



ENGINEERING & CONSULTING

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[www.superiorreserve.com](http://www.superiorreserve.com)

## Full Reserve Study

### The Hillsmere Shores Marina



Annapolis, Maryland

September 1, 2020

Reference Number: 200184

## Table of Contents



Property and Study Summary	1.101
Property Engineering Review	1.201
Reserve Study Overview	1.301
Funding Plan Overview	1.401
Financial Analysis Chart	1.402
30 Year Expenditure Summary	1.403
Reserve Budgets 2020-2050	1.404
Financial Information (provided)	1.501
Credentials	1.601
Limiting Conditions	1.701



Reserve Component List	Engineering Data Section	Replacement Year (red font if in 5 years or less)	Age (N/A = not available)	Useful Life (years)	Remaining Useful Life (years)	Replacement Cost without Inflation	% Included (blue font if less than 100%)	\$ Included	Number of Phases	Cost per Phase	Flexibility
Boat Lifts	6.105	2039	2019	20	19	\$75,000	100%	\$75,000	1	\$75,000	deferrable
Boat Ramps (1 of 2 every 20 years)	6.107	2028	varies	20	8	\$100,000	50%	\$50,000	1	\$50,000	deferrable
Bulkheads at Main Marina - Wood	6.202	2043	2013	30	23	\$450,000	100%	\$450,000	2	\$225,000	deferrable
Bulkheads at Sunset Boat Ramp - Wood	6.203	2049	2019	30	29	\$60,000	100%	\$60,000	1	\$60,000	deferrable
Bulkheads - Steel	6.204	2043	N/A	40	23	\$160,000	100%	\$160,000	1	\$160,000	deferrable
Dredging	-	2024	N/A	10	4	\$60,000	100%	\$60,000	1	\$60,000	deferrable
Electrical Hook-ups - Main Marina (replace outlets)	6.262	2020	N/A	30	0	\$45,000	60%	\$27,000	1	\$27,000	deferrable
Electrical Hook-ups - Main Marina (remaining)	6.262	2032	N/A	30	12	\$45,000	40%	\$18,000	2	\$9,000	deferrable
Electrical Hook-ups - Sunset Drive Boat Ramp	6.263	2032	N/A	30	12	\$5,000	100%	\$5,000	1	\$5,000	deferrable
Electrical Hook-ups - Beach Drive Boat Ramp	6.264	2032	N/A	30	12	\$3,400	100%	\$3,400	1	\$3,400	deferrable
Electrical Panels - Main Marina	6.265	2032	N/A	40	12	\$140,000	100%	\$140,000	2	\$70,000	deferrable
Gravel Augmentation - Main Marina Parking Area	6.417	2020	N/A	5	0	\$5,000	100%	\$5,000	1	\$5,000	deferrable
Gate Operator	6.421	2021	N/A	10	1	\$6,100	100%	\$6,100	1	\$6,100	discretionary
Gates	6.423	2031	N/A	40	11	\$10,000	100%	\$10,000	1	\$10,000	deferrable
Kayak Racks (5 of 30 every 5 years)	6.537	2022	varies	5	2	\$28,000	17%	\$4,667	1	\$4,667	deferrable
Landscape	6.541	2025	2020	5	5	\$10,000	100%	\$10,000	1	\$10,000	discretionary
Life Rings	6.547	2032	N/A	15	12	\$4,800	100%	\$4,800	1	\$4,800	deferrable
Light Poles and Fixtures - Main Marina (1)	6.601	2043	2013	30	23	\$21,600	100%	\$21,600	1	\$21,600	deferrable
Light Poles and Fixtures - Sunset Drive Boat Ramp	6.602	2028	N/A	30	8	\$5,000	100%	\$5,000	1	\$5,000	deferrable
Light Poles and Fixtures - Beach Drive Boat Ramp	6.603	2028	N/A	30	8	\$7,500	100%	\$7,500	1	\$7,500	deferrable
Lighting - Main Marina Piers (1)	6.604	2022	N/A	30	2	\$15,000	100%	\$15,000	1	\$15,000	deferrable
Pavement Replacement - Main Marina	6.661	2034	N/A	30	14	\$14,000	100%	\$14,000	1	\$14,000	deferrable
Pavement Replacement - Sunset Drive Boat Ramp (1)	6.662	2045	N/A	30	25	\$89,000	100%	\$89,000	1	\$89,000	deferrable
Pavement Replacement - Beach Drive Boat Ramp (1)	6.663	2022	N/A	30	2	\$103,000	100%	\$103,000	1	\$103,000	deferrable
Piers - Main Marina (dated)	6.665	2032	N/A	30	12	\$554,000	80%	\$443,200	2	\$221,600	deferrable
Piers - Main Marina (newer)	6.665	2042	N/A	30	22	\$554,000	20%	\$110,800	1	\$110,800	deferrable
Piers - Sunset Drive Boat Ramp (dated)	6.667	2032	N/A	30	12	\$94,000	30%	\$28,200	1	\$28,200	deferrable
Piers - Sunset Drive Boat Ramp (newer)	6.667	2049	2019	30	29	\$94,000	70%	\$65,800	1	\$65,800	deferrable
Piers - Beach Drive Boat Ramp	6.668	2030	2000	30	10	\$70,000	100%	\$70,000	1	\$70,000	deferrable
Pier - Kayak Ramp	6.669	2020	N/A	30	0	\$31,000	100%	\$31,000	1	\$31,000	deferrable
Pilings (5% every 5 years)	6.747	2024	varies	5	4	\$1,080,000	5%	\$54,000	1	\$54,000	deferrable
Pump Station - Main Marina	6.757	2030	2020	10	10	\$6,000	100%	\$6,000	1	\$6,000	deferrable
Rip Rap Augmentation - Main Marina	6.857	2030	2020	10	10	\$16,000	100%	\$16,000	1	\$16,000	deferrable
Security System - Cameras	6.957	2032	2020	12	12	\$10,000	100%	\$10,000	1	\$10,000	discretionary
Signs (1)	6.961	2021	N/A	25	1	\$9,300	100%	\$9,300	1	\$9,300	discretionary
Piping - Piers	6.987	2032	N/A	40	12	\$94,000	100%	\$94,000	2	\$47,000	deferrable
Well Pump and Pressurization System - Main Marina	6.993	2038	2018	20	18	\$3,500	100%	\$3,500	1	\$3,500	deferrable



## The Hillsmere Shores Marina

### Property and Service Summary

<b>Location:</b>	Annapolis, Maryland
<b>Property type:</b>	marina
<b>Number of units:</b>	123
<b>Year of construction:</b>	construction began in the 1950's with various additions and improvements throughout the years
<b>Date of inspection:</b>	September 1, 2020
<b>Type of service:</b>	reserve study
<b>Level of service:</b>	Full Study
<b>Length of analysis:</b>	30 years
<b>2020-21 budgeted reserve contribution:</b>	\$72,500
<b>2021-22 recommended reserve contribution:</b>	\$80,000 = increase of \$7,500 (\$5.08 per owner per month)
<b>Features:</b>	piers, parking areas, boat ramps, kayak racks, bulkheads, well, pumping station
<b>Completed projects:</b>	installation of boat lifts, renovation at Sunset Drive boat ramp, pump station, rip rap augmentation
<b>Upcoming projects:</b>	partial replacement of electrical hook-ups, gravel augmentation at main marina, replacement of gate operator, replacement of pier at kayak ramp, signs, repaving at Beach Drive boat ramp



main marina



Sunset Drive boat ramp



Beach Drive boat ramp



boat park (top left) and kayak ramp (bottom right)



## Property Engineering Review

During our inspection of your property, we identify the following repairs and improvements that the property should consider:

**Actionable recommendations - near term actions on these items will minimize future costs and maintain the comfort and security (See “Pages with Engineering Data” for more information where applicable):**

Landscape replacement timing is discretionary. Annual operating budgets should include funds for mowing, trimming, flowers and replacement of a limited amount of dead landscape. We include an allowance for periodic partial replacements of landscape to include replacement of overgrown bushes or trees as the property sees necessary. Overgrown bushes and trees can cause damage to adjacent components. Although unpredictable, this allowance could also be used for any landscape that has died from drought, disease, etc.



**Green ideas - Opportunities for energy efficiency and best practices for sustainability. Acting on these recommendations will provide significant cost savings (See “Pages with Engineering Data” for more information where applicable):**

We observed lights at the main marina that were operating during daylight. The property should replace the sensors or install light bulbs with daylight sensors. The property could also consider the installation of solar lights to illuminate the Main Marina. The following website provides solar lights: [www.emberled.com](http://www.emberled.com).

