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Presentation Overview

- 1. What is a reserve study and what are the benefits of a reserve study?**
- 2. Conducting a reserve study. What to expect**
- 3. What are the contents of a reserve study?**
- 4. How projections for repair/replacement schedules are made.**
- 5. How costs are projected**
- 6. Planning and customization - How to utilize information in the reserve study**
- 7. Additional planning tools**
- 8. Long term use of reserve studies – hypothetical**
- 9. Selecting a reserve study provider/engineer**



What is a Reserve Study?

A Reserve Study is a long-term capital plan for a property, its infrastructure, and surrounding assets. It provides an in-depth analysis of a property's physical condition, as well as an evaluation of the financial health of the property's reserve funds.

A Reserve Study includes a detailed list of property components that are commonly owned and maintained, including component quantities, ages, conditions, and useful lives.

A Reserve Study will recommend replacement times for each capital asset, dependent upon component conditions and available funding.

Primary Benefits of a Reserve Study

Minimize the Probability of Special Assessments and Loans

Ensure that an accurate budget is in place for future projects

Streamline scheduling of capital projects

Use your reserve study to more accurately review vendor bids

Help predict future capital costs

Easily plan, schedule and coordinate repair and replacement projects

Comply with state laws and statutes

Ensure that your current reserve funds will be sufficient to fund the future inflated cost of capital projects

Additional Benefits

Compliance with ever increasing 2nd mortgage loan underwriting – Fannie Mae, Freddie Mac, VA and other programs

Prepare for borrowing money from banks if needed in the future

Improving marketability as older HOA's financial health is evaluated more critically by buyers & realtors

Deferred maintenance that leads to structural issues are being evaluated by mortgage companies now



Reserve Study Process

Property Investigation

PROPERTY INVESTIGATION

- Review declaration
- Identify property boundaries
- Create component list
- Determine responsibilities of assets



PROPERTY OVERVIEW	
Client Profile	
Client Reference Number	070402
Client Name	2000 Rockledge Dr. NW
Date of Fieldwork Inspection	January 14, 2020
Date of Report Issued	January 17, 2020
Year, Year Start and Year End	2019, 2020, 2021
Community Description	
Year of Construction	1980s
No. of Units	30
No. of Units in Use	14
Number of Units in Use	14
Number of Units in Use	14

The aerial photograph shows a residential property with a red boundary line. A blue shaded area is visible within the property, likely representing a specific feature or asset. The property is surrounded by trees and other vegetation. The text '2000 ROCKLEDGE' is visible on the left side of the property. The text '2000 ROCKLEDGE' is also visible on the right side of the property. The text '2000 ROCKLEDGE' is also visible on the bottom side of the property. The text '2000 ROCKLEDGE' is also visible on the top side of the property.

BUILDING
RESERVE

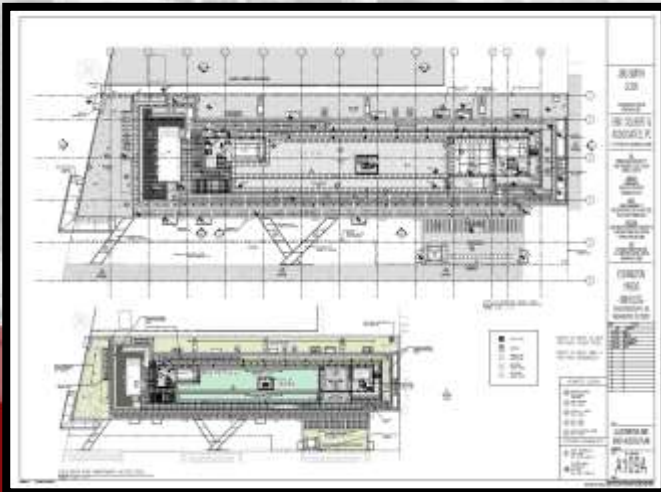
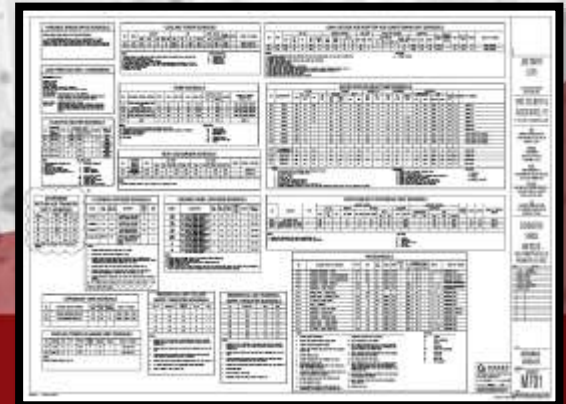
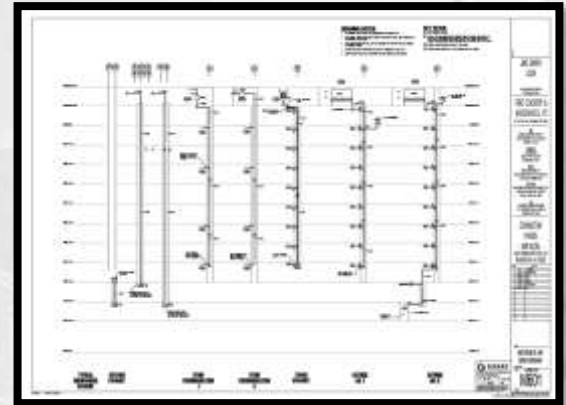
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Reserve Study Process

