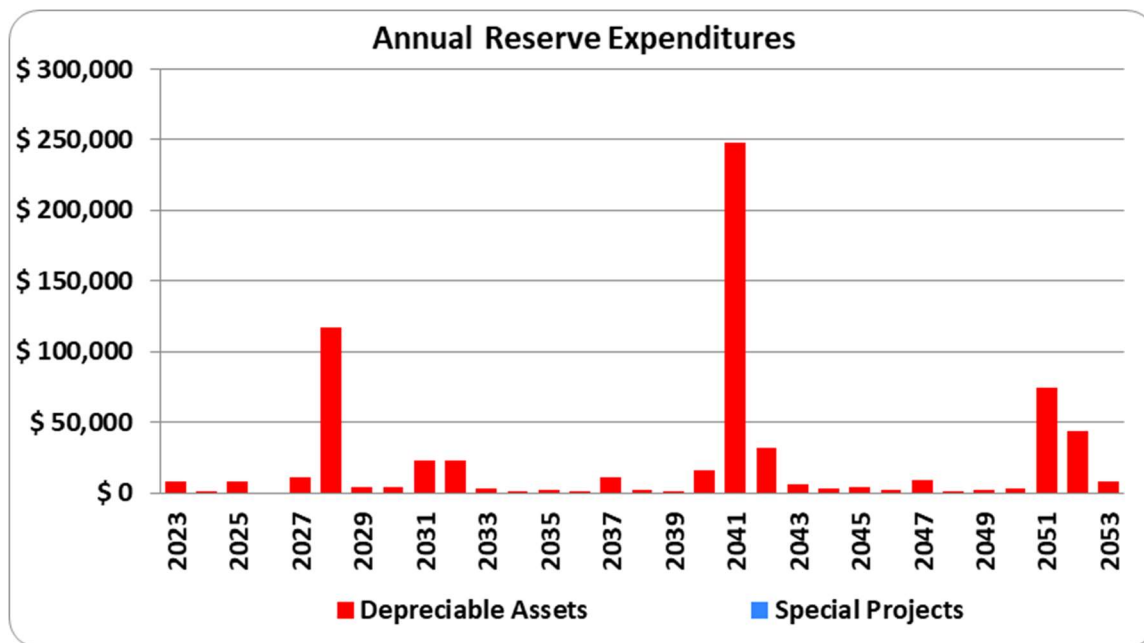
2052	\$ 4,713		M	Booster Station	Security -- Camera & Antenna
	\$ 7,070		M	Booster Station	Booster Building #2 by Reservoir
	\$ 2,357	R		Monitoring Equip	Hach DR300 Pocket Colorimeters (2)
	\$ 11,783	R		Piping System	Lot Meters (29)
	\$ 4,713		M	Pump House/Well #1	Well Pump House #1 (near gate)
	\$ 5,891		M	Pump House/Well #3	Security -- Cameras (2) & Beam
	\$ 7,070		M	Pump House/Well #3	Well Pump Building #3 (in quarry)
2052 Total:	\$ 43,597				

Reserve Fund Expenditures

The graph below shows the projected future reserve expenses that the association is responsible to fund. As with all computations in this report, the estimates in this figure are based on the estimated expense projections which are combination of historical expenditures and current estimates. Expenses are projected 30 years into the future, using the Inflation rate assumptions stated earlier.

It is important to make note of large expenditure years (peak years) when there will be significant projected expenditures related to one or more component projects that will require repair/replacement. These large but infrequent component expenses during “peak” years are typically the most difficult to budget for as they are often overlooked or ignored due to the perception that the expenses are far in the future and there will be time to budget for them later.

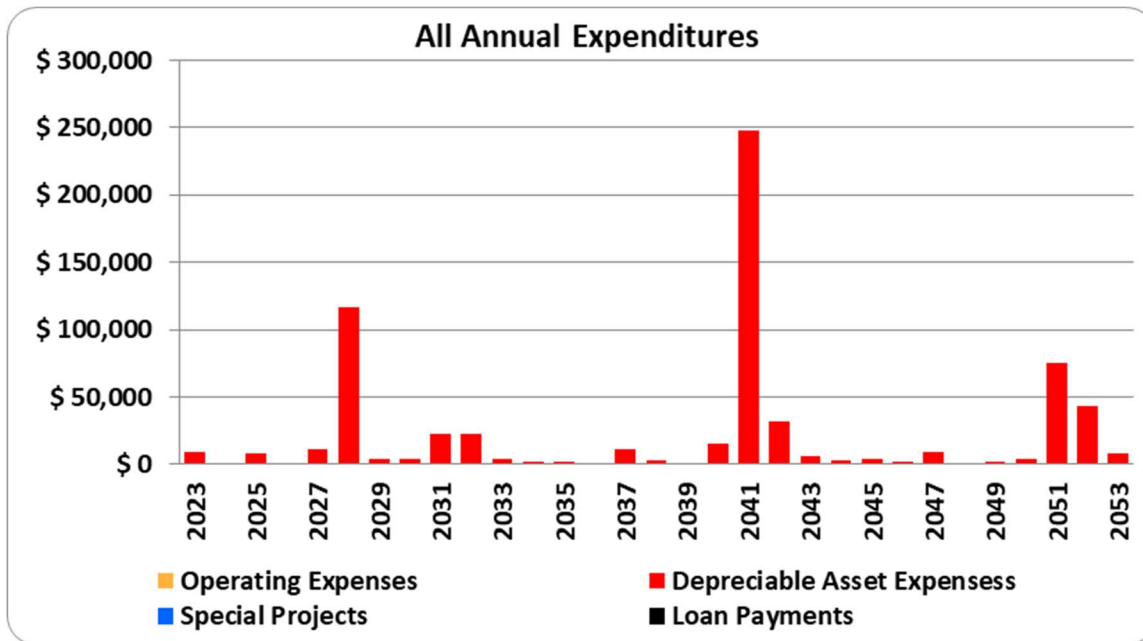
Figure 3: Reserve Fund Expenditures



All Expenses

In addition to reserve expenditures, the association needs to cover operational expenses, costs for special projects and any loan payments. The following graph depicts all annual expenditures that the association can expect over the next 30 years.

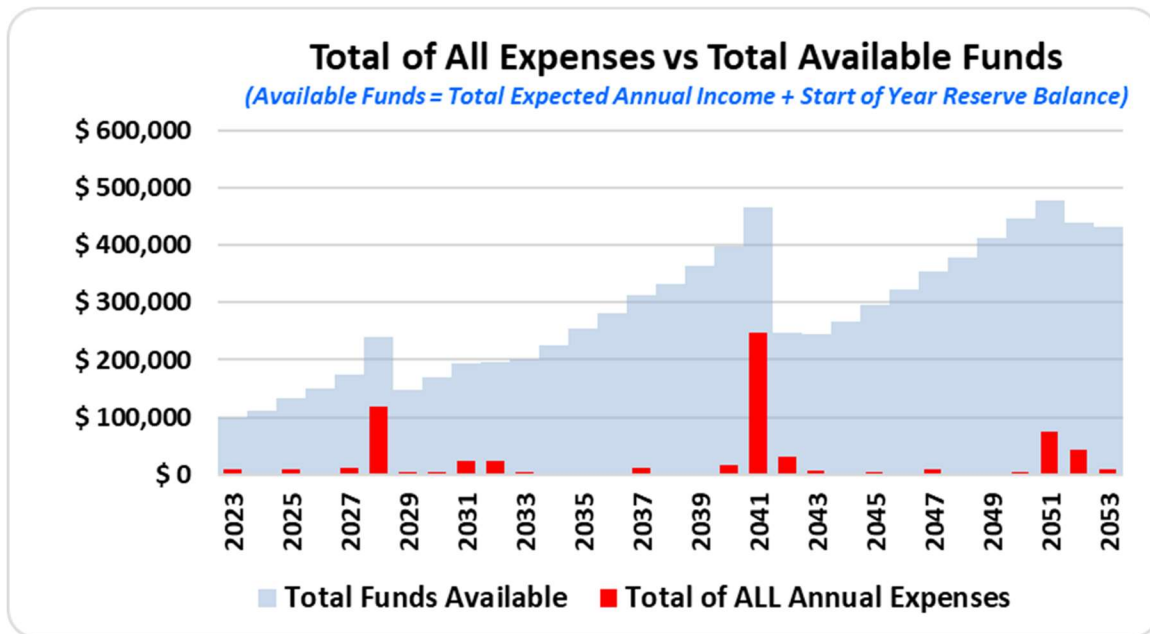
Figure 4: All Annual Expenses



As with any projections of future expenditures, “near-term” projects will be more accurate than events in the future, especially events projected many years away.

The following graph illustrates each year’s anticipated expenses versus the available cash assets. The cash assets are assumed to be the total of the start of year reserve fund balance plus the anticipated annual income plus any additional income such as loans or other income types. In effect, this chart shows you the total expenses verses total available funds in each year.