The property has seal coated the asphalt pavement in the past. It is our professional opinion that seal coating asphalt pavement does not extend the useful life of the pavement. Seal coats do not add structural strength to the pavement. Seal coating is also a source of environmental contamination. Many properties opt to save money by \*not\* seal coating their pavement. If the property decides to seal coat for aesthetic reasons, avoid the use of coal tar based pavement seal coats as they pollute waterways. Instead, consider a slurry coat of asphaltic emulsion to provide a sacrificial wearing surface to the pavement. The property should fund this expense through the operating budget.

The property could consider the installation of solar lights to illuminate the signs. The following website provides solar lights for signs: [www.emberled.com](http://www.emberled.com).

**Engineering solutions - reference this information for proper scope of work and best outcome on upcoming projects (See “Pages with Engineering Data” for more information where applicable):**

We suspect that the property will require an alternative material for pavement, such as permeable pavement or pavers, to avoid discharging storm water from the pavement into the river. The property could consider permeable pavement which allows storm water to penetrate through the pavement and

into the ground. The following website provides information on this repaving practice:  
[http://www.asphaltpavement.org/index.php?option=com\\_content&view=article&id=359&Itemid=863](http://www.asphaltpavement.org/index.php?option=com_content&view=article&id=359&Itemid=863).  
Our estimate cost of repaving assumes the installation of permeable pavement.

Implementation of these repairs and improvements could increase the useful life of the components, minimize operating costs and provide guidance at the time of component replacement.

## Reserve Study Overview

This reserve study is a *physical and financial analysis* of your property that determines what components of your property will eventually require either major repairs or restoration, or complete replacement. Large, one-time contributions (special assessments) for these projects can be eliminated with development of a *reserve* through relatively smaller annual contributions. The physical analysis determines the existing quantities, conditions, useful lives and costs of the components. The financial analysis determines the existing financial situation of your property and the reserves necessary to offset the future expenses.

### Reserve Component

Components in this reserve study meet the following requirements:

- responsibility of the property
- limited useful life expectancy
- predictable *remaining* useful life expectancy
- above a minimum threshold cost

Components that do not fulfill the above requirements are not included in this study.

### 30 Year Analysis

The analysis for this reserve study encompasses the next 30 years. The components of the property age each year. Those who enjoy the use of each component are financially responsible for what they enjoyed. This length of an analysis is necessary to analyze the aging of nearly all the major components of the property. The expectation is not that the current Owners, Board of Directors and/or Management will be present at the property in 30 years. Rather, the future analysis aids in determining the most accurate *current* contribution for the aging components.

### Funding Method

The funding method of this reserve study utilizes the *cash flow method*. With the cash flow method, contributions to the reserve fund are designed to offset variable annual expenditures. We experiment with different contribution scenarios until an ideal scenario is discovered to offset reserve expenditures. All expenses and contributions are *pooled* together. Our experience indicates that the cash flow method typically results in lower overall contributions than the *component method*, which typically segregates funds.

### Funding Goal

The funding goal of this reserve study is to maintain a reserve balance above a minimum *threshold* during the years of major expenditures. We assume a contingency reserve balance of not less than

*approximately* ten percent (10%) of the expenditures in the **threshold funding year** (The year the reserve balance is at its lowest point. See Funding Plan Page 1.401 for the identification of this year). The property can determine if they prefer a higher or lower contingency.

The ideal situation is when the threshold funding year is in the last year of the analysis. This provides the maximum amount of time that the property can save up for major expenses. A critical situation is when the threshold funding year is in the first few years of the analysis. This situation requires major initial reserve contributions to offset near term expenditures.

### **Funding**

This reserve study assumes an ideal situation where all future costs are offset by annual contributions to the reserve fund. *We understand that this is not always possible.* Our experience suggests that major projects are funded through multiple means such as partially through the reserve fund and partial through either additional assessments or bank loans. The specific funding of the projects is determined by the property at the time of the event (this is not something we can forecast). The goal of the property should be to follow the recommended funding plan outlined in this reserve study. If the recommended reserve contributions are not feasible as determined by the Board of Director's judgment, this reserve study should then be used, at a minimum, to justify the need for an *increase* over the *current* reserve fund contribution.

### **Flexibility**

The time of replacement for each component involves a varying degree of deduction. To help understand the criticality of each replacement time, we provide the following replacement flexibility guide:

**firm** - Replacement time has little, if any, flexibility. Deferring the replacement time would have an adverse effect on the property.

**deferrable** - Replacement time has limited flexibility. Continually deferring the replacement time would eventually have an adverse effect on the property and raise aesthetic concerns.

**discretionary** - Replacement time has flexibility. Continually deferring the replacement time would either raise aesthetic concerns or the component does not affect the functionality of the property. The replacement costs for certain discretionary expenses can vary greatly as they are subject to improvements and expansions as desired by the property.

### Reserve Study Requirements

Property Declarations occasionally define reserve study requirements. The state legislature may also define reserve study requirements. The following is a link to state reserve study requirements (the property should be aware more recent or pending legislation may exist since the date of this report):

<http://mgaleg.maryland.gov/webmga/frmStatutesText.aspx?article=grp&section=11-109&ext=html&session=2015RS&tab=subject5>

It is our intention that this reserve study complies with these requirements. The property should consult with their attorney on discrepancies between reserve study requirements. Contact us for any revision necessary to the reserve study to fulfill these requirements.

### Cost estimates

We obtain the cost estimates for replacements from the following sources:

- published sources (*RS Means* based on standard union labor rate)
- historical costs
- proprietary information

Our estimates are not guarantees of actual replacement costs. We base our estimates on our calculation of expected market rate for your specific location and specific situation. Multiple contractor bids will result in multiple cost estimates. *Multiple* contractor estimates will inevitably vary from our *single* estimate. The property should verify the scope of work in the contractor's estimate is similar to what is noted on the Engineering Data page (Engineering Data pages are all the data pages subsequent to "Limiting Conditions", Page 1.701). Common reasons for cost discrepancies include varying scopes of work and improvements over the existing components. Technological improvements also cause cost discrepancies - what may have been current technology at the time of the study could be obsolete at the time of replacement. If the property receives an estimate that is higher than the estimate in this reserve study for the same scope of work, the property should use this study as a tool to negotiate a lower cost. If the property receives an estimate that is lower than the estimate in this reserve study for the same scope of work - the estimate is below the expected market rate.

### Long Lived Components

There exists components at the property that will not require replacement during the 30 year analysis. Although these long lived components will eventually require replacement, they do not fall within the scope of the analysis. Periodic updates of the study will eventually include their replacement. Frequent updates of the study will ensure the property has up to 30 years to plan for their eventual replacement. The following is a list of **common** long lived components for the property:

- underground holding tanks



- well casing

### **Operating Budget**

The operating budget provides funds necessary for the daily operation of the property. In general, the operating budget includes expenses that repeat from year to year, such as administrative expenses and cleaning. All the property components require maintenance. *This reserve study does not include maintenance costs that would traditionally fall under an operating budget.* We assume the property will fund normal annual maintenance through the operating budget. We also assume that the property will fund replacement of components below an estimated minimum threshold cost of

\$3,000

through the operating budget. The following is a list of components that we assume the property will fund through the operating budget:

- beach at main marina
- boat park
- chain link fence at Sunset Drive boat ramp
- crack repairing and patching of asphalt pavement
- dog waste stations
- flag and flag pole
- landscape annual maintenance
- seal coating of the asphalt pavement (for aesthetic purposes if desired)

The items in the list above have a minimal (if any) impact on our recommended reserve fund contribution. If the property chooses to fund these expenses through reserves, updates of this reserve study would account for these expenses.

### **Owner Responsibility**

The property's Declaration assigns the responsibility of certain components to the owners. These are typically components where the use is solely enjoyed by the owner. The following is a list of components that are the responsibility of the owners as described to us during our meeting at the property:

- dock boxes

### **Additional Assessments**

The objective of properly planned operating budgets and reserve contributions is to avoid additional assessments. However, additional assessments are necessary for unplanned costs such as code change requirements, unobservable conditions, property improvements, etc. We *do not* recommend the property fund these expenses through reserves. The property should consult with an attorney to determine if the property Bylaws have a provision for these types of expenses.