Property Investigation

PROPERTY INVESTIGATION

- Review architectural drawings (Floor Plans, Elevations, Material Lists, Plumbing, Mechanical, Electrical, Fire Suppression, Civil)



Reserve Study Process

Defining Component Responsibility

DEFINING COMPONENT RESPONSIBILITIES

- Association Reserve Components

Roofs, Gutters, Downspouts

Soffits & Fascia

Siding Paint & Repairs

Entry Stairs & Railings

Exterior Light Fixtures

Concrete Driveways

Concrete Sidewalks



Reserve Study Process

Defining Component Responsibility

DEFINING COMPONENT RESPONSIBILITIES

- Association Reserve Components
- Operating Expenses

Gutter & Downspout Cleaning

Landscaping & Grounds

Light Bulbs

Touch-Up Painting



Reserve Study Process

Defining Component Responsibility

DEFINING COMPONENT RESPONSIBILITIES

- Association Reserve Components
- Operating Expenses
- Long-Lived

Foundations

Building Frames



Reserve Study Process

Defining Component Responsibility

DEFINING COMPONENT RESPONSIBILITIES

- Association Reserve Components
- Operating Expenses
- Long-Lived
- Homeowner

Windows

Garage Doors

Entry Doors

Balconies



Reserve Study Process

Defining Component Responsibility

DEFINING COMPONENT RESPONSIBILITIES

- Association Reserve Components
- Operating Expenses
- Long-Lived
- Homeowner
- Others

Public Street
Utility Meters



Reserve Study Process

Defining Component Responsibility

Responsibility Matrix

Who is responsible for which assets?

What is, and what is not included in the funding plan?

RESPONSIBILITY MATRIX

<u>Component Name</u>	Association-Responsibility			Owner	Other
	Reserve	Operating	Long-Lived		
Asphalt Pavement, Crack Repair, Patch and Seal Coat	X				
Asphalt Pavement, Repaving, Full-Depth Replacement, Phased	X				
Bent Creek Court (Street Pavement, Curbs, Gutters, Catch Basins)					X
Catch Basin, Capital Repairs		X			
Chimney Exterior Components (Caps, Screens, Chases, Serving Individual Unit(s))				X	
Chimney Interior Components (Flues, etc.), Serving Individual Unit(s)				X	
Concrete Flatwork, Partial Replacement	X				
Concrete Sidewalk Along Old Plum Grove Road					X
Doors (Entry, Storm, Patio), Serving Individual Unit(s)				X	
Electrical and Plumbing Systems, Serving Individual Unit(s)				X	
Electrical Systems, Common, Capital Repairs		X			
Electrical Systems, Common, Complete Replacement			X		
Fences, Wood, Patio Dividers, Paint Finishes		X			
Fences, Wood, Patio Dividers, Replacement	X				
Fire Hydrants					X
Fireplaces, Serving Individual Unit(s)				X	
Foundations			X		
Garage Doors and Operators, Serving Individual Unit(s)				X	

Reserve Study Process

Component Condition

Component Conditions are documented (Overall & Isolated Conditions)

Hundreds of photographs

Investigative Property Research

Thorough Site Inspection



Isolated Condition:

Curling and uplift at asphalt shingle roof

Reserve Study Process

Component Condition

Component Conditions are documented (Overall & Isolated Conditions)