Figure 5: All Annual Expenses versus Available Funds

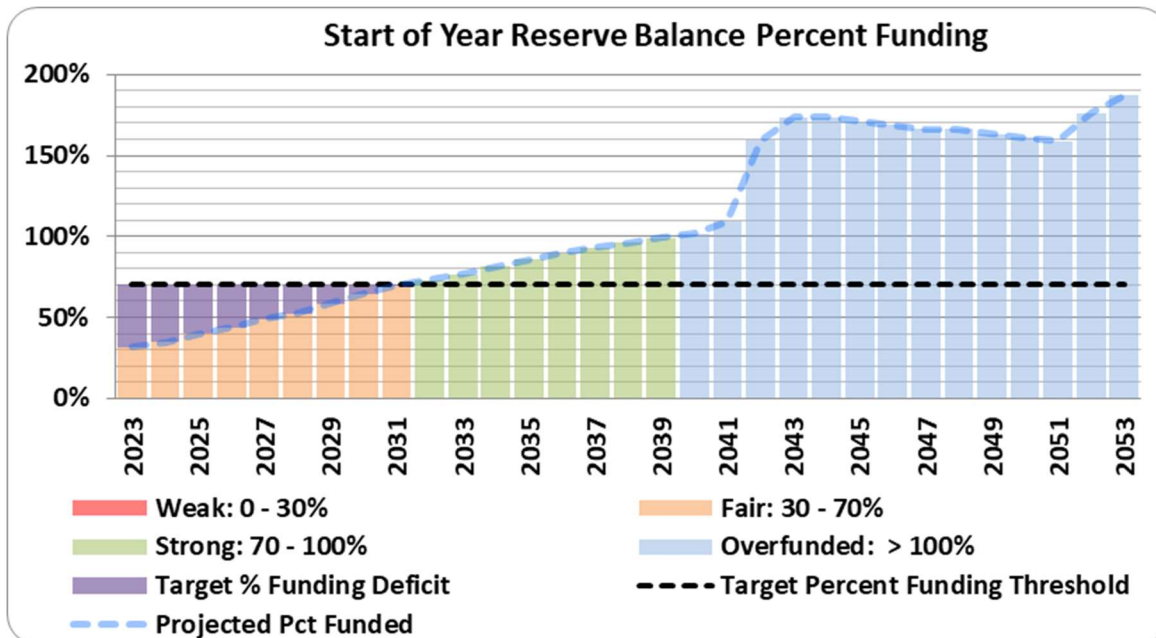


Reserve Balance

This graph illustrates the key elements of the funding model proposed in this assessment. Over the timeframe of this reserve

study, the allocation rates and the percent funding will fluctuate based on the expenditures projected in any given year.

Figure 6: Start of Year Reserve Balance Percent Funding



Annual Income and Contribution to Reserve Fund

Based on the current percent funded and the projected cash flow requirements, the recommended reserve contributions should be established at per month this fiscal year. This represents the first year of a 30-year Funding Plan. The actual contribution to the reserve fund will vary from year-to-year depending on the anticipated reserve expenses. To most fairly spread out the contribution burden over current and future owners in our inflationary economic environment, nominal annual increases should be expected in future years. Most authorities cite that the annual reserve contribution should be at least 10% of the annual income. Associations with a contribution rate less than 10% can expect future special assessments.

This recommended reserve contribution rate is depicted in the following two graphs.

Figure 7: Annual Income and Reserve Contribution

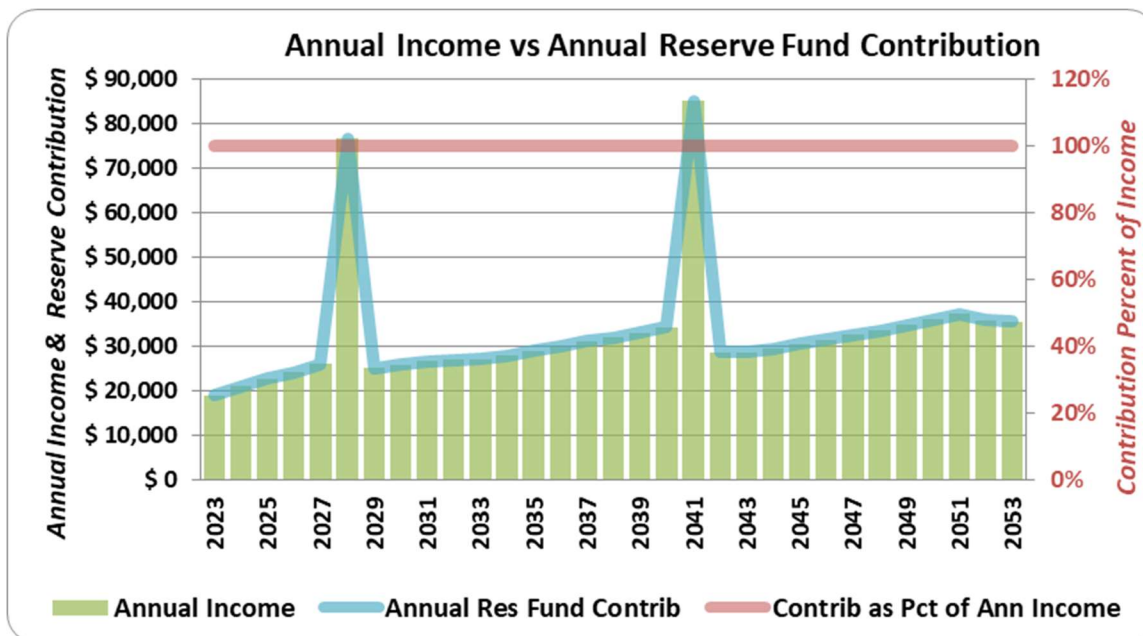
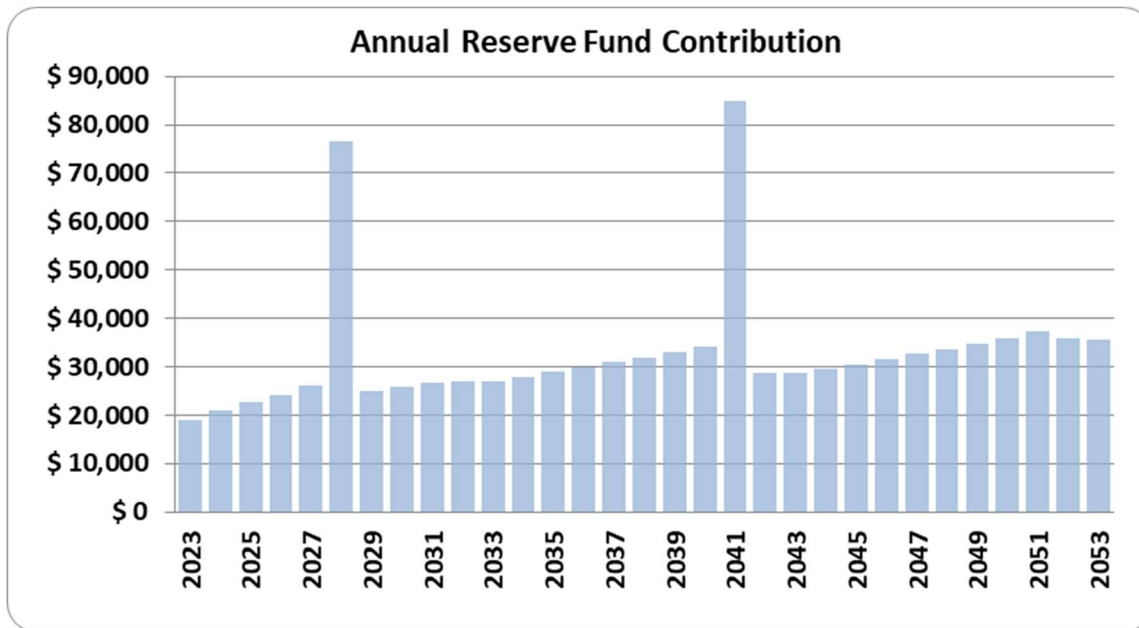


Figure 8: Average Monthly Reserve Fund Contribution Rate



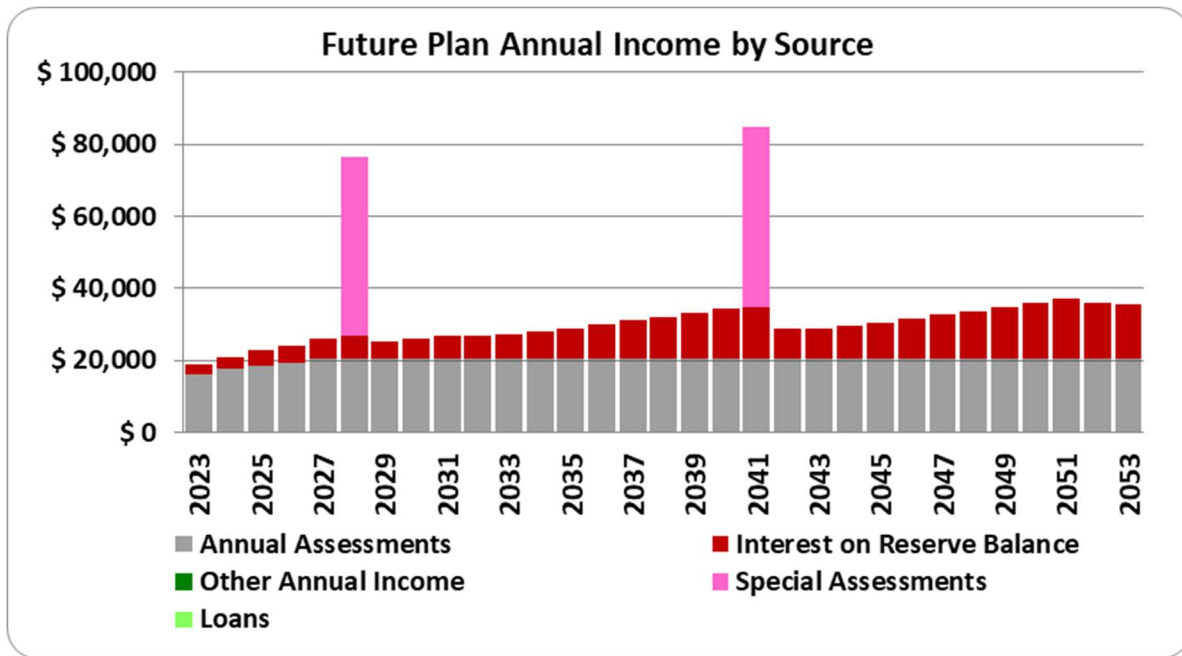
Income Sources

Income is derived from several potential sources:

- Annual maintenance assessments
- Special assessments
- Interest on reserve account
- Interest on other bank accounts
- One-time income (e.g., Loans)
- Other annual income sources (e.g., rentals and fees)

The future annual incomes are depicted in the following graph.