### **Definitions and Supporting Information**

Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA) are national organizations that provide requirements for reserve studies. The property should refer to these organizations for reserve study definitions and supporting information. The following are links to these organizations:

<http://www.caionline.org>

<http://www.apra-usa.com/>

### **Reserve Fund Status**

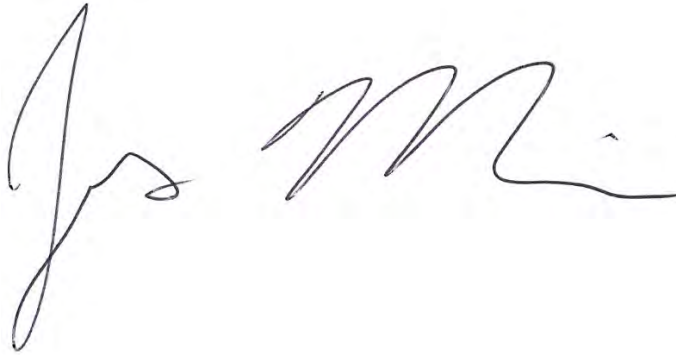
If the property were to fund all expenditures identified in this study through reserves, an increase in the reserve contributions is necessary. See Funding Plan Page 1.401 for our recommended reserve funding plan.

### **Updates**

The reserve study is a static snap shot in time based on the date of the inspection. However, costs, inflation rates, interest rates and weather conditions are dynamic in that they are always changing. This necessitates periodic *updates* of the reserve study. An update is less costly than the original reserve study since there is less labor involved in gathering information on your property. We suggest updating the reserve study every three to six years. Factors that can determine when an update should occur are an upcoming major project, completion of a major project, major change to the property, known change

in the interest and/or inflation rates compared to the last reserve study, etc. Please contact us for a reserve study update proposal when necessary.

Sincerely,



Justin J. Maier, RS  
Partner  
Superior Reserve Engineering & Consulting  
justin@superiorreserve.com  
888-688-4560  
Report submitted on: September 14, 2020

## Recommended Reserve Funding Plan

### The Hillsmere Shores Marina

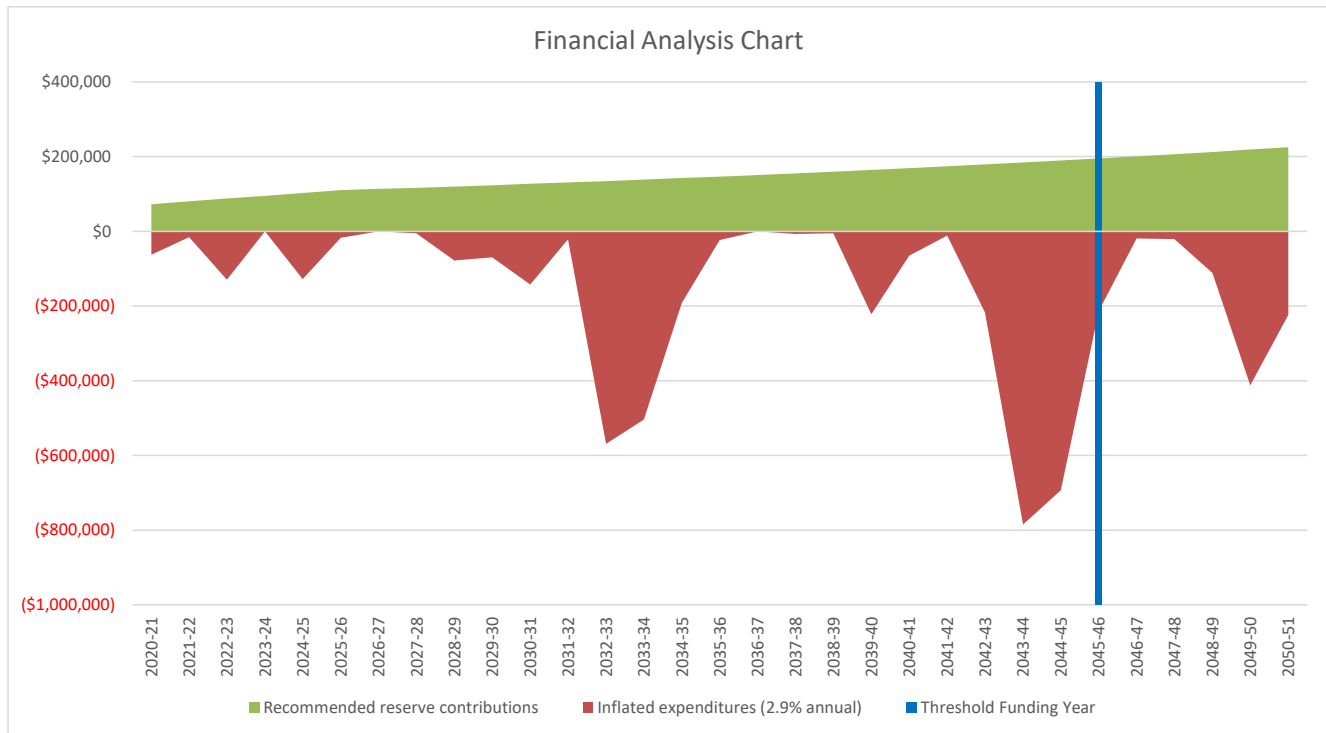
Year	Inflated expenditures (2.9% annual)	Recommended reserve contributions	Ending reserve balance	Average \$ per owner per month (123 owners)**	\$ increase per month from previous year	% increase from previous year
2020-21*	(\$63,000)	\$72,500	\$393,195	\$49.12	-	-
2021-22	(\$15,847)	\$80,000	\$465,853	\$54.20	\$5.08	10.3%
2022-23	(\$129,884)	\$87,500	\$432,362	\$59.28	\$5.08	9.4%
2023-24	\$0	\$95,000	\$536,959	\$64.36	\$5.08	8.6%
2024-25	(\$127,810)	\$102,500	\$522,134	\$69.44	\$5.08	7.9%
2025-26	(\$17,305)	\$110,000	\$626,200	\$74.53	\$5.08	7.3%
2026-27	\$0	\$113,200	\$753,056	\$76.69	\$2.17	2.9%
2027-28	(\$5,701)	\$116,500	\$880,024	\$78.93	\$2.24	2.9%
2028-29	(\$78,560)	\$119,900	\$939,378	\$81.23	\$2.30	2.9%
2029-30	(\$69,844)	\$123,400	\$1,012,256	\$83.60	\$2.37	2.9%
2030-31	(\$142,409)	\$127,000	\$1,016,938	\$86.04	\$2.44	2.9%
2031-32	(\$22,049)	\$130,700	\$1,147,014	\$88.55	\$2.51	2.9%
2032-33	(\$568,863)	\$134,500	\$731,248	\$91.12	\$2.57	2.9%
2033-34	(\$504,057)	\$138,400	\$376,559	\$93.77	\$2.64	2.9%
2034-35	(\$190,996)	\$142,400	\$335,008	\$96.48	\$2.71	2.9%
2035-36	(\$23,031)	\$146,500	\$466,411	\$99.25	\$2.78	2.9%
2036-37	\$0	\$150,700	\$627,946	\$102.10	\$2.85	2.9%
2037-38	(\$7,587)	\$155,100	\$789,493	\$105.08	\$2.98	2.9%
2038-39	(\$5,855)	\$159,600	\$960,565	\$108.13	\$3.05	2.9%
2039-40	(\$222,066)	\$164,200	\$921,332	\$111.25	\$3.12	2.9%
2040-41	(\$65,540)	\$169,000	\$1,044,253	\$114.50	\$3.25	2.9%
2041-42	(\$11,119)	\$173,900	\$1,229,547	\$117.82	\$3.32	2.9%
2042-43	(\$216,568)	\$178,900	\$1,216,093	\$121.21	\$3.39	2.9%
2043-44	(\$784,731)	\$184,100	\$633,778	\$124.73	\$3.52	2.9%
2044-45	(\$693,098)	\$189,400	\$137,719	\$128.32	\$3.59	2.9%
***2045-46	(\$212,529)	\$194,900	<u>\$122,668</u>	\$132.05	\$3.73	2.9%
2046-47	(\$19,556)	\$200,600	\$307,976	\$135.91	\$3.86	2.9%
2047-48	(\$20,484)	\$206,400	\$501,911	\$139.84	\$3.93	2.9%
2048-49	(\$111,327)	\$212,400	\$614,033	\$143.90	\$4.07	2.9%
2049-50	(\$411,942)	\$218,600	\$431,039	\$148.10	\$4.20	2.9%
2050-51	(\$223,967)	\$224,900	\$440,601	\$152.37	\$4.27	2.9%

\* reserve contributions are budgeted

\*\*The costs in this column represent an AVERAGE \$ only and is only intended to put the \$ into perspective.