Hundreds of photographs

Investigative Property Research

Thorough Site Inspection



Isolated Condition:

Weak mortar joint above garage
lintel

Reserve Study Process

Component Condition

Component Conditions are documented (Overall & Isolated Conditions)

Hundreds of photographs

Investigative Property Research

Thorough Site Inspection



Overall Condition:

Varying ages of window sealant;

Adhesion failure at sealants

Reserve Study Process

Component Condition

Component Conditions are documented (Overall & Isolated Conditions)

Hundreds of photographs

Investigative Property Research

Thorough Site Inspection



Isolated Condition:

Pavement deterioration at
catch basin surround

Reserve Study Process

Component Condition

Component Conditions are documented (Overall & Isolated Conditions)

Hundreds of photographs

Investigative Property Research

Thorough Site Inspection



Overall Condition:
Fatigue cracking at
pavement observed
throughout parking lot

Reserve Study Process

Component Condition

Quantity

Age Data

Condition
Photos

Customized
Replacement
Schedule

Safety Railings at Retaining Walls, Wood, Phased			
SITE COMPONENT			
PERCENTAGE OF TOTAL FUTURE COSTS: 0.43%		Line Item: 24	
ESTIMATED UNIT QUANTITY		ESTIMATED REPLACEMENT COSTS	
Present	236 Linear Feet	Current Unit Cost:	\$10.95
Replacement Per Phase	118 Linear Feet	Current Cost Per Phase:	\$7,550
Replace in Year 30 Years	236 Linear Feet	Total Cost Over 30 Years	\$15,368
ESTIMATED AGE AND REPLACEMENT YEARS		CONDITION AND USEFUL LIFE	
Estimated Current Age in Years	In 30	Overall Current Condition	Poor
Remaining Years Until Replacement	1	Useful Life in Rolling Meadows, IL	30 to 75 Years
Estimated First Year of Replacement	2021	Full or Partial Replacement	Full
PRIORITY RATING		PRIORITY SCORE	
Priority Rating	Highly Recommended	Priority Score	118
			
Leaving wood safety rail		Wood safety rail atop retaining wall	
			
Damaged section of safety rail		Corrosion at wood post and rails	
Schedule of Replacements Costs		Engineering Narrative	
2020	\$0	Wood safety rails are located atop the linear retaining walls at the eastern portion of the site. Wood components are deteriorated, poor connection details were noted, and sections of damaged or missing rails exist. We recommend budgeting for the phased replacement of the safety rails in 2021 and 2025. Expenditure amounts reflect the installation of maintenance-free railing materials, such as aluminum or vinyl, which do not require paint finishes and will achieve longer useful lives than wood components.	
2021	\$7,254		
2022	\$1,203		
2023	\$0		
2024	\$0		
2025	\$8,133		
2026	\$0		
2027	\$0		
2028	\$0		
2029	\$0		
2030	\$0		
2031	\$0		

Costs
(present & future)

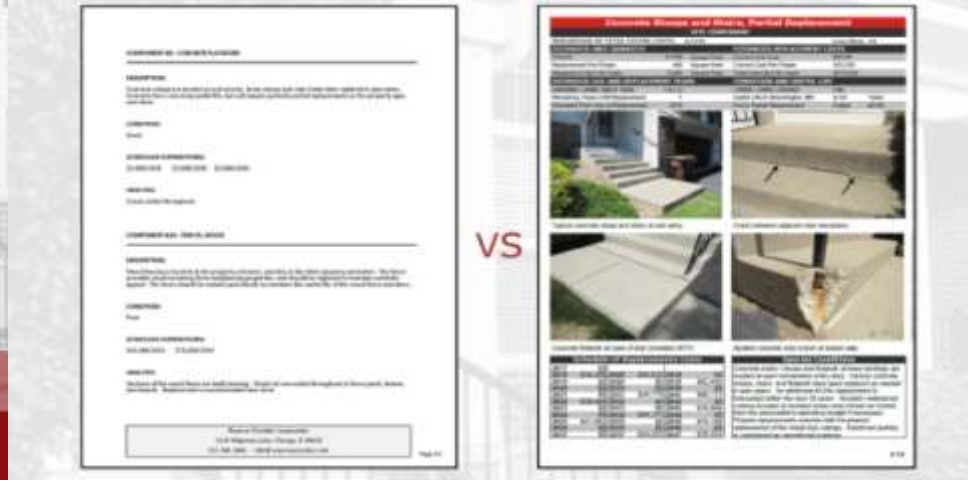
Condition
Priority

Customized
Engineer
Comments

One easy-to-read page

The Building Reserves Difference

- Easy-to-read and understand
- Photographed component conditions are included. This provides evidence for replacement schedules.
- Many reserve study providers use generic text to describe your reserve components. This leaves you guessing about the condition of components as well as the context or scope of what is being analyzed.