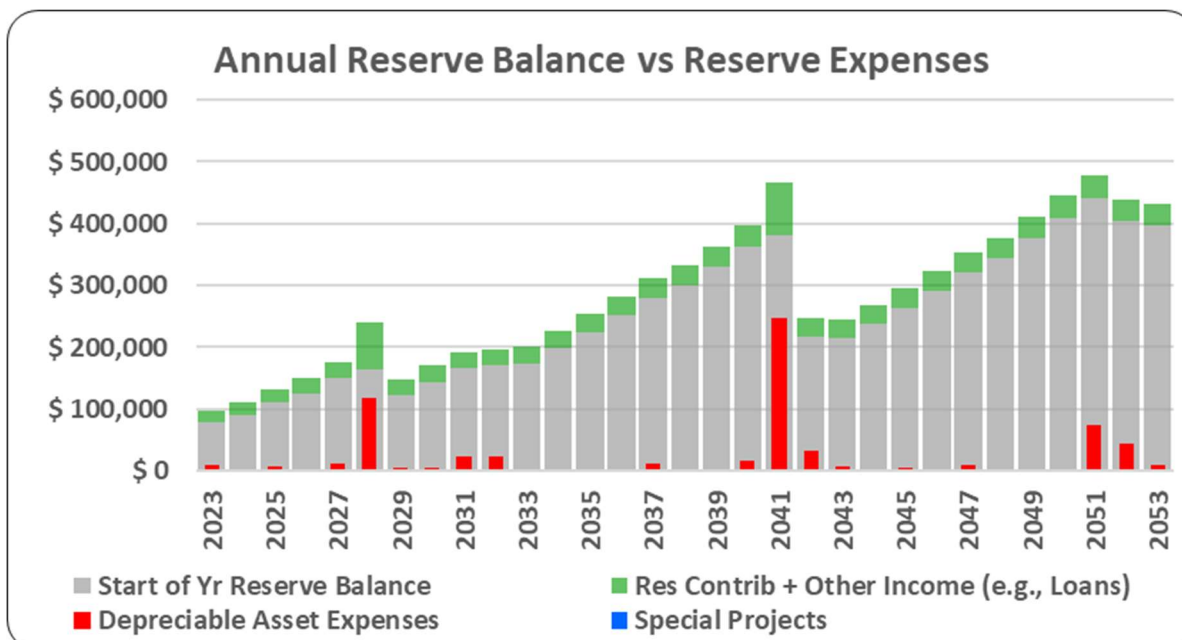
Figure 9: Annual Income by Source



Annual Reserve Balance and Reserve Expenses

The following graph is often cited as the most important statistic for the Association's financial analysis. This graph depicts the estimated reserve expenses compared to the estimated reserve fund balance in each year of the analysis. The Association's key responsibility is to assure that the Reserve Fund is adequate to provide for the maintenance or replacement of depreciable components. This graph provides a quick and vivid view.

Figure 10: Annual Reserve Balance vs Reserve Expenses



Current Funding versus Recommend Funding Plans

The following two graphs compare the current funding plan to the proposed funding plan of this reserve study. The comparisons shown here illustrate both the Start of Year Reserve Balances and the Percent Funding comparisons. The term, “current plan”, as used here is simplified in that it accounts for planned maintenance assessments increases and special assessments that the Association could levy. Refer to each graph’s notes for details.

Figure 11: Reserve Account Comparison

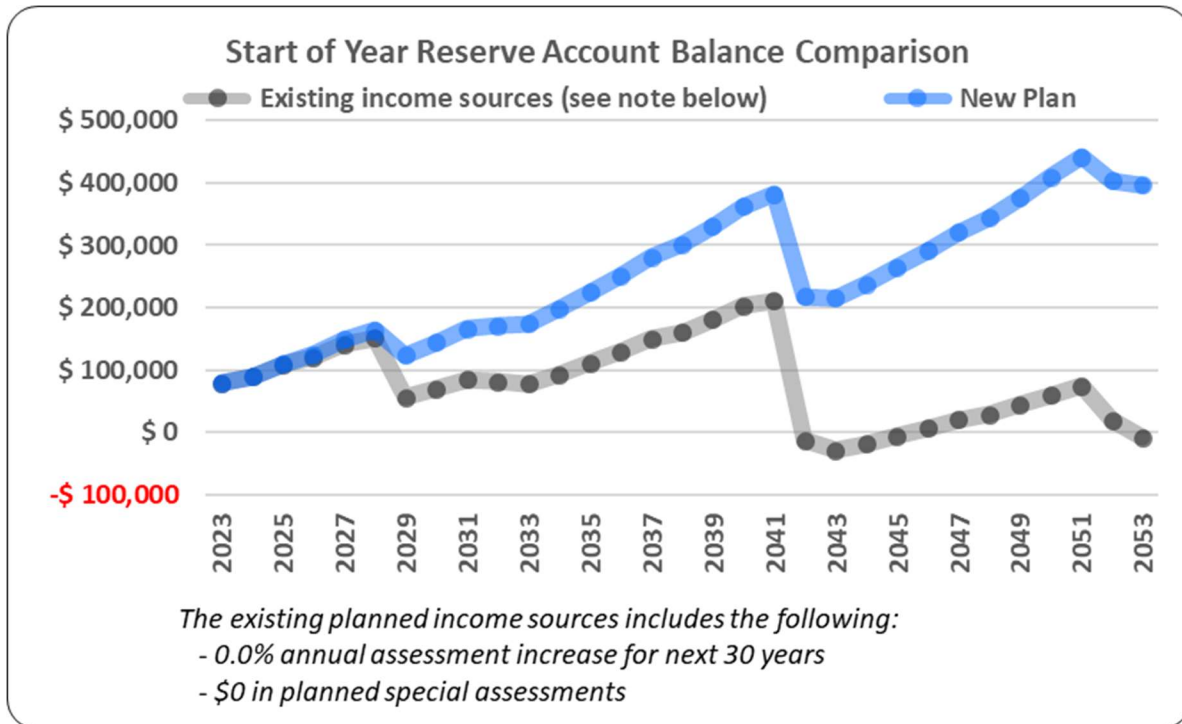
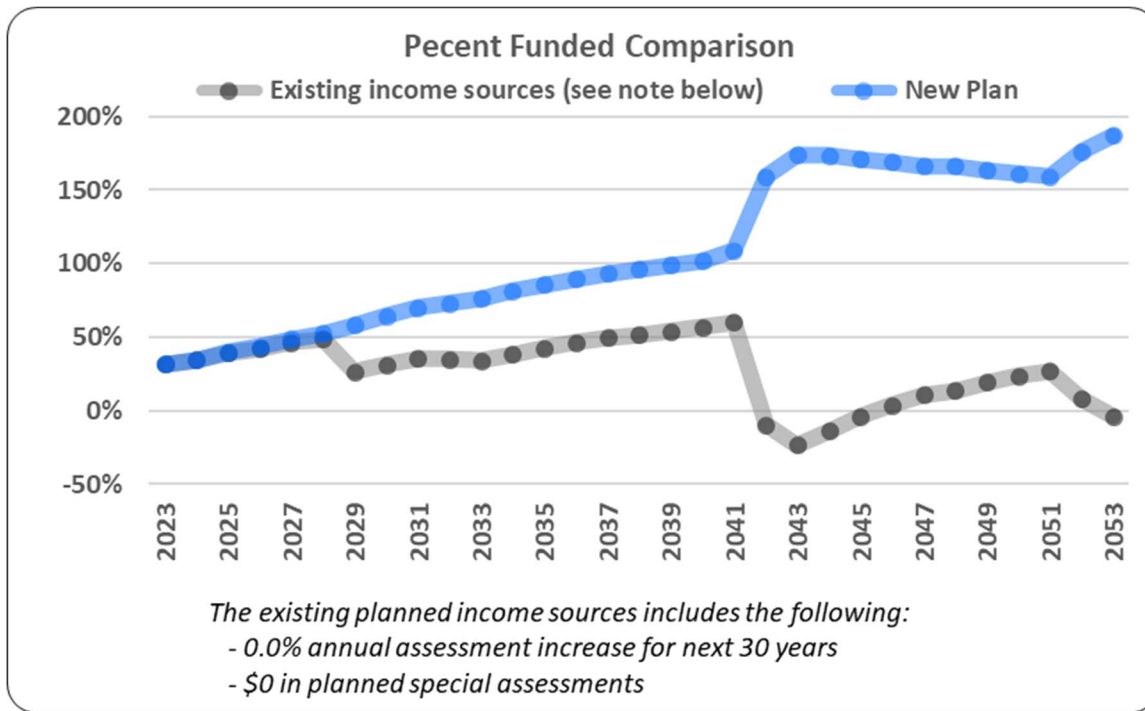