\*\*\*2045-46 is the THRESHOLD FUNDING YEAR (the year the reserve balance is at its lowest point)

### The Hillsmere Shores Marina





# 30 Year Expenditure Summary



These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

1.403

## The Hillsmere Shores Marina

Fiscal year	2020-21	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	100.0%	102.9%	105.9%	109.0%	112.1%	115.4%	118.7%	122.2%
Beginning balance (July 1, 2020)	\$376,078	\$393,195	\$465,853	\$432,362	\$536,959	\$522,134	\$626,200	\$753,056
Inflated expenditures (2.9% annual)	(\$63,000)	(\$15,847)	(\$129,884)	\$0	(\$127,810)	(\$17,305)	\$0	(\$5,701)
Recommended reserve contributions	\$72,500	\$80,000	\$87,500	\$95,000	\$102,500	\$110,000	\$113,200	\$116,500
Estimated interest earned (2.0% PROJECTED yield rate)	\$7,617	\$8,505	\$8,893	\$9,597	\$10,486	\$11,370	\$13,656	\$16,169
Ending reserve balance	\$393,195	\$465,853	\$432,362	\$536,959	\$522,134	\$626,200	\$753,056	\$880,024

## Reserve Component List

Boat Lifts								
Boat Ramps (1 of 2 every 20 years)								
Bulkheads at Main Marina - Wood								
Bulkheads at Sunset Boat Ramp - Wood								
Bulkheads - Steel								
Dredging					67,269			
Electrical Hook-ups - Main Marina (replace outlets)	27,000							
Electrical Hook-ups - Main Marina (remaining)								
Electrical Hook-ups - Sunset Drive Boat Ramp								
Electrical Hook-ups - Beach Drive Boat Ramp								
Electrical Panels - Main Marina								
Gravel Augmentation - Main Marina Parking Area	5,000					5,768		
Gate Operator		6,277						
Gates								
Kayak Racks (5 of 30 every 5 years)			4,941					5,701
Landscape						11,537		
Life Rings								
Light Poles and Fixtures - Main Marina (1)								
Light Poles and Fixtures - Sunset Drive Boat Ramp								
Light Poles and Fixtures - Beach Drive Boat Ramp								
Lighting - Main Marina Piers (1)			15,883					
Pavement Replacement - Main Marina								
Pavement Replacement - Sunset Drive Boat Ramp (1)								
Pavement Replacement - Beach Drive Boat Ramp (1)			109,061					
Piers - Main Marina (dated)								
Piers - Main Marina (newer)								
Piers - Sunset Drive Boat Ramp (dated)								
Piers - Sunset Drive Boat Ramp (newer)								
Piers - Beach Drive Boat Ramp								
Pier - Kayak Ramp	31,000							
Pilings (5% every 5 years)					60,542			
Pump Station - Main Marina								
Rip Rap Augmentation - Main Marina								
Security System - Cameras								
Signs (1)		9,570						
Piping - Piers								
Well Pump and Pressurization System - Main Marina								

# 30 Year Expenditure Summary



These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

1.403

## The Hillsmere Shores Marina

Fiscal year	2028-29	2029-30	2030-31	2031-32	2032-33	2033-34	2034-35	2035-36
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	125.7%	129.3%	133.1%	137.0%	140.9%	145.0%	149.2%	153.5%
Beginning balance (July 1, 2020)	\$880,024	\$939,378	\$1,012,256	\$1,016,938	\$1,147,014	\$731,248	\$376,559	\$335,008
Inflated expenditures (2.9% annual)	(\$78,560)	(\$69,844)	(\$142,409)	(\$22,049)	(\$568,863)	(\$504,057)	(\$190,996)	(\$23,031)
Recommended reserve contributions	\$119,900	\$123,400	\$127,000	\$130,700	\$134,500	\$138,400	\$142,400	\$146,500
Estimated interest earned (2.0% PROJECTED yield rate)	\$18,014	\$19,323	\$20,091	\$21,425	\$18,597	\$10,968	\$7,045	\$7,935
Ending reserve balance	\$939,378	\$1,012,256	\$1,016,938	\$1,147,014	\$731,248	\$376,559	\$335,008	\$466,411

## Reserve Component List

Boat Lifts								
Boat Ramps (1 of 2 every 20 years)	62,848							
Bulkheads at Main Marina - Wood								
Bulkheads at Sunset Boat Ramp - Wood								
Bulkheads - Steel								
Dredging							89,530	
Electrical Hook-ups - Main Marina (replace outlets)								
Electrical Hook-ups - Main Marina (remaining)					12,683	13,051		
Electrical Hook-ups - Sunset Drive Boat Ramp					7,046			
Electrical Hook-ups - Beach Drive Boat Ramp					4,791			
Electrical Panels - Main Marina					98,647	101,507		
Gravel Augmentation - Main Marina Parking Area			6,655					7,677
Gate Operator				8,354				
Gates				13,695				
Kayak Racks (5 of 30 every 5 years)					6,576			
Landscape			13,309					15,354
Life Rings					6,764			
Light Poles and Fixtures - Main Marina (1)								
Light Poles and Fixtures - Sunset Drive Boat Ramp	6,285							
Light Poles and Fixtures - Beach Drive Boat Ramp	9,427							
Lighting - Main Marina Piers (1)								
Pavement Replacement - Main Marina							20,890	
Pavement Replacement - Sunset Drive Boat Ramp (1)								
Pavement Replacement - Beach Drive Boat Ramp (1)								
Piers - Main Marina (dated)					312,287	321,344		
Piers - Main Marina (newer)								
Piers - Sunset Drive Boat Ramp (dated)					39,741			
Piers - Sunset Drive Boat Ramp (newer)								
Piers - Beach Drive Boat Ramp			93,165					
Pier - Kayak Ramp								
Pilings (5% every 5 years)		69,844					80,577	
Pump Station - Main Marina			7,986					
Rip Rap Augmentation - Main Marina			21,295					
Security System - Cameras					14,092			
Signs (1)								
Piping - Piers					66,234	68,155		
Well Pump and Pressurization System - Main Marina								

# 30 Year Expenditure Summary



These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

1.403

## The Hillsmere Shores Marina

Fiscal year	2036-37	2037-38	2038-39	2039-40	2040-41	2041-42	2042-43	2043-44
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	158.0%	162.6%	167.3%	172.1%	177.1%	182.3%	187.6%	193.0%
Beginning balance (July 1, 2020)	\$466,411	\$627,946	\$789,493	\$960,565	\$921,332	\$1,044,253	\$1,229,547	\$1,216,093
Inflated expenditures (2.9% annual)	\$0	(\$7,587)	(\$5,855)	(\$222,066)	(\$65,540)	(\$11,119)	(\$216,568)	(\$784,731)
Recommended reserve contributions	\$150,700	\$155,100	\$159,600	\$164,200	\$169,000	\$173,900	\$178,900	\$184,100
Estimated interest earned (2.0% PROJECTED yield rate)	\$10,835	\$14,034	\$17,327	\$18,633	\$19,461	\$22,513	\$24,214	\$18,316
Ending reserve balance	\$627,946	\$789,493	\$960,565	\$921,332	\$1,044,253	\$1,229,547	\$1,216,093	\$633,778

## Reserve Component List

Boat Lifts	129,108
Boat Ramps (1 of 2 every 20 years)	
Bulkheads at Main Marina - Wood	434,246
Bulkheads at Sunset Boat Ramp - Wood	
Bulkheads - Steel	308,797
Dredging	
Electrical Hook-ups - Main Marina (replace outlets)	
Electrical Hook-ups - Main Marina (remaining)	
Electrical Hook-ups - Sunset Drive Boat Ramp	
Electrical Hook-ups - Beach Drive Boat Ramp	
Electrical Panels - Main Marina	
Gravel Augmentation - Main Marina Parking Area	8,857
Gate Operator	11,119
Gates	
Kayak Racks (5 of 30 every 5 years)	7,587
Landscape	17,714
Life Rings	
Light Poles and Fixtures - Main Marina (1)	41,688
Light Poles and Fixtures - Sunset Drive Boat Ramp	
Light Poles and Fixtures - Beach Drive Boat Ramp	
Lighting - Main Marina Piers (1)	
Pavement Replacement - Main Marina	
Pavement Replacement - Sunset Drive Boat Ramp (1)	
Pavement Replacement - Beach Drive Boat Ramp (1)	
Piers - Main Marina (dated)	
Piers - Main Marina (newer)	207,816
Piers - Sunset Drive Boat Ramp (dated)	
Piers - Sunset Drive Boat Ramp (newer)	
Piers - Beach Drive Boat Ramp	
Pier - Kayak Ramp	
Pilings (5% every 5 years)	92,958
Pump Station - Main Marina	10,628
Rip Rap Augmentation - Main Marina	28,342
Security System - Cameras	
Signs (1)	
Piping - Piers	
Well Pump and Pressurization System - Main Marina	5,855

# 30 Year Expenditure Summary



These summary pages depict the INFLATED reserve expenses during the next 30 years. The costs on these pages SHOULD NOT be compared to current bid costs as these costs are inflated.