Reserve Study Process

Prioritization



Reserve Study Process

Prioritization

**Condition
Impact on Livability**

**Low
Priority**



**Medium
Priority**



**High
Priority**



Reserve Study Process

Prioritization

Priority Rating System considers:

- **Condition**
- **Impact on Livability**

PRIORITY CHART



Reserve Inventory		Priority Rating, Condition & Impact on Livability Assessment		
Line Item	Reserve Component Listed by Property Class	Priority	Current Condition	Impact on Livability
EXTERNAL BUILDING COMPONENTS				
1	Gutters and Downspouts, Aluminum	High Priority	Good	High Impact
2	Roofs, Asphalt Shingles	High Priority	Fair	High Impact
3	Shutters, Vinyl	Low Priority	Good	Low Impact
4	Walls, Aluminum Siding	Medium Priority	Fair	Moderately High Impact
5	Walls, Composite Hardboard Trim, Soffits, and Fascia	Medium Priority	Good	Moderately High Impact
6	Walls, Masonry at Front Facades, Inspection and Capital Repairs	Medium Priority	Fair	Moderately High Impact
SITE COMPONENTS:				
7	Asphalt Pavement, Crack Repair, Patch and Seal Coat	Medium Priority	Good	Moderate Impact
8	Asphalt Pavement, Repaving, Full-Depth Replacement, Phased	Medium Priority	Good	Moderately High Impact
9	Concrete Platewalk, Partial Replacement	High Priority	Fair	High Impact
10	Fences, Wood, Patio Dividers, Replacement	Medium Priority	Fair	Moderate Impact
11	Landscaping Improvements, 2020	Low Priority	Good	Low Impact
12	Light Poles and Fixtures, Private Drives	Medium Priority	Fair	Moderate Impact
13	Mailbox Stations	Medium Priority	Fair	Moderate Impact
14	Retaining Wall Railings, Replace with Maintenance-Free, Phased	High Priority	Poor	High Impact
15	Retaining Walls, Replace with Masonry, Phased	High Priority	Fair	High Impact
16	Signage, Monument / Directional / Address, Replacement	Low Priority	Fair	Low Impact

Reserve Study Process

Prioritization

Priority Rating System considers:

Condition
(Highest Weighted)

Impact on Livability
(Moderately Weighted)

Desirability
(Lowest Weighted)

PRIORITY SCORE

CONDITION - The state of a building system, equipment, or material with regard to its working order, deficiency level or appearance.
1 to 10 Rating: 1 = Poor Condition; 10 = Very Good Condition

IMPACT ON LIVABILITY - The degree to which a building system, equipment, or material is required in order to maintain owner safety and well-being.
1 to 10 Rating: 1 = Low Impact on Livability; 10 = High Impact on Livability

DESIRABILITY - The degree to which a building system, equipment, or material is favorable or attractive, or the degree to which intrinsic community value is added.
1 to 10 Rating: 1 = Low Desirability; 10 = High Desirability

Reserve Inventory		Life Analysis		Condition, Impact on Livability, and Desirability Ratings			Priority
Line Item	Reserve Component Listed by Property Class	Remaining Useful Life	Condition Rating	Impact on Livability Rating	Desirability Rating		Priority Score
14	Retaining Wall Railings, Replace with Maintenance-Free, Phased	1	2	9	8		116
15	Retaining Walls, Replace with Masonry, Phased	1	3	9	8		109
2	Roofs, Asphalt Shingles	11	5	10	7		98
9	Concrete Flatwork, Partial Replacement	0	5	10	7		98
4	Walls, Aluminum Siding	11	5	8	7		89
6	Walls, Masonry at Front Facades, Inspection and Capital Repairs	3	4	7	5		89
13	Mailbox Stations	5	3	5	6		87
1	Gutters and Downspouts, Aluminum	11	7	9	6		79
	Fences, Wood, Patio Dividers, Replacement	11	5	5	8		75
16	Signage, Monument / Directional / Address, Replacement	9	3	2	7		73
8	Asphalt Pavement, Repaving, Full-Depth Replacement, Phased	12	6	8	7		72
12	Light Poles and Fixtures, Private Drives	8	4	3	7		71
5	Walls, Composite Hardboard Trim, Soffits, and Fascia	30	8	8	7		68
7	Asphalt Pavement, Crack Repair, Patch and Seal Coat	0	6	5	7		67
11	Landscaping Improvements, 2020	0	6	2	8		63
3	Shutters, Vinyl	21	8	1	8		34

Reserve Study Process

Customized Replacement Plans

When should a component be replaced?