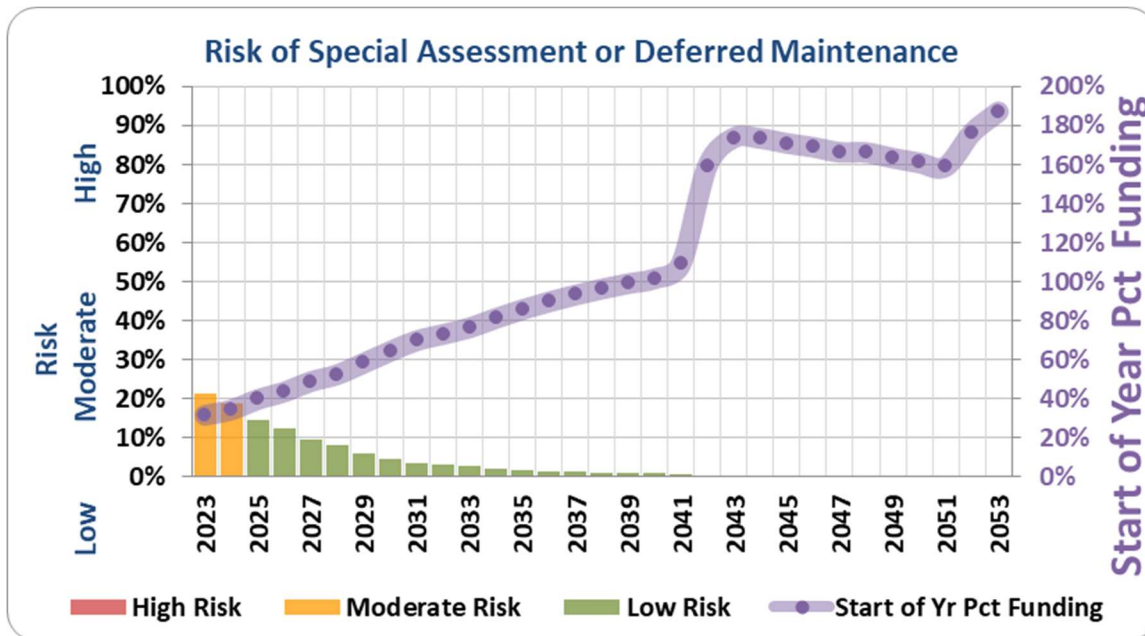
Figure 12: Percent Funded Comparison



Risk of Special Assessment or Deferred Maintenance

Calculating the risk of a special assessment is not an exact science. However, it is well understood that percent funding is a reliable predictor of the likelihood of a special assessment or the deferral of maintenance of reserve components. Associations above 70% funded have less than a 4% chance of ever needing a special assessment, whereas associations less than 30% funded are likely to need a special assessment every 2 to 4 years. The following table represents an estimate of the risk of a special assessment or deferred maintenance.

Figure 13: Risk of Special Assessment or Deferred Maintenance



Contingency Fund

The purpose of a contingency fund is to provide funds for unexpected expenses, unusually higher than anticipated expenses or other emergencies or shortfalls. A contingency fund can also be used to fund miscellaneous expenses that may be difficult to predict and plan. The contingency fund can be especially useful in situations where unexpected expenses may occur such as a burst water line or unexpected incidents such as pest infestations or emergency snow removal expenses.

Should the Association decide to create a contingency fund, the following guidelines are recommended:

- Maintain your contingency fund in a separate account from reserve and operational expenses.
- Set a policy for maintenance of the contingency fund. For example, a minimum and/or maximum balance, a percent of the annual operational expense budget or a percent of the annual reserve fund balance.
- Document all deposits and withdrawals from the contingency fund.

Income and Expense Summaries

Income and expenses summaries are presented on the following pages.

Years 2023 to 2032

Income Years 2023 to 2032

Estimated Incomes	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Maintenance Assessments Including Sched Increases	\$ 16,000	\$ 17,600	\$ 18,480	\$ 19,404	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 193,729
Interest Income Reserve Balance	\$ 3,023	\$ 3,425	\$ 4,209	\$ 4,772	\$ 5,695	\$ 6,261	\$ 4,716	\$ 5,515	\$ 6,339	\$ 6,503	\$ 50,458
Other Annual Income											\$ 0
Special Assessments						\$ 50,000					\$ 50,000
Loans											
Total Income	\$ 19,023	\$ 21,025	\$ 22,689	\$ 24,176	\$ 26,069	\$ 76,635	\$ 25,090	\$ 25,889	\$ 26,713	\$ 26,877	\$ 294,187

Expenses Years 2023 to 2032

Operating and Loan Expenses	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Estimated Operating Expenses											
Estimated Annual Loan Payments											

Special Projects	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
------------------	------	------	------	------	------	------	------	------	------	------	-------

Estimated Tax Liability	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Tax Liability not Included in Analysis											

Totals	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
Total Operating Expenses											
Special Projects											
Total Reserve Fund Expenses	\$ 8,500	\$ 515	\$ 7,956		\$ 11,256	\$ 117,086	\$ 4,179	\$ 4,305	\$ 22,422	\$ 22,834	\$ 199,053

Reserve Fund Years 2023 to 2032

Description	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Start of Year Fully Funded Reserve	\$ 249,276	\$ 260,055	\$ 276,560	\$ 286,173	\$ 304,554	\$ 312,189	\$ 211,348	\$ 224,089	\$ 237,404	\$ 232,788
Start of Year Reserve Fund Balance *	\$ 79,145	\$ 89,668	\$ 110,179	\$ 124,911	\$ 149,087	\$ 163,900	\$ 123,450	\$ 144,361	\$ 165,944	\$ 170,236
Percent Funded at Start of Year	32%	34%	40%	44%	49%	53%	58%	64%	70%	73%
Annual Reserve Fund Contributions	\$ 19,023	\$ 21,025	\$ 22,689	\$ 24,176	\$ 26,069	\$ 76,635	\$ 25,090	\$ 25,889	\$ 26,713	\$ 26,877
Net Reserve Withdrawals	-\$ 8,500	-\$ 515	-\$ 7,956		-\$ 11,256	-\$ 117,086	-\$ 4,179	-\$ 4,305	-\$ 22,422	-\$ 22,834
EOY Reserve Fund Balance	\$ 89,668	\$ 110,179	\$ 124,911	\$ 149,087	\$ 163,900	\$ 123,450	\$ 144,361	\$ 165,944	\$ 170,236	\$ 174,279

* 2023 balance as of 01-May-2023.

Reserve Expenses 2023 to 2032

Replace	Maintain	Reserve Fund Withdrawals	Original Cost	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
R		Reservoir Fence	\$ 3,500							\$ 4,179				\$ 4,179
	M	Security -- Camera & Antenna	\$ 2,000					\$ 2,251					\$ 2,610	\$ 4,861
R		Flow Meter 1 1/2", Totalizing	\$ 1,500	\$ 1,500										\$ 1,500
R		Flow Meter, Well	\$ 1,000			\$ 1,061								\$ 1,061
R		Booster Sys/VFD Const. Pres. Sys.	\$ 5,000					\$ 5,628						\$ 5,628
	M	Booster Building #2 by Reservoir	\$ 3,000										\$ 3,914	\$ 3,914
	M	Electric Boxes in Booster Building	\$ 2,500											\$ 0
R		Telemetry Monitoring System	\$ 8,000									\$ 10,134		\$ 10,134
R		Chlorine Dosing System	\$ 2,000	\$ 2,000										\$ 2,000
R		Ultrasonic Probe	\$ 1,500	\$ 1,500							\$ 1,845			\$ 3,345
R		Hach DR300 Pocket Colorimeters (2)	\$ 1,000			\$ 1,061			\$ 1,159			\$ 1,267		\$ 3,487
R		4" Gate Valves (4)	\$ 10,000											\$ 0
R		6" Gate Valves (5)	\$ 13,000											\$ 0
R		Fire Hydrants (4)	\$ 14,000											\$ 0
R		2" Gate Valves In Vault (2)	\$ 4,000			\$ 4,244								\$ 4,244
R		Water Sampling Stations (2)	\$ 6,000											\$ 0
R		Lot Meters (29)	\$ 5,000										\$ 6,524	\$ 6,524
	M	3" PRV In Vault	\$ 500			\$ 530					\$ 615			\$ 1,145
	M	4" PRV Spur Road	\$ 500			\$ 530					\$ 615			\$ 1,145
	M	4" PRV Southview Lane	\$ 500			\$ 530					\$ 615			\$ 1,145
R		Fire Road Standpipe Demolition (3)	\$ 3,000	\$ 3,000										\$ 3,000

Reserve Expenses 2023 to 2032

Replace	Maintain	Reserve Fund Withdrawals	Original Cost	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	Total
	M	Fire Road Standpipe Maintenance (1)	\$ 500	\$ 500										\$ 500
	M	Well Pump House #1 (near gate)	\$ 2,000										\$ 2,610	\$ 2,610
R		Grundfos SP10-25 Well #3 Pump	\$ 6,500									\$ 8,234		\$ 8,234
R		Surge Protector	\$ 500		\$ 515			\$ 563			\$ 615			\$ 1,693
R		Well Pump Yaskawa 56 amp Controller	\$ 2,200									\$ 2,787		\$ 2,787
	M	Security -- Cameras (2) & Beam	\$ 2,500					\$ 2,814					\$ 3,262	\$ 6,076
	M	Well Pump Building #3 (in quarry)	\$ 3,000										\$ 3,914	\$ 3,914
R		Reservoir Demolition	\$ 10,000											\$ 0
R		Reservoir Replacement (Tank #1)	\$ 100,000						\$ 115,927					\$ 115,927
R		Reservoir Replacement (Tank #2)	\$ 100,000											\$ 0
Total Reserve Expenses				\$ 8,500	\$ 515	\$ 7,956	\$ 0	\$ 11,256	\$ 117,086	\$ 4,179	\$ 4,305	\$ 22,422	\$ 22,834	\$ 199,053