1.403

## The Hillsmere Shores Marina

		threshold funding year					
Fiscal year	2044-45	2045-46	2046-47	2047-48	2048-49	2049-50	2050-51
Construction inflation rate	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%	2.9%
Compounded construction inflation	198.6%	204.4%	210.3%	216.4%	222.7%	229.1%	235.8%
Beginning balance (July 1, 2020)	\$633,778	\$137,719	\$122,668	\$307,976	\$501,911	\$614,033	\$431,039
Inflated expenditures (2.9% annual)	(\$693,098)	(\$212,529)	(\$19,556)	(\$20,484)	(\$111,327)	(\$411,942)	(\$223,967)
Recommended reserve contributions	\$189,400	\$194,900	\$200,600	\$206,400	\$212,400	\$218,600	\$224,900
Estimated interest earned (2.0% PROJECTED yield rate)	\$7,639	\$2,578	\$4,264	\$8,019	\$11,049	\$10,347	\$8,630
Ending reserve balance	\$137,719	\$122,668	\$307,976	\$501,911	\$614,033	\$431,039	\$440,601

## Reserve Component List

Boat Lifts							
Boat Ramps (1 of 2 every 20 years)					111,327		
Bulkheads at Main Marina - Wood	446,839						
Bulkheads at Sunset Drive Boat Ramp - Wood						137,467	
Bulkheads - Steel							
Dredging	119,157						
Electrical Hook-ups - Main Marina (replace outlets)							63,654
Electrical Hook-ups - Main Marina (remaining)							
Electrical Hook-ups - Sunset Drive Boat Ramp							
Electrical Hook-ups - Beach Drive Boat Ramp							
Electrical Panels - Main Marina							
Gravel Augmentation - Main Marina Parking Area		10,218					11,788
Gate Operator							
Gates							
Kayak Racks (5 of 30 every 5 years)				10,098			
Landscape		20,435					23,576
Life Rings				10,386			
Light Poles and Fixtures - Main Marina (1)							
Light Poles and Fixtures - Sunset Drive Boat Ramp							
Light Poles and Fixtures - Beach Drive Boat Ramp							
Lighting - Main Marina Piers (1)							
Pavement Replacement - Main Marina							
Pavement Replacement - Sunset Drive Boat Ramp (1)		181,876					
Pavement Replacement - Beach Drive Boat Ramp (1)							
Piers - Main Marina (dated)							
Piers - Main Marina (newer)							
Piers - Sunset Drive Boat Ramp (dated)							
Piers - Sunset Drive Boat Ramp (newer)						150,755	
Piers - Beach Drive Boat Ramp							
Pier - Kayak Ramp							73,084
Pilings (5% every 5 years)	107,241					123,720	
Pump Station - Main Marina							14,145
Rip Rap Augmentation - Main Marina							37,721
Security System - Cameras	19,860						
Signs (1)				19,556			
Piping - Piers							
Well Pump and Pressurization System - Main Marina							



1.404.2020



## 2020-21

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2020 through June 30, 2021

Year of forecast: 0  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2020-21: 100.0%

Unaudited, provided, beginning reserve balance as of July 1, 2020: \$376,078

Budgeted reserve contribution: + \$72,500

Estimated interest earned (2.0% yield rate): + \$7,617

**Total contributions: = \$80,117**

#### The Hillsmere Shores Marina

### 2020-21 Expenditures

	Number of phases	Flexibility	Engineering Data Section	
Electrical Hook-ups - Main Marina (replace outlets)	1	deferrable	6.262	(\$27,000)
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$5,000)
Pier - Kayak Ramp	1	deferrable	6.669	(\$31,000)
<b>Total expenditures:</b>				<b>(\$63,000)</b>
Ending reserve balance:				<u>\$393,195</u>





1.404.2021

## 2021-22

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2021 through June 30, 2022

Year of forecast: 1  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2021-22: 102.9%

Beginning reserve balance: \$393,195

Recommended reserve contribution: + \$80,000  
Estimated interest earned (2.0% PROJECTED yield rate): + \$8,505

**Total contributions: = \$88,505**

#### The Hillsmere Shores Marina

### 2021-22 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gate Operator	1	discretionary	6.421	(\$6,277)
Signs (1)	1	discretionary	6.961	(\$9,570)
<b>Total expenditures:</b>				<b>(\$15,847)</b>
Ending reserve balance:				\$465,853



1.404.2022

## 2022-23

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2022 through June 30, 2023

Year of forecast: 2  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2022-23: 105.9%

Beginning reserve balance: \$465,853

Recommended reserve contribution: + \$87,500  
Estimated interest earned (2.0% PROJECTED yield rate): + \$8,893

**Total contributions: = \$96,393**

#### The Hillsmere Shores Marina

### 2022-23 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Kayak Racks (5 of 30 every 5 years)	1	deferrable	6.537	(\$4,941)
Lighting - Main Marina Piers (1)	1	deferrable	6.604	(\$15,883)
Pavement Replacement - Beach Drive Boat Ramp (1)	1	deferrable	6.663	(\$109,061)
<b>Total expenditures:</b>				(\$129,884)
Ending reserve balance:				<u>\$432,362</u>



1.404.2023

2023-24

Hybrid Reserve Expenditures and Funding Plan

July 1, 2023 through June 30, 2024

Year of forecast: 3  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2023-24: 109.0%

Beginning reserve balance: \$432,362

Recommended reserve contribution: + \$95,000  
Estimated interest earned (2.0% PROJECTED yield rate): + \$9,597  
Total contributions: = \$104,597

The Hillsmere Shores Marina

2023-24 Expenditures (inflated)

Number of phases      Flexibility      Engineering Data Section

Total expenditures: \$0  
Ending reserve balance: \$536,959



1.404.2024

## 2024-25

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2024 through June 30, 2025

Year of forecast: 4  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2024-25: 112.1%

Beginning reserve balance: \$536,959

Recommended reserve contribution: + \$102,500  
Estimated interest earned (2.0% PROJECTED yield rate): + \$10,486  
Total contributions: = \$112,986

#### The Hillsmere Shores Marina

### 2024-25 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Dredging	1	deferrable	-	(\$67,269)
Pilings (5% every 5 years)	1	deferrable	6.747	(\$60,542)
Total expenditures:				(\$127,810)
				Ending reserve balance: <u>\$522,134</u>



2025-26

Hybrid Reserve Expenditures and Funding Plan

July 1, 2025 through June 30, 2026

Year of forecast: 5  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2025-26: 115.4%

Beginning reserve balance: \$522,134

Recommended reserve contribution: + \$110,000  
Estimated interest earned (2.0% PROJECTED yield rate): + \$11,370  
Total contributions: = \$121,370

The Hillsmere Shores Marina

2025-26 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$5,768)
Landscape	1	discretionary	6.541	(\$11,537)
Total expenditures:				(\$17,305)
				Ending reserve balance: <u>\$626,200</u>





1.404.2026

**2026-27**

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2026 through June 30, 2027

Year of forecast: 6

Annual CONSTRUCTION inflation rate: 2.9%

Compounded CONSTRUCTION inflation in 2026-27: 118.7%

Beginning reserve balance: \$626,200

Recommended reserve contribution: + \$113,200

Estimated interest earned (2.0% PROJECTED yield rate): + \$13,656

Total contributions:= \$126,856

## The Hillsmere Shores Marina

### 2026-27 Expenditures (inflated)

**Number of  
phases**

## Flexibility

## Engineering Data Section

Total expenditures:

\$0

Ending reserve balance: \$753,056



1.404.2027

## 2027-28

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2027 through June 30, 2028

Year of forecast: 7  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2027-28: 122.2%

Beginning reserve balance: \$753,056

Recommended reserve contribution: + \$116,500  
Estimated interest earned (2.0% PROJECTED yield rate): + \$16,169  
Total contributions: = \$132,669

The Hillsmere Shores Marina

### 2027-28 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Kayak Racks (5 of 30 every 5 years)	1	deferrable	6.537	(\$5,701)
Total expenditures:				(\$5,701)
			Ending reserve balance:	<u>\$880,024</u>



1.404.2028

## 2028-29

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2028 through June 30, 2029

Year of forecast: 8  
 Annual CONSTRUCTION inflation rate: 2.9%  
 Compounded CONSTRUCTION inflation in 2028-29: 125.7%

Beginning reserve balance: \$880,024

Recommended reserve contribution: + \$119,900  
 Estimated interest earned (2.0% PROJECTED yield rate): + \$18,014  
**Total contributions: = \$137,914**

#### The Hillsmere Shores Marina

### 2028-29 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Boat Ramps (1 of 2 every 20 years)	1	deferrable	6.107	(\$62,848)
Light Poles and Fixtures - Sunset Drive Boat Ramp	1	deferrable	6.602	(\$6,285)
Light Poles and Fixtures - Beach Drive Boat Ramp	1	deferrable	6.603	(\$9,427)
<b>Total expenditures:</b>				<b>(\$78,560)</b>
Ending reserve balance:				<u>\$939,378</u>



1.404.2029

## 2029-30

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2029 through June 30, 2030

Year of forecast: 9  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2029-30: 129.3%

Beginning reserve balance: \$939,378

Recommended reserve contribution: + \$123,400  
Estimated interest earned (2.0% PROJECTED yield rate): + \$19,323  
Total contributions: = \$142,723

The Hillsmere Shores Marina

### 2029-30 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Pilings (5% every 5 years)	1	deferrable	6.747	(\$69,844)
Total expenditures:				(\$69,844)
			Ending reserve balance:	<u>\$1,012,256</u>



1.404.2030

## 2030-31

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2030 through June 30, 2031

Year of forecast: 10  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2030-31: 133.1%

Beginning reserve balance: \$1,012,256

Recommended reserve contribution: + \$127,000  
Estimated interest earned (2.0% PROJECTED yield rate): + \$20,091  
**Total contributions: = \$147,091**

#### The Hillsmere Shores Marina

### 2030-31 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$6,655)
Landscape	1	discretionary	6.541	(\$13,309)
Piers - Beach Drive Boat Ramp	1	deferrable	6.668	(\$93,165)
Pump Station - Main Marina	1	deferrable	6.757	(\$7,986)
Rip Rap Augmentation - Main Marina	1	deferrable	6.857	(\$21,295)
<b>Total expenditures:</b>				<b>(\$142,409)</b>
Ending reserve balance:				<u><b>\$1,016,938</b></u>





1.404.2031

## 2031-32

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2031 through June 30, 2032

Year of forecast: 11  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2031-32: 137.0%

Beginning reserve balance: \$1,016,938

Recommended reserve contribution: + \$130,700  
Estimated interest earned (2.0% PROJECTED yield rate): + \$21,425  
**Total contributions: = \$152,125**

#### The Hillsmere Shores Marina

### 2031-32 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gate Operator	1	discretionary	6.421	(\$8,354)
Gates	1	deferrable	6.423	(\$13,695)
<b>Total expenditures:</b>				<b>(\$22,049)</b>
Ending reserve balance:				<u>\$1,147,014</u>



1.404.2032

## 2032-33

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2032 through June 30, 2033

Year of forecast: 12  
 Annual CONSTRUCTION inflation rate: 2.9%  
 Compounded CONSTRUCTION inflation in 2032-33: 140.9%

Beginning reserve balance: \$1,147,014

Recommended reserve contribution: + \$134,500  
 Estimated interest earned (2.0% PROJECTED yield rate): + \$18,597  
**Total contributions: = \$153,097**

#### The Hillsmere Shores Marina

### 2032-33 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Electrical Hook-ups - Main Marina (remaining)	2	deferrable	6.262	(\$12,683)
Electrical Hook-ups - Sunset Drive Boat Ramp	1	deferrable	6.263	(\$7,046)
Electrical Hook-ups - Beach Drive Boat Ramp	1	deferrable	6.264	(\$4,791)
Electrical Panels - Main Marina	2	deferrable	6.265	(\$98,647)
Kayak Racks (5 of 30 every 5 years)	1	deferrable	6.537	(\$6,576)
Life Rings	1	deferrable	6.547	(\$6,764)
Piers - Main Marina (dated)	2	deferrable	6.665	(\$312,287)
Piers - Sunset Drive Boat Ramp (dated)	1	deferrable	6.667	(\$39,741)
Security System - Cameras	1	discretionary	6.957	(\$14,092)
Piping - Piers	2	deferrable	6.987	(\$66,234)
<b>Total expenditures:</b>				<b>(\$568,863)</b>
Ending reserve balance:				<u>\$731,248</u>



1.404.2033

## 2033-34

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2033 through June 30, 2034

Year of forecast: 13  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2033-34: 145.0%

Beginning reserve balance: \$731,248

Recommended reserve contribution: + \$138,400  
Estimated interest earned (2.0% PROJECTED yield rate): + \$10,968  
Total contributions: = \$149,368

#### The Hillsmere Shores Marina

### 2033-34 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Electrical Hook-ups - Main Marina (remaining)	2	deferrable	6.262	(\$13,051)
Electrical Panels - Main Marina	2	deferrable	6.265	(\$101,507)
Piers - Main Marina (dated)	2	deferrable	6.665	(\$321,344)
Piping - Piers	2	deferrable	6.987	(\$68,155)
Total expenditures:				(\$504,057)
Ending reserve balance:				<u>\$376,559</u>



1.404.2034

## 2034-35

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2034 through June 30, 2035

Year of forecast: 14  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2034-35: 149.2%

Beginning reserve balance: \$376,559

Recommended reserve contribution: + \$142,400  
Estimated interest earned (2.0% PROJECTED yield rate): + \$7,045

**Total contributions: = \$149,445**

#### The Hillsmere Shores Marina

### 2034-35 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Dredging	1	deferrable	-	(\$89,530)
Pavement Replacement - Main Marina	1	deferrable	6.661	(\$20,890)
Pilings (5% every 5 years)	1	deferrable	6.747	(\$80,577)
<b>Total expenditures:</b>				<b>(\$190,996)</b>
Ending reserve balance:				<u>\$335,008</u>

2035-36

Hybrid Reserve Expenditures and Funding Plan

July 1, 2035 through June 30, 2036

Year of forecast:	15
Annual CONSTRUCTION inflation rate:	2.9%
Compounded CONSTRUCTION inflation in 2035-36:	153.5%

Beginning reserve balance: \$335,008

Recommended reserve contribution: +	\$146,500
Estimated interest earned (2.0% PROJECTED yield rate): +	<u>\$7,935</u>

Total contributions: = \$154,435

The Hillsmere Shores Marina

2035-36 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$7,677)
Landscape	1	discretionary	6.541	(\$15,354)
Total expenditures:				(\$23,031)
Ending reserve balance:				<u>\$466,411</u>



1.404.2036

## 2036-37

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2036 through June 30, 2037

Year of forecast: 16  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2036-37: 158.0%

Beginning reserve balance: \$466,411

Recommended reserve contribution: + \$150,700  
Estimated interest earned (2.0% PROJECTED yield rate): + \$10,835  
Total contributions: = \$161,535

The Hillsmere Shores Marina

### 2036-37 Expenditures (inflated)

Number of phases      Flexibility      Engineering Data Section

Total expenditures: \$0  
Ending reserve balance: \$627,946



1.404.2037

## 2037-38

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2037 through June 30, 2038

Year of forecast: 17  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2037-38: 162.6%

Beginning reserve balance: \$627,946

Recommended reserve contribution: + \$155,100  
Estimated interest earned (2.0% PROJECTED yield rate): + \$14,034  
Total contributions: = \$169,134