We consider:

1. Component **Condition** (*Overall and Isolated*)
2. Component **History** (*Issues, Repairs, Maintenance*)
3. Component **Age**
4. Component **Usage** (*Garage Door Operators, Exercise Equipment*)
5. Component **Priority**
6. Component **Concurrences** (*Roofs replaced with Gutters / Downspouts to use 1 vendor and save time and money*)

Reserve Study Process

Customized Replacement Plans

Accurate Component Unit Costs

Resources Utilized:

- **RSMeans** (National construction cost database, adjusted regionally)
- **Executed Vendor Bids** (from local similar properties)
- **Proposals from vendors** and ongoing relationship

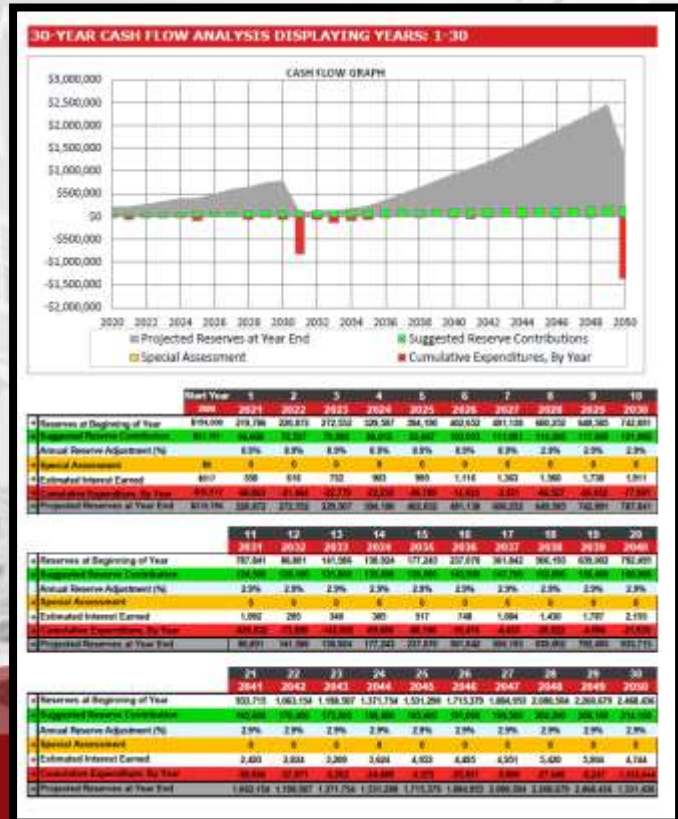


Reserve Study Process

Customized Replacement Plans

Customization Options:

- Single-year increase or phased increases over several years (“Stepped Increase”)
- Defer low-priority projects to later years with higher reserve balances
- Work within constraints of % increases outlined by Board



Reserve Study Process

Customized Replacement Plans



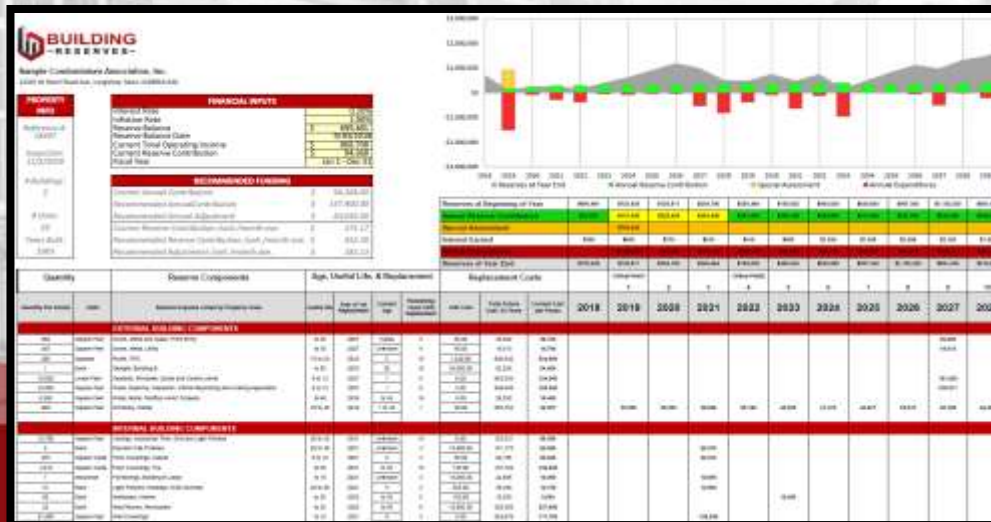
Color-coded cash flow clearly links to component data page with photographs