Years 2033 to 2042

Income Years 2033 to 2042

Estimated Incomes	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
Maintenance Assessments Including Sched Increases	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 203,742
Interest Income Reserve Balance	\$ 6,657	\$ 7,562	\$ 8,576	\$ 9,600	\$ 10,717	\$ 11,500	\$ 12,629	\$ 13,859	\$ 14,567	\$ 8,336	\$ 104,003
Other Annual Income											\$ 0
Special Assessments									\$ 50,000		\$ 50,000
Loans											
Total Income	\$ 27,032	\$ 27,936	\$ 28,950	\$ 29,974	\$ 31,091	\$ 31,875	\$ 33,003	\$ 34,233	\$ 84,941	\$ 28,710	\$ 357,745

Expenses Years 2033 to 2042

Operating and Loan Expenses	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
Estimated Operating Expenses											
Estimated Annual Loan Payments											

Special Projects	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
------------------	------	------	------	------	------	------	------	------	------	------	-------

Estimated Tax Liability	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
Tax Liability not Included in Analysis											

Totals	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
Total Operating Expenses											
Special Projects											
Total Reserve Fund Expenses	\$ 3,360	\$ 1,384	\$ 2,139	\$ 734	\$ 10,588	\$ 2,337	\$ 802	\$ 15,701	\$ 248,043	\$ 31,565	\$ 316,653

Reserve Fund Years 2033 to 2042

Description	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042
Start of Year Fully Funded Reserve	\$ 227,951	\$ 243,377	\$ 261,663	\$ 280,092	\$ 300,904	\$ 312,586	\$ 333,524	\$ 357,090	\$ 349,423	\$ 136,926
Start of Year Reserve Fund Balance	\$ 174,279	\$ 197,951	\$ 224,502	\$ 251,314	\$ 280,554	\$ 301,057	\$ 330,595	\$ 362,796	\$ 381,328	\$ 218,226
Percent Funded at Start of Year	76%	81%	86%	90%	93%	96%	99%	102%	109%	159%
Annual Reserve Fund Contributions	\$ 27,032	\$ 27,936	\$ 28,950	\$ 29,974	\$ 31,091	\$ 31,875	\$ 33,003	\$ 34,233	\$ 84,941	\$ 28,710
Net Reserve Withdrawals	-\$ 3,360	-\$ 1,384	-\$ 2,139	-\$ 734	-\$ 10,588	-\$ 2,337	-\$ 802	-\$ 15,701	-\$ 248,043	-\$ 31,565
EOY Reserve Fund Balance	\$ 197,951	\$ 224,502	\$ 251,314	\$ 280,554	\$ 301,057	\$ 330,595	\$ 362,796	\$ 381,328	\$ 218,226	\$ 215,371

Reserve Expenses 2033 to 2042

Replace	Maintain	Reserve Fund Withdrawals	Original Cost	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
R		Reservoir Fence	\$ 3,500											\$ 0
	M	Security -- Camera & Antenna	\$ 2,000					\$ 3,025					\$ 3,507	\$ 6,532
R		Flow Meter 1 1/2", Totalizing	\$ 1,500						\$ 2,337					\$ 2,337
R		Flow Meter, Well	\$ 1,000								\$ 1,653			\$ 1,653
R		Booster Sys/VFD Const. Pres. Sys.	\$ 5,000										\$ 8,768	\$ 8,768
	M	Booster Building #2 by Reservoir	\$ 3,000										\$ 5,261	\$ 5,261
	M	Electric Boxes in Booster Building	\$ 2,500									\$ 4,256		\$ 4,256
R		Telemetry Monitoring System	\$ 8,000									\$ 13,619		\$ 13,619
R		Chlorine Dosing System	\$ 2,000	\$ 2,688										\$ 2,688
R		Ultrasonic Probe	\$ 1,500					\$ 2,269						\$ 2,269
R		Hach DR300 Pocket Colorimeters (2)	\$ 1,000		\$ 1,384			\$ 1,513			\$ 1,653			\$ 4,550
R		4" Gate Valves (4)	\$ 10,000									\$ 17,024		\$ 17,024
R		6" Gate Valves (5)	\$ 13,000									\$ 22,132		\$ 22,132
R		Fire Hydrants (4)	\$ 14,000											\$ 0
R		2" Gate Valves In Vault (2)	\$ 4,000											\$ 0
R		Water Sampling Stations (2)	\$ 6,000								\$ 9,917			\$ 9,917
R		Lot Meters (29)	\$ 5,000											\$ 0
	M	3" PRV In Vault	\$ 500			\$ 713					\$ 826			\$ 1,539
	M	4" PRV Spur Road	\$ 500			\$ 713					\$ 826			\$ 1,539
	M	4" PRV Southview Lane	\$ 500			\$ 713					\$ 826			\$ 1,539
R		Fire Road Standpipe Demolition (3)	\$ 3,000											\$ 0

Reserve Expenses 2033 to 2042

Replace	Maintain	Reserve Fund Withdrawals	Original Cost	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	Total
	M	Fire Road Standpipe Maintenance (1)	\$ 500											\$ 0
	M	Well Pump House #1 (near gate)	\$ 2,000										\$ 3,507	\$ 3,507
R		Grundfos SP10-25 Well #3 Pump	\$ 6,500											\$ 0
R		Surge Protector	\$ 500	\$ 672			\$ 734			\$ 802			\$ 877	\$ 3,085
R		Well Pump Yaskawa 56 amp Controller	\$ 2,200									\$ 3,745		\$ 3,745
	M	Security -- Cameras (2) & Beam	\$ 2,500					\$ 3,781					\$ 4,384	\$ 8,165
	M	Well Pump Building #3 (in quarry)	\$ 3,000										\$ 5,261	\$ 5,261
R		Reservoir Demolition	\$ 10,000									\$ 17,024		\$ 17,024
R		Reservoir Replacement (Tank #1)	\$ 100,000											\$ 0
R		Reservoir Replacement (Tank #2)	\$ 100,000									\$ 170,243		\$ 170,243
Total Reserve Expenses				\$ 3,360	\$ 1,384	\$ 2,139	\$ 734	\$ 10,588	\$ 2,337	\$ 802	\$ 15,701	\$ 248,043	\$ 31,565	\$ 316,653

Years 2043 to 2053

Income Years 2043 to 2053

Estimated Incomes	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
Maintenance Assessments Including Sched Increases	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 20,374	\$ 224,116	\$ 621,587
Interest Income Reserve Balance	\$ 8,227	\$ 9,078	\$ 10,097	\$ 11,114	\$ 12,242	\$ 13,138	\$ 14,379	\$ 15,624	\$ 16,871	\$ 15,436	\$ 15,139	\$ 141,346	\$ 295,807
Other Annual Income												\$ 0	\$ 0
Special Assessments													\$ 100,000
Loans													
Total Income	\$ 28,601	\$ 29,452	\$ 30,471	\$ 31,489	\$ 32,616	\$ 33,513	\$ 34,753	\$ 35,998	\$ 37,246	\$ 35,811	\$ 35,513	\$ 365,462	\$ 1,017,394

Expenses Years 2043 to 2053

Operating and Loan Expenses	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
Estimated Operating Expenses													
Estimated Annual Loan Payments													
Special Projects	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
Estimated Tax Liability	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
Tax Liability not Included in Analysis													
Total Operating Expenses	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
Special Projects													
Total Reserve Fund Expenses	\$ 6,321	\$ 2,790	\$ 3,832	\$ 1,974	\$ 9,148	\$ 1,047	\$ 2,157	\$ 3,333	\$ 74,815	\$ 43,597	\$ 8,496	\$ 157,510	\$ 673,216

Reserve Fund Years 2043 to 2053

Description	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053
Start of Year Fully Funded Reserve	\$ 123,943	\$ 137,032	\$ 154,628	\$ 172,168	\$ 192,655	\$ 206,889	\$ 230,429	\$ 254,084	\$ 277,808	\$ 229,201	\$ 211,895
Start of Year Reserve Fund Balance	\$ 215,371	\$ 237,652	\$ 264,314	\$ 290,953	\$ 320,468	\$ 343,936	\$ 376,401	\$ 408,997	\$ 441,662	\$ 404,093	\$ 396,306
Percent Funded at Start of Year	174%	173%	171%	169%	166%	166%	163%	161%	159%	176%	187%
Annual Reserve Fund Contributions	\$ 28,601	\$ 29,452	\$ 30,471	\$ 31,489	\$ 32,616	\$ 33,513	\$ 34,753	\$ 35,998	\$ 37,246	\$ 35,811	\$ 35,513
Net Reserve Withdrawals	-\$ 6,321	-\$ 2,790	-\$ 3,832	-\$ 1,974	-\$ 9,148	-\$ 1,047	-\$ 2,157	-\$ 3,333	-\$ 74,815	-\$ 43,597	-\$ 8,496
EOY Reserve Fund Balance	\$ 237,652	\$ 264,314	\$ 290,953	\$ 320,468	\$ 343,936	\$ 376,401	\$ 408,997	\$ 441,662	\$ 404,093	\$ 396,306	\$ 423,323