#### The Hillsmere Shores Marina

### 2037-38 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Kayak Racks (5 of 30 every 5 years)	1	deferrable	6.537	(\$7,587)
Total expenditures:				(\$7,587)
			Ending reserve balance:	<u>\$789,493</u>



1.404.2038

## 2038-39

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2038 through June 30, 2039

Year of forecast: 18  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2038-39: 167.3%

Beginning reserve balance: \$789,493

Recommended reserve contribution: + \$159,600  
Estimated interest earned (2.0% PROJECTED yield rate): + \$17,327  
Total contributions: = \$176,927

#### The Hillsmere Shores Marina

### 2038-39 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Well Pump and Pressurization System - Main Marina	1	deferrable	6.993	(\$5,855)
Total expenditures:				(\$5,855)
			Ending reserve balance:	<u>\$960,565</u>





1.404.2039

## 2039-40

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2039 through June 30, 2040

Year of forecast: 19  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2039-40: 172.1%

Beginning reserve balance: \$960,565

Recommended reserve contribution: + \$164,200  
Estimated interest earned (2.0% PROJECTED yield rate): + \$18,633  
Total contributions: = \$182,833

#### The Hillsmere Shores Marina

### 2039-40 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Boat Lifts	1	deferrable	6.105	(\$129,108)
Pilings (5% every 5 years)	1	deferrable	6.747	(\$92,958)
Total expenditures:				(\$222,066)
				Ending reserve balance: <u>\$921,332</u>

## 2040-41

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2040 through June 30, 2041

Year of forecast: 20  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2040-41: 177.1%

Beginning reserve balance: \$921,332

Recommended reserve contribution: + \$169,000  
Estimated interest earned (2.0% PROJECTED yield rate): + \$19,461

**Total contributions: = \$188,461**

#### The Hillsmere Shores Marina

### 2040-41 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$8,857)
Landscape	1	discretionary	6.541	(\$17,714)
Pump Station - Main Marina	1	deferrable	6.757	(\$10,628)
Rip Rap Augmentation - Main Marina	1	deferrable	6.857	(\$28,342)
<b>Total expenditures:</b>				<b>(\$65,540)</b>
			Ending reserve balance:	<u>\$1,044,253</u>



1.404.2041

# 2041-42

**Hybrid Reserve Expenditures and Funding Plan**  
July 1, 2041 through June 30, 2042

Year of forecast: 21  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2041-42: 182.3%

Beginning reserve balance: \$1,044,253

Recommended reserve contribution: + \$173,900  
Estimated interest earned (2.0% PROJECTED yield rate): + \$22,513  
**Total contributions: = \$196,413**

The Hillsmere Shores Marina

## 2041-42 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gate Operator	1	discretionary	6.421	(\$11,119)
Total expenditures:				(\$11,119)
			Ending reserve balance:	\$1,229,547



1.404.2042

## 2042-43

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2042 through June 30, 2043

Year of forecast: 22  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2042-43: 187.6%

Beginning reserve balance: \$1,229,547

Recommended reserve contribution: + \$178,900  
Estimated interest earned (2.0% PROJECTED yield rate): + \$24,214  
Total contributions: = \$203,114

#### The Hillsmere Shores Marina

### 2042-43 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Kayak Racks (5 of 30 every 5 years)	1	deferrable	6.537	(\$8,753)
Piers - Main Marina (newer)	1	deferrable	6.665	(\$207,816)
Total expenditures:				(\$216,568)
				Ending reserve balance: <u>\$1,216,093</u>



1.404.2043

## 2043-44

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2043 through June 30, 2044

Year of forecast: 23  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2043-44: 193.0%

Beginning reserve balance: \$1,216,093

Recommended reserve contribution: + \$184,100  
Estimated interest earned (2.0% PROJECTED yield rate): + \$18,316  
Total contributions: = \$202,416

#### The Hillsmere Shores Marina

### 2043-44 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Bulkheads at Main Marina - Wood	2	deferrable	6.202	(\$434,246)
Bulkheads - Steel	1	deferrable	6.204	(\$308,797)
Light Poles and Fixtures - Main Marina (1)	1	deferrable	6.601	(\$41,688)
Total expenditures:				(\$784,731)
Ending reserve balance:				<u>\$633,778</u>



1.404.2044

## 2044-45

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2044 through June 30, 2045

Year of forecast: 24  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2044-45: 198.6%

Beginning reserve balance: \$633,778

Recommended reserve contribution: + \$189,400  
Estimated interest earned (2.0% PROJECTED yield rate): + \$7,639  
Total contributions: = \$197,039

#### The Hillsmere Shores Marina

### 2044-45 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Bulkheads at Main Marina - Wood	2	deferrable	6.202	(\$446,839)
Dredging	1	deferrable	-	(\$119,157)
Pilings (5% every 5 years)	1	deferrable	6.747	(\$107,241)
Security System - Cameras	1	discretionary	6.957	(\$19,860)
Total expenditures:				(\$693,098)
				Ending reserve balance: <u>\$137,719</u>



1.404.2045

## 2045-46 (Threshold)

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2045 through June 30, 2046

Year of forecast: 25  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2045-46 (Threshold): 204.4%

Beginning reserve balance: \$137,719

Recommended reserve contribution: + \$194,900  
Estimated interest earned (2.0% PROJECTED yield rate): + \$2,578

**Total contributions: = \$197,478**

#### The Hillsmere Shores Marina

### 2045-46 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$10,218)
Landscape	1	discretionary	6.541	(\$20,435)
Pavement Replacement - Sunset Drive Boat Ramp (1)	1	deferrable	6.662	(\$181,876)
<b>Total expenditures:</b>				<b>(\$212,529)</b>
Ending reserve balance:				<u>\$122,668</u>



1.404.2046

## 2046-47

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2046 through June 30, 2047

Year of forecast: 26  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2046-47: 210.3%

Beginning reserve balance: \$122,668

Recommended reserve contribution: + \$200,600  
Estimated interest earned (2.0% PROJECTED yield rate): + \$4,264

Total contributions: = \$204,864

The Hillsmere Shores Marina

### 2046-47 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Signs (1)	1	discretionary	6.961	(\$19,556)
Total expenditures:				(\$19,556)
			Ending reserve balance:	<u>\$307,976</u>





1.404.2047

## 2047-48

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2047 through June 30, 2048

Year of forecast: 27  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2047-48: 216.4%

Beginning reserve balance: \$307,976

Recommended reserve contribution: + \$206,400  
Estimated interest earned (2.0% PROJECTED yield rate): + \$8,019

**Total contributions: = \$214,419**

#### The Hillsmere Shores Marina

### 2047-48 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Kayak Racks (5 of 30 every 5 years)	1	deferrable	6.537	(\$10,098)
Life Rings	1	deferrable	6.547	(\$10,386)
<b>Total expenditures:</b>				<b>(\$20,484)</b>
				Ending reserve balance: <u>\$501,911</u>



1.404.2048

## 2048-49

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2048 through June 30, 2049

Year of forecast: 28  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2048-49: 222.7%

Beginning reserve balance: \$501,911

Recommended reserve contribution: + \$212,400  
Estimated interest earned (2.0% PROJECTED yield rate): + \$11,049  
Total contributions: = \$223,449

The Hillsmere Shores Marina

### 2048-49 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Boat Ramps (1 of 2 every 20 years)	1	deferrable	6.107	(\$111,327)
Total expenditures:				(\$111,327)
			Ending reserve balance:	<u>\$614,033</u>



1.404.2049

## 2049-50

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2049 through June 30, 2050

Year of forecast: 29  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2049-50: 229.1%

Beginning reserve balance: \$614,033

Recommended reserve contribution: + \$218,600  
Estimated interest earned (2.0% PROJECTED yield rate): + \$10,347  
Total contributions: = \$228,947

#### The Hillsmere Shores Marina

### 2049-50 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Bulkheads at Sunset Boat Ramp - Wood	1	deferrable	6.203	(\$137,467)
Piers - Sunset Drive Boat Ramp (newer)	1	deferrable	6.667	(\$150,755)
Pilings (5% every 5 years)	1	deferrable	6.747	(\$123,720)
Total expenditures:				(\$411,942)
Ending reserve balance:				<u>\$431,039</u>



1.404.2050

## 2050-51

### Hybrid Reserve Expenditures and Funding Plan

July 1, 2050 through June 30, 2051

Year of forecast: 30  
Annual CONSTRUCTION inflation rate: 2.9%  
Compounded CONSTRUCTION inflation in 2050-51: 235.8%