Reserve Study – Excel File

Free Excel File:

- Experiment with replacement times – easily change project years
- Run “what-if” scenarios to determine funding impact
- Test different funding strategies
- See impact of various interest rates



Reserve Studies: Long-Term Success

Year 0 (1987)

Reserves: \$0



\$10.49 / unit / month
(+ \$2.55/ month)

Caulking

Stucco Repairs

Chimney Caps

Stucco Replace

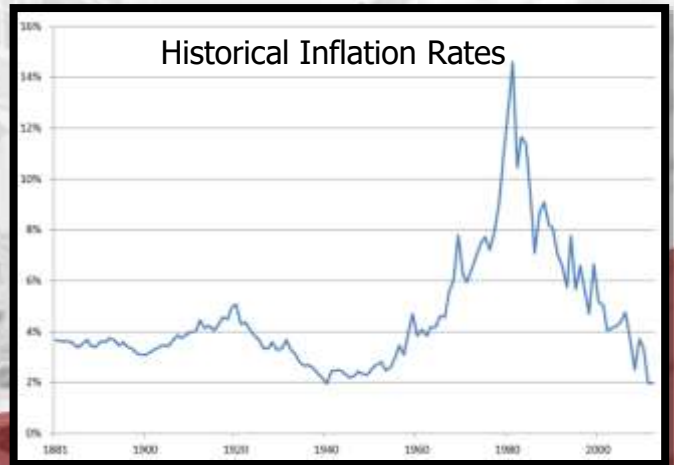
Reserve Studies: Long-Term Success

Year 3 (1990)



Reserves: \$48,541

1st Reserve Study Update: + \$0.30 / unit / month



Reserve Studies: Long-Term Success

Year 6 (1993)

Reserves: \$127,651

**2nd Reserve Study Update:
+ \$0.42 / unit / month**



Caulking & Sealants

EXTERNAL BUILDING COMPONENT

PERCENTAGE OF TOTAL FUTURE COSTS: \$5.43% Line Item: 2

ESTIMATED QUANTITY		ESTIMATED REPLACEMENT COSTS	
Project	5,100 Linear Feet	Contractor Cost	\$8,580
Replacement Per Phase	5,100 Linear Feet	Contract Per Phase	\$1,663
Replacement Total 10 Years	5,100 Linear Feet	Total Cost Next 10 Years	\$16,243

ESTIMATED AGE AND REPLACEMENT YEARS		CONDITION AND USEFUL LIFE	
Replacement Current Age in Years	8	Current Condition	Fair
Remaining Years Until in Years	8	Useful Life in 0	8 to 12 Years
Replacement Type	Full	Full or Partial Replacement	Full

Fair crack joint at chimney cap

Fair crack joint at chimney cap

Cracked sealant at window perimeter

Cracked sealant at window perimeter

Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
1993	\$0																			
1994	\$0																			
1995	\$30,420																			
1996	\$0																			
1997	\$0																			
1998	\$0																			
1999	\$0																			
2000	\$0																			
2001	\$0																			
2002	\$0																			
2003	\$40,750																			

Special Conditions

Sealants are located at the top perimeters of stucco chimney chases (near caps) as well as at window and door perimeters. Sealants are in fair overall condition at 8 years of age, with notable cracking and separation noted throughout the property. Removal of existing caulk and installation of new sealant is recommended every 8 years to ensure a weather-tight building facade.