Reserve Expenses 2043 to 2053

Replace	Maintain	Reserve Fund Withdrawals	Original Cost	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
R		Reservoir Fence	\$ 3,500												\$ 0	\$ 4,179
	M	Security -- Camera & Antenna	\$ 2,000					\$ 4,066					\$ 4,713		\$ 8,779	\$ 20,172
R		Flow Meter 1 1/2", Totalizing	\$ 1,500											\$ 3,641	\$ 3,641	\$ 7,478
R		Flow Meter, Well	\$ 1,000												\$ 0	\$ 2,714
R		Booster Sys/VFD Const. Pres. Sys.	\$ 5,000												\$ 0	\$ 14,396
	M	Booster Building #2 by Reservoir	\$ 3,000										\$ 7,070		\$ 7,070	\$ 16,245
	M	Electric Boxes in Booster Building	\$ 2,500												\$ 0	\$ 4,256
R		Telemetry Monitoring System	\$ 8,000									\$ 18,303			\$ 18,303	\$ 42,056
R		Chlorine Dosing System	\$ 2,000	\$ 3,612										\$ 4,855	\$ 8,467	\$ 13,155
R		Ultrasonic Probe	\$ 1,500		\$ 2,790							\$ 3,432			\$ 6,222	\$ 11,836
R		Hach DR300 Pocket Colorimeters (2)	\$ 1,000	\$ 1,806			\$ 1,974			\$ 2,157			\$ 2,357		\$ 8,294	\$ 16,331
R		4" Gate Valves (4)	\$ 10,000												\$ 0	\$ 17,024
R		6" Gate Valves (5)	\$ 13,000												\$ 0	\$ 22,132
R		Fire Hydrants (4)	\$ 14,000									\$ 32,031			\$ 32,031	\$ 32,031
R		2" Gate Valves In Vault (2)	\$ 4,000												\$ 0	\$ 4,244
R		Water Sampling Stations (2)	\$ 6,000												\$ 0	\$ 9,917
R		Lot Meters (29)	\$ 5,000									\$ 11,783			\$ 11,783	\$ 18,307
	M	3" PRV In Vault	\$ 500			\$ 958					\$ 1,111				\$ 2,069	\$ 4,753
	M	4" PRV Spur Road	\$ 500			\$ 958					\$ 1,111				\$ 2,069	\$ 4,753
	M	4" PRV Southview Lane	\$ 500			\$ 958					\$ 1,111				\$ 2,069	\$ 4,753

Reserve Expenses 2043 to 2053

Replace	Maintain	Reserve Fund Withdrawals	Original Cost	2043	2044	2045	2046	2047	2048	2049	2050	2051	2052	2053	Total	Total All Years
R		Fire Road Standpipe Demolition (3)	\$ 3,000												\$ 0	\$ 3,000
	M	Fire Road Standpipe Maintenance (1)	\$ 500	\$ 903											\$ 903	\$ 1,403
	M	Well Pump House #1 (near gate)	\$ 2,000												\$ 4,713	\$ 10,830
R		Grundfos SP10-25 Well #3 Pump	\$ 6,500												\$ 14,872	\$ 23,106
R		Surge Protector	\$ 500												\$ 958	\$ 7,927
R		Well Pump Yaskawa 56 amp Controller	\$ 2,200												\$ 1,047	\$ 11,565
	M	Security -- Cameras (2) & Beam	\$ 2,500												\$ 5,033	\$ 25,214
	M	Well Pump Building #3 (in quarry)	\$ 3,000												\$ 5,891	\$ 16,245
R		Reservoir Demolition	\$ 10,000												\$ 7,070	\$ 17,024
R		Reservoir Replacement (Tank #1)	\$ 100,000												\$ 0	\$ 115,927
R		Reservoir Replacement (Tank #2)	\$ 100,000												\$ 0	\$ 170,243
Total Reserve Expenses				\$ 6,321	\$ 2,790	\$ 3,832	\$ 1,974	\$ 9,148	\$ 1,047	\$ 2,157	\$ 3,333	\$ 74,815	\$ 43,597	\$ 8,496	\$ 157,510	\$ 673,216

Component Details

Note: If the Last Service Year is greater than the start year entered for analysis (2023), this indicates that the item is a future scheduled item. In which case the Last Service Year will be the same as the Next Service Year.

Item 1 - Booster Station: Reservoir Fence: R

Component Qty	1	Estimated Current Cost	\$ 3,500
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 4,179
Estimated Useful Life (yrs)	40	Useful Life Adjustment (yrs)	
Service Year	1989		
Next Service Year	2029		
Remaining Useful Life (yrs)	6		



Item 2 - Booster Station: Security -- Camera & Antenna: M

Component Qty	1	Estimated Current Cost	\$ 2,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 2,251
Estimated Useful Life (yrs)	5	Useful Life Adjustment (yrs)	
Service Year	2022		
Next Service Year	2027		
Remaining Useful Life (yrs)	4		



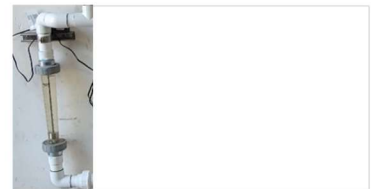
Item 3 - Booster Station: Flow Meter 1 1/2", Totalizing: R

Component Qty	1	Estimated Current Cost	\$ 1,500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 2,337
Estimated Useful Life (yrs)	15	Useful Life Adjustment (yrs)	
Service Year	2023		
Next Service Year	2038		
Remaining Useful Life (yrs)	15		



Item 4 - Booster Station: Flow Meter, Well: R

Component Qty	1	Estimated Current Cost	\$ 1,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 1,061
Estimated Useful Life (yrs)	15	Useful Life Adjustment (yrs)	
Service Year	2010		
Next Service Year	2025		
Remaining Useful Life (yrs)	2		



Item 5 - Booster Station: Booster Sys/VFD Const. Pres. Sys.: R

Component Qty	1	Estimated Current Cost	\$ 5,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 5,628
Estimated Useful Life (yrs)	15	Useful Life Adjustment (yrs)	
Service Year	2012		
Next Service Year	2027		
Remaining Useful Life (yrs)	4		



Item 6 - Booster Station: Booster Building #2 by Reservoir : M

Component Qty	1	Estimated Current Cost	\$ 3,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 3,914
Estimated Useful Life (yrs)	10	Useful Life Adjustment (yrs)	
Service Year	2022		
Next Service Year	2032		
Remaining Useful Life (yrs)	9		



Item 7 - Booster Station: Electric Boxes in Booster Building: M

Component Qty	1	Estimated Current Cost	\$ 2,500
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 4,256
Estimated Useful Life (yrs)	60	Useful Life Adjustment (yrs)	
Service Year	1981		
Next Service Year	2041		
Remaining Useful Life (yrs)	18		



Item 8 - Booster Station: Telemetry Monitoring System: R

Component Qty	1	Estimated Current Cost	\$ 8,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 10,134
Estimated Useful Life (yrs)	10	Useful Life Adjustment (yrs)	
Service Year	2021		
Next Service Year	2031		
Remaining Useful Life (yrs)	8		



Item 9 - Booster Station: Chlorine Dosing System: R

Component Qty	1	Estimated Current Cost	\$ 2,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 2,688
Estimated Useful Life (yrs)	10	Useful Life Adjustment (yrs)	
Service Year	2023		
Next Service Year	2033		
Remaining Useful Life (yrs)	10		



Item 10 - Monitoring Equip: Ultrasonic Probe: R

Component Qty	1	Estimated Current Cost	\$ 1,500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 1,845
Estimated Useful Life (yrs)	7	Useful Life Adjustment (yrs)	
Service Year	2023		
Next Service Year	2030		
Remaining Useful Life (yrs)	7		



Item 11 - Monitoring Equip: Hach DR300 Pocket Colorimeters (2): R

Component Qty	2	Estimated Current Cost	\$ 1,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 1,061
Estimated Useful Life (yrs)	3	Useful Life Adjustment (yrs)	
Service Year	2022		
Next Service Year	2025		
Remaining Useful Life (yrs)	2		



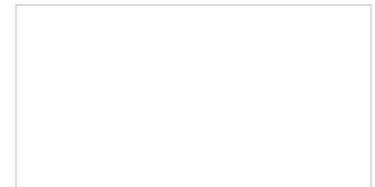
Item 12 - Piping System: Water Pipelines System: M

Component Qty	1	Estimated Current Cost	\$ 20,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 111,068
Estimated Useful Life (yrs)	100	Useful Life Adjustment (yrs)	
Service Year	1981		
Next Service Year	2081		
Remaining Useful Life (yrs)	58		



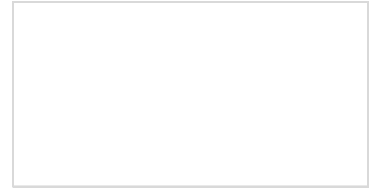
Item 13 - Piping System: 4" Gate Valves (4): R

Component Qty	4	Estimated Current Cost	\$ 10,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 17,024
Estimated Useful Life (yrs)	60	Useful Life Adjustment (yrs)	
Service Year	1981		
Next Service Year	2041		
Remaining Useful Life (yrs)	18		



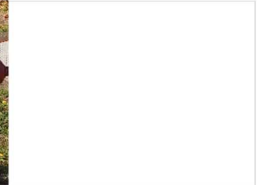
Item 14 - Piping System: 6" Gate Valves (5): R