Reserve Studies: Long-Term Success

Year 25 (2012)

Reserves: \$592,459

CAULKING & SEALANTS			
ESTIMATED BILLED COMPONENT			
ESTIMATED NO. OF HOURS AT THIS COST CODE	EST. HRS.	ESTIMATED QUANTITY/UNIT COST	EST. PRICE
ESTIMATED QUANTITIES			
Plumbing	2.000	Plumbing Sealant	\$80.00
Replacement Hot Water	1.000	Plumbing Sealant	\$100.00
Replacement Cold Water	1.000	Plumbing Sealant	\$100.00
ESTIMATED QUANTITY/UNIT COST			
Plumbing	2.000	Plumbing Sealant	\$80.00
Replacement Hot Water	1.000	Plumbing Sealant	\$100.00
Replacement Cold Water	1.000	Plumbing Sealant	\$100.00
ESTIMATED QUANTITY/UNIT COST			
Plumbing	2.000	Plumbing Sealant	\$80.00
Replacement Hot Water	1.000	Plumbing Sealant	\$100.00
Replacement Cold Water	1.000	Plumbing Sealant	\$100.00
ESTIMATED QUANTITY/UNIT COST			
Plumbing	2.000	Plumbing Sealant	\$80.00
Replacement Hot Water	1.000	Plumbing Sealant	\$100.00
Replacement Cold Water	1.000	Plumbing Sealant	\$100.00



1993	\$0			
1994	\$0			
1995	\$32,420	\$0	2014	\$0
1996	\$0	\$0	2015	\$0
1997	\$0	\$0	2016	\$0
1998	\$0	\$0	2017	\$0
1999	\$0	\$0	2018	\$0
2000	\$0	\$0	2019	\$54,304
2001	\$0	\$0	2020	\$0
2002	\$0	\$51,224	2021	\$0
2003	\$40,730	\$0	2022	\$0
		\$0	2023	\$0

Reproductive characteristics
 Devils are located at two large permanent chimney stacks (near ridge) as well as at four perches. Devils are in the nest of 8 years of age, with females showing separation noted throughout the pregnancy and maintenance of nest is recommended every 8 years to avoid building forays.

CASHING & RECEIPTS			
EXTERNAL BALANCE SHEET			
ACCOUNTS IN TOTAL EXISTING STATE		1947	1948
DEBITED AND CREDITED			
Debit	1,100	1,100	1,100
Credit	1,100	1,100	1,100
TOTAL		2,200	2,200
CREDITED ALL AND RECEIPTS FROM			
Credit	1,100	1,100	1,100
Debit	1,100	1,100	1,100
TOTAL		2,200	2,200

[illegible]

Residential Condominiums

Owners are limited to the top 50 percent of the history of each stock issue, so long as at no time do they own more than 10 percent of the total stock of the company. There is also a 10-year holding period, with income tracking and distributions called through the company. There is a voting right and redemption of the security is guaranteed every 10 years to assure a continuing income.

Cheltenham & Mortons SPECIALISED MORTGAGE ADVISERS			
PERFORMANCE OF TOTAL INVESTMENT		2010 - 2011	
PERFORMANCE UNDER QUANTIFIERS			
Number	5,332	Customer Satisfaction	95.0%
Management Fee Charge	0.50	Customer Net Promoter Score	9.0
Number of Accounts	10,000	Customer Net Promoter Score	9.0
PERFORMANCE AND RISK RATING		2010 - 2011	
Estimated Return on Assets	0	Estimated Return on Assets	0
Estimated Return on Equity	0	Estimated Return on Equity	0
Estimated Return on Assets	0	Estimated Return on Assets	0
Estimated Return on Equity	0	Estimated Return on Equity	0



Number of subjects in each category		
Age	18-24	20
Gender	Male	10
	Female	10
Education	High school	10
	College	10
	Postgraduate	10
Marital status	Married	10
	Single	10
Occupation	Student	10
	Professional	10
	Service	10
	Unemployed	10
Religion	Hindu	10
	Muslim	10
	Christian	10
	Buddhist	10
	Jain	10
	Sikh	10
	Other	10
Health status	Healthy	10
	Chronic disease	10
	Acute disease	10
	Unknown	10
Family size	1-2	10
	3-4	10
	5-6	10
	7-8	10
	9-10	10
	11-12	10
	13-14	10
	15-16	10
	17-18	10
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Who is qualified to conduct a reserve study?

- **CAI Reserve Specialist designation**
- **Educational background in Engineering or Architecture**
- **Experience in conducting Reserve Studies for at least 3 or more years.**





Thank you!