Component Qty	5	Estimated Current Cost	\$ 13,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 22,132
Estimated Useful Life (yrs)	60	Useful Life Adjustment (yrs)	
Service Year	1981		
Next Service Year	2041		
Remaining Useful Life (yrs)	18		



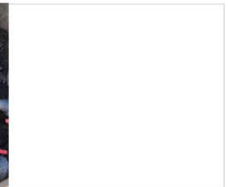
Item 15 - Piping System: Fire Hydrants (4): R

Component Qty	4	Estimated Current Cost	\$ 14,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 32,031
Estimated Useful Life (yrs)	70	Useful Life Adjustment (yrs)	
Service Year	1981		
Next Service Year	2051		
Remaining Useful Life (yrs)	28		



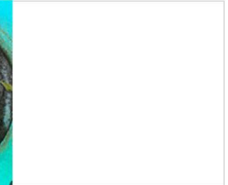
Item 16 - Piping System: 3" PRV In Vault: R

Component Qty	1	Estimated Current Cost	\$ 2,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 19,476
Estimated Useful Life (yrs)	80	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2100		
Remaining Useful Life (yrs)	77		



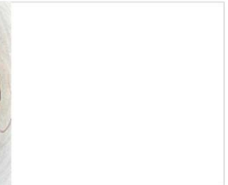
Item 17 - Piping System: 4" PRV Spur Road: R

Component Qty	1	Estimated Current Cost	\$ 2,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 19,476
Estimated Useful Life (yrs)	80	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2100		
Remaining Useful Life (yrs)	77		



Item 18 - Piping System: 4" PRV Southview Lane: R

Component Qty	1	Estimated Current Cost	\$ 2,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 19,476
Estimated Useful Life (yrs)	80	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2100		
Remaining Useful Life (yrs)	77		



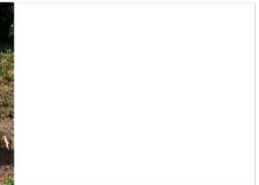
Item 19 - Piping System: 2" Gate Valves In Vault (2): R

Component Qty	2	Estimated Current Cost	\$ 4,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 4,244
Estimated Useful Life (yrs)	35	Useful Life Adjustment (yrs)	+ 2 years
Service Year	1981		
Next Service Year	2025		
Remaining Useful Life (yrs)	2		



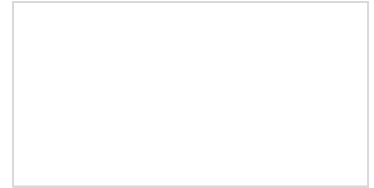
Item 20 - Piping System: Water Sampling Stations (2): R

Component Qty	2	Estimated Current Cost	\$ 6,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 9,917
Estimated Useful Life (yrs)	20	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2040		
Remaining Useful Life (yrs)	17		



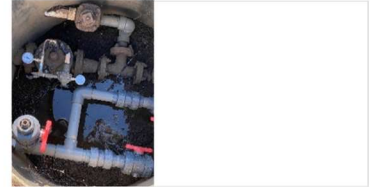
Item 21 - Piping System: Lot Meters (29): R

Component Qty	29	Estimated Current Cost	\$ 5,000
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 6,524
Estimated Useful Life (yrs)	20	Useful Life Adjustment (yrs)	
Service Year	2012		
Next Service Year	2032		
Remaining Useful Life (yrs)	9		



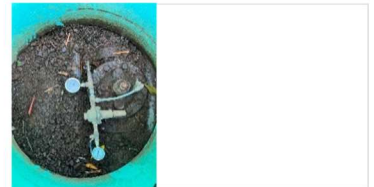
Item 22 - Piping System: 3" PRV In Vault: M

Component Qty	1	Estimated Current Cost	\$ 500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 530
Estimated Useful Life (yrs)	5	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2025		
Remaining Useful Life (yrs)	2		



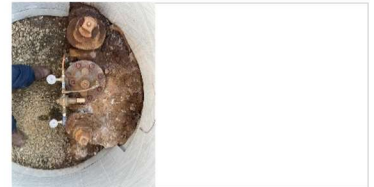
Item 23 - Piping System: 4" PRV Spur Road: M

Component Qty	1	Estimated Current Cost	\$ 500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 530
Estimated Useful Life (yrs)	5	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2025		
Remaining Useful Life (yrs)	2		



Item 24 - Piping System: 4" PRV Southview Lane: M

Component Qty	1	Estimated Current Cost	\$ 500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 530
Estimated Useful Life (yrs)	5	Useful Life Adjustment (yrs)	
Service Year	2020		
Next Service Year	2025		
Remaining Useful Life (yrs)	2		



Item 25 - Piping System: Fire Road Standpipe Demolition (3): R

Component Qty	1	Estimated Current Cost	\$ 3,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 57,656
Estimated Useful Life (yrs)	100	Useful Life Adjustment (yrs)	
Service Year	2023		
Next Service Year	2123		
Remaining Useful Life (yrs)	100		



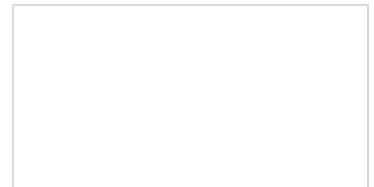
Item 26 - Piping System: Fire Road Standpipe Maintenance (1): M

Component Qty	1	Estimated Current Cost	\$ 500
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 903
Estimated Useful Life (yrs)	20	Useful Life Adjustment (yrs)	
Service Year	2023		
Next Service Year	2043		
Remaining Useful Life (yrs)	20		



Item 27 - Pump House/Well #1: Well Pump House #1 (near gate): M

Component Qty	1	Estimated Current Cost	\$ 2,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 2,610
Estimated Useful Life (yrs)	10	Useful Life Adjustment (yrs)	
Service Year	2022		
Next Service Year	2032		
Remaining Useful Life (yrs)	9		



Item 28 - Pump House/Well #3: Grundfos SP10-25 Well #3 Pump: R

Component Qty	1	Estimated Current Cost	\$ 6,500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 8,234
Estimated Useful Life (yrs)	20	Useful Life Adjustment (yrs)	
Service Year	2011		
Next Service Year	2031		
Remaining Useful Life (yrs)	8		



Item 29 - Pump House/Well #3: Well Pump Electrical System: R

Component Qty	1	Estimated Current Cost	\$ 4,300
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 11,405
Estimated Useful Life (yrs)	40	Useful Life Adjustment (yrs)	
Service Year	2016		
Next Service Year	2056		
Remaining Useful Life (yrs)	33		



Item 30 - Pump House/Well #3: Surge Protector: R

Component Qty	1	Estimated Current Cost	\$ 500
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 515
Estimated Useful Life (yrs)	3	Useful Life Adjustment (yrs)	
Service Year	2021		
Next Service Year	2024		
Remaining Useful Life (yrs)	1		



Item 31 - Pump House/Well #3: Well Pump Yaskawa 56 amp Controller: R

Component Qty	1	Estimated Current Cost	\$ 2,200
Unit of Measure	each	Estimated Future Cost (at next svc yr)	\$ 2,787
Estimated Useful Life (yrs)	10	Useful Life Adjustment (yrs)	
Service Year	2021		
Next Service Year	2031		
Remaining Useful Life (yrs)	8		



Item 32 - Pump House/Well #3: Security -- Cameras (2) & Beam: M

Component Qty	1	Estimated Current Cost	\$ 2,500
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 2,814
Estimated Useful Life (yrs)	5	Useful Life Adjustment (yrs)	
Service Year	2022		
Next Service Year	2027		
Remaining Useful Life (yrs)	4		



Item 33 - Pump House/Well #3: Well Pump Building #3 (in quarry): M

Component Qty	1	Estimated Current Cost	\$ 3,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 3,914
Estimated Useful Life (yrs)	10	Useful Life Adjustment (yrs)	
Service Year	2022		
Next Service Year	2032		
Remaining Useful Life (yrs)	9		



Item 34 - Reservoir: Reservoir Demolition: R

Component Qty	1	Estimated Current Cost	\$ 10,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 17,024
Estimated Useful Life (yrs)	60	Useful Life Adjustment (yrs)	
Service Year	1981		
Next Service Year	2041		
Remaining Useful Life (yrs)	18		



Item 35 - Reservoir: Reservoir Replacement (Tank #1): R

Component Qty	1	Estimated Current Cost	\$ 100,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 115,927
Estimated Useful Life (yrs)	100	Useful Life Adjustment (yrs)	
Service Year	2028		
Next Service Year	2028		
Remaining Useful Life (yrs)	5		

Item 36 - Reservoir: Reservoir Replacement (Tank #2): R

Component Qty	1	Estimated Current Cost	\$ 100,000
Unit of Measure	lump sum	Estimated Future Cost (at next svc yr)	\$ 170,243
Estimated Useful Life (yrs)	100	Useful Life Adjustment (yrs)	
Service Year	2041		
Next Service Year	2041		
Remaining Useful Life (yrs)	18		

Appendix

Analysis Class

Three classes of reserve studies are defined:

- **Class I:** A comprehensive study
 - Component Inventory
 - Condition Assessments
 - Life and Valuation Estimates
 - Funding Status Statement
 - Develop a Funding Plan
- **Class II:** An updated study based that includes a site inspection
 - Verifies Component Inventory from Previous Study
 - Condition Assessments
 - Life and Valuation Estimates
 - Funding Status Statement
 - Develops Funding Plan
- **Class III:** An updated study that does not include a site inspection.
 - Life and Valuation Estimates
 - Funding Status Statement
 - Develop a Funding Plan

Terms and Definitions

A reserve study contains a number of industry-related terms and phrases. The following are definitions for the most used terms.

- **Annual Reserve Contribution** The amount that should be allocated to each component using the recommended funding plan.
- **Annual Reserve Fund Contribution** Amount that should be saved during current year for future component replacements. Provided for each component and summed for all components.
- **Baseline Funding** Establishing a reserve funding goal of keeping the reserve cash balance above zero. See Funding Models.
- **Cash Flow Method (aka, Component Method)** A method of developing 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 anticipated schedule of reserve expenses until the desired funding goal is achieved.
- **Component** Also referred to as an “Asset.” Individual line items in the Reserve Study developed or updated in the physical analysis. These elements form the building blocks for the Reserve Study. Components typically are:
 1. Association responsibility
 2. Have limited useful life expectancies
 3. Have predictable remaining life expectancies
 4. Are above a minimum threshold cost
 5. Required by local codes.
- **Component Inventory** The task of selecting and quantifying reserve components. This task can be accomplished through on-site visual observations, review of association design and organizational documents, review of established association precedents and discussion with appropriate association representative(s) of the association or cooperative.
- **Contingency** An allowance for miscellaneous components, unpredictable expenses and/or costs that were higher than expected.
- **Deficit** An actual (or projected reserve balance), which is less than the fully funded balance.
- **Full Funded Balance Percent** The reserve balance expressed as a percentage of the total fully funded balance of all components.
- **Full Funding** Setting a reserve funding goal of attaining and maintaining reserves at or near 100% funded.

- **Fully Funded Balance** The Fully Funded Balance as used in reserve studies is an indicator against which the actual (or projected) reserve balance can be compared. The reserve balance that is in direct proportion to the fraction of life “used up” of the current repair or replacement cost of a reserve component. This number is calculated for each component, and then summed together for an association total and represents the total depreciation over the life of the components. In other words, the amount that should have been saved during the life of the components. Without considering the effect of inflation, the calculation for FFB is:

$$FFB = \frac{\text{Current Cost} \times \text{Effective Age}}{\text{Useful Life}}$$

A more correct term that is often used is to refer to this as “100% Funded”.
- **Fund Status** The status of the reserve fund as compared to an established benchmark, such as percent funded.
- **Funding Methods** Two methods of funding are Cash Flow and Straight Line.
 - Cash Flow: The reserve fund is considered one large pool of money. Expenses for any individual component are withdrawn from the single, shared reserve fund.
 - Straight Line: A simple calculation that calculates a reserve contribution based on each individual component. Expenses for any individual component are withdrawn only from that component’s fund. Funds are not shared across multiple components.
- **Funding Models** The four funding models are:
 - Fully Funding Model: Setting a reserve funding goal of keeping the reserves at or near 100% funded. This is same as Threshold Funding if the threshold is set at 100%.
 - Threshold Funding Model: Setting a Reserve funding goal of keeping the Reserve balance above some threshold, generally less than the Fully Funding Strategy.
 - Baseline Funding Model: Setting a reserve funding goal of keeping the reserve cash balance at the end of each year in the overall reserve funding projection at or above \$ 0.
 - Statutory Funding Model: Based on local statutes where associations set aside specific cash amounts, or specific thresholds are set, as required by statutes.
- **Funding Plan** An association’s plan to provide income to a reserve fund to offset anticipated expenditures from that fund.

- **Inflation**

Inflation is the decline of purchasing power of a given currency over time. A quantitative estimate of the rate at which the decline in purchasing power occurs can be reflected in the increase of an average price level of a basket of selected goods and services in an economy over some period. The rise in the general level of prices, often expressed as a percentage, means that a unit of currency effectively buys less than it did in prior periods.

Two types of inflation are used in this analysis:

1. Reserve Item Expense Inflation: Sometimes referred to as CAPEX (Capital Expenses) inflation. CAPEX inflation generally runs higher than OPEX inflation and is commonly tied to the Construction Cost Index (CCI). This index is published by various major construction firms and is a good measure for long-term construction and capital equipment costs. Reserve Item expenses tend to be capital equipment related.
2. Operating Expense Inflation: Generally referred to as OPEX inflation. OPEX inflation is commonly tied to the Consumer Price Index (CPI) although in reserve studies this value will generally be slightly lower than the CPI as some components which make up the CPI are not typically part of what an HOA or community association will experience. E.g., the price of food. Operating expenses tend to be service related.

- **Percent Funded**

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

Percent funding is used as a measure of the “health” of the reserve fund. As one of several key performance indicators, the percent funding must be viewed considering other indicators, such as available funds to meet expenses.

The measures of strength for percent funded of the FFB are:

- 0% – 30% Funded: Generally considered to be a “weak” financial position. Associations that fall into this category are subject to higher frequencies of special assessments and deferred maintenance.
- 31% – 69% Funded: Considered a “fair” financial position. Compared to the “weak” position, the likelihood of special assessments and deferred maintenance is diminished. Associations that find themselves in this position should be taking measures to strengthen their position.
- 70% – 99% Funded: This range is considered a “strong” financial position. Associations should strive to maintain their percent funded in this range.
- 100% Funded: If the association is 100% funded, theoretically they have the exact amount of funds equal to the Fully Funded Balance
- Greater than 100% Funded: If in this situation, the association has more than the Fully Funded Balance. The impact to the community is that the members annual payments are likely more than is required to meet annual expenses.

- **Projected Start-of-Year or End-of-Year Reserve Balance**

Projected reserve balance at the start of the fiscal year or end of the fiscal year. Calculated using the estimated reserve balance, contributions to reserves before year-end, and planned expenses before year-end.

- **Recommended Reserve Contribution**

Recommended amount that the association should allocate into reserves to offset future expenses.

- **Remaining Useful Life** Expected remaining useable life of component. (0-year remaining life means the component will be serviced in the upcoming fiscal year)
- **Replacement Cost** The cost of replacing, repairing, or restoring a reserve component to its original functional condition. The current replacement cost would be the cost to replace, repair, or restore the component during that particular year.
- **Replacement Year** Year that component is projected to be replaced or repaired.
- **Reserve Balance** Actual or projected funds as of a particular point in time (typically the beginning of the fiscal year) that the association has identified for use to defray the future repair or replacement of those major components that the association is obligated to maintain. Also known as “reserves,” “reserve accounts,” or “cash reserves.” In this report the reserve balance is based upon information provided and is not audited.
- **Reserve Contribution** A regular amount of money that is set aside or is a line item in the Association’s (or HOA’s) budget to add to the reserve fund to cover the depreciation expenses associated with the reserve components.
- **Reserve Study** A long-term capital budget planning tool which identifies the current status of the reserve fund and a stable and equitable funding plan to offset ongoing deterioration, resulting in sufficient funds when those anticipated major common area expenditures actually occur. A reserve study is in essence a planning tool designed to help the board anticipate, and prepare for, the property's major repair and replacement projects.
- **Special Assessment** An assessment levied on the members of an association in addition to regular assessments. Special assessments are often regulated by governing documents or local statutes.
- **Statutory Funding** Establishing a reserve funding goal of setting aside the specific minimum amount of reserves required by local statutes
- **Threshold Funding** Establishing a reserve funding goal of keeping the reserve balance above a specified dollar or percent funded amount.
- **Useful Life** Typical useable life for a component.

Funding Methodologies

Cash Flow Methodology

The Cash Flow Reserve Funding methodology is used in this analysis as it allows reserve funds to be used efficiently and evenly spreads costs among the community owners over the years.

- The reserve fund is considered one large pool of money.
- Contributions are established by testing and retesting different contribution rates until the desired funding objective is achieved.
- Encourages the use of threshold levels to test various funding strategies with respect to funding requirements.
- May increase risk of underfunding and special assessments, but this is mitigated by understanding of component costs and useful life, setting reasonable threshold funding levels and careful analysis of annual cash flows
- Typically, results in a lower rate of reserve contributions as the funds can be used more efficiently; and the contributions are more evenly spread over the years.

Threshold Funding Model

The Threshold Funding strategy is employed with a threshold, or goal, of keeping the reserve balance above a specified percent funded amount. Use of this strategy requires examining the estimated annual reserve component costs against the anticipated reserve balance to assure that costs do not exceed available funds. The Threshold Funding Strategy consists of setting a reserve funding goal of keeping the reserve balance above some threshold, generally less than the Fully Funding Model.

The Threshold Funding strategy reduces the annual contribution (compared to Full Funding) for maintaining the reserve. The threshold funding strategy must be used rationally to assure that under funding does not occur in any years. It also requires careful analysis of expenses and funding over all the years. A key benefit is that it reduces the annual contribution to the reserve fund compared to Full Funding strategy.

Performance Indicators

Two key performance indicators used in this analysis are “Fully Funded Balance” and “Percent Funded”.

The Fully Funded Balance of all reserve components are individually determined and summed together. Each component’s FFB is determined for each year using the following formula:

$$FFB = \frac{\text{Current Cost} \times \text{Effective Age}}{\text{Useful Life}} \times (1 + \text{Inflation Rate})^{\text{Effective Age}}$$

$$\text{Where: } \text{Effective Age} = \text{Useful Life} - \text{Remaining Useful Life}$$

The Percent Funding for each year in the analysis is computed using the following formula:

$$\% \text{ Funded} = \frac{\text{Estimated Reserve Fund Balance}}{\text{Estimated Full Funded Balance}}$$

All future costs estimates are based on the current costs with provision for inflation. The reserve fund and contingency fund balance is assumed to earn interest at the rate provided by the association.