Beginning reserve balance: \$431,039

Recommended reserve contribution: + \$224,900  
Estimated interest earned (2.0% PROJECTED yield rate): + \$8,630  
Total contributions: = \$233,530

#### The Hillsmere Shores Marina

### 2050-51 Expenditures (inflated)

	Number of phases	Flexibility	Engineering Data Section	
Electrical Hook-ups - Main Marina (replace outlets)	1	deferrable	6.262	(\$63,654)
Gravel Augmentation - Main Marina Parking Area	1	deferrable	6.417	(\$11,788)
Landscape	1	discretionary	6.541	(\$23,576)
Pier - Kayak Ramp	1	deferrable	6.669	(\$73,084)
Pump Station - Main Marina	1	deferrable	6.757	(\$14,145)
Rip Rap Augmentation - Main Marina	1	deferrable	6.857	(\$37,721)
Total expenditures:				(\$223,967)
Ending reserve balance:				<u>\$440,601</u>

<b>PIERS &amp; HARBOR BUDGET</b>				
	<b>2019 Budget</b>	<b>2019 Actual</b>	<b>2020 Budget</b>	<b>2021 Budget</b>
<b>Ordinary Income/Expense</b>				
<b>Income</b>				
<b>Marina Income</b>				
Boat Storage	10,000	8,940	10,000	<b>10,000</b>
Dinghy Rack	4,000	5,175	4,500	<b>5,000</b>
Ramp Keys	10,000	9,320	10,000	<b>10,000</b>
Transient Fees/Misc		624		
Slip Rental	<u>121,000</u>	<u>119,758</u>	<u>121,000</u>	<u><b>128,000</b></u>
<b>Total Marina Income</b>	<b>145,000</b>	<b>143,817</b>	<b>145,000</b>	<b>153,000</b>
<b>Wait List</b>	<u>1,000</u>	<u>1,000</u>	<u>2,000</u>	<u><b>1,000</b></u>
<b>Total Income</b>	<b>146,000</b>	<b>144,817</b>	<b>147,500</b>	<b>154,000</b>
<b>Expense</b>				
<b>Administrative Expenses</b>	<b>13,000</b>	<b>10,502.15</b>	<b>12,000</b>	<b>12,000</b>
<b>General Fund Loan</b>	<b>0</b>	<b>93,974.87</b>	<b>24,000</b>	<b>0</b>
<b>Grounds Maintenance</b>	<b>10,000</b>	<b>2,594.79</b>	<b>10,000</b>	<b>10,000</b>
<b>Insurance</b>	<b>3,000</b>	<b>3,291.25</b>	<b>3,500</b>	<b>3,500</b>
<b>Loan Repayment</b>	<b>44,000</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Repairs and Maintenance</b>	<b>25,000</b>	<b>86,684.70</b>	<b>25,000</b>	<b>50,000</b>
<b>Reserves &amp; Contingency</b>	<b>43,000</b>	<b>0</b>	<b>65,000</b>	<b>72,500</b>
<b>Security</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>Utilities</b>	<u>8,000</u>	<u>4,413.07</u>	<u>8,000</u>	<u><b>6,000</b></u>
<b>Total Expense</b>	<u><b>146,000</b></u>	<u><b>201,460.83</b></u>	<u><b>147,500</b></u>	<u><b>154,000</b></u>

## Summary of Qualifications

Justin J. Maier, P.E., RS  
Partner

### Services

Justin J. Maier is a partner and co-founder of Superior Reserve Engineering and Consulting. Justin J. Maier provides *expert* reserve and transition studies, and property engineering reviews. Properties that have benefited from his experience include townhome associations, condominium associations, planned unit developments, marinas, resorts, hotels, churches and country clubs. These properties vary from complex high rise buildings to vintage buildings of historical significance. He has provided these services to *more than 1,900* properties throughout the United States and worldwide.



### Prior Experience

Prior to co-founding Superior Reserve with Nik J. Clark, Mr. Maier had conducted reserve and transition studies with Reserve Advisors for 14 years. During this time, he was the Director of Product Development where he oversaw the development, improvement and production efficiency of reserve and transition studies for the firm. He was the leading producer of reserve and transition studies. Mr. Maier was instrumental in improving the quality of reports both in content, clarity and appearance. Reserve Advisors experienced tremendous success based on the standard of reserve and transition study quality that he implemented.

Mr. Maier was a structural engineer for Wausau Window and Wall Systems. There he analyzed stresses in horizontal and vertical components of aluminum frame curtain wall window systems in projects throughout the United States for both wind pressure and suction loads. He was involved in field work to correct improperly installed system components.

Mr. Maier was an Assistant Engineer for Crest Consulting Engineers. His services required on-site field investigation of architectural and structural failures, analysis of the preexisting design and conditions, and determination of the design shortfalls or owner modifications that caused the failures. He designed remedial repairs, produced cost estimates for the repairs, prepared the specifications and oversaw the implementation of the repairs.

### Expert Witness

Through the expert witness of Mr. Maier, the Villages at Cumberland Trail in Columbus, Ohio and The Retreat Homeowners Association in Indianapolis, Indiana were able to successfully negotiate a settlement for their construction defects.

### Education

Milwaukee School of Engineering (MSOE) - Bachelors of Science in Architectural Engineering

### Professional Affiliations

Professional Engineer (P.E.) - licenses held in WI, IL, OH, NY, TX, DC, VA, MD, MI, MN, PA  
Reserve Specialist (RS) - credential awarded by Community Association's Institute (CAI)  
Certified Pool / Spa Operator - issued by the National Swimming Pool Foundation

## **Terms, Conditions and Limitations**

- 1) Superior Reserve Engineering & Consulting (SREC) will perform a visual inspection of the property. While due diligence will be exercised during the onsite inspection, we make no representations regarding latent or hidden defects not observable from a visual inspection. We do not conduct invasive or destructive testing nor provide an exhaustive review of building code compliance. Material testing, core sampling, performance testing of building or site elements and equipment is not part of the scope of work.
- 2) Our opinions of estimated costs and remaining useful lives are not a guarantee of the actual costs of replacement, a warranty of the common elements or other property elements, or a guarantee of remaining useful lives.
- 3) SREC may rely on information provided to us, by the client named in this contract, in our report. We assume information provided to us by the client to be correct and assume no liability for the accuracy of information provided to us by the client. You agree to indemnify and hold us harmless against and from any and all losses, claims, actions, damages, expenses or liabilities, including reasonable attorneys' fees, to which we may become subject in connection with this engagement, because of any false, misleading or incomplete information which we have relied upon as supplied by you or others under your direction, or which may result from any improper use or reliance on the report by you or third parties under your control or direction.
- 4) Our Reserve Study Report in whole or part is not and cannot be used as a design specification, design engineering services or an appraisal.
- 5) Substances such as asbestos, urea-formaldehyde foam insulation, other chemicals, toxic wastes, environmental mold or other potentially hazardous materials could, if present, adversely affect the validity of this study. Unless otherwise stated in this report, the existence of hazardous substance, that may or may not be present on or in the property, was not considered. Our opinions are predicated on the assumption that there are no hazardous materials on or in the property. We assume no responsibility for any such conditions. We are not qualified to detect such substances, quantify the impact, or develop the remedial cost.
- 6) In the event of errors in our report, SREC's liability is limited to the cost of this study.

**Boat Lifts**

<b>Manufacturer:</b>	<i>Boat Lifts Unlimited</i>
<b>Overall condition:</b>	good
<b>Specific condition:</b>	no visible deterioration
<b>Quantity (each):</b>	8
<b>Cost (\$/each):</b>	\$9,375
<b>Current total cost:</b>	<b>\$75,000</b>
<b>Cost per owner:</b>	\$610
<b>Operating expenses:</b>	repairs and component replacements



boat lifts



boat lift



boat lift



### Boat Ramps

<b>Material:</b>	concrete
<b>Locations:</b>	Sunset Drive boat ramp and Beach Drive boat ramp
<b>Overall condition:</b>	<b>new to poor</b>
<b>Specific condition:</b>	ramp at Sunset Drive was replaced in 2019 and ramp at Beach Drive was replaced in 2008
<b>Quantity (each):</b>	2
<b>Cost (\$/each):</b>	\$50,000
<b>Current total cost:</b>	<b>\$100,000</b>
<b>Cost per owner:</b>	\$813



boat ramp at Sunset Drive



boat ramp



boat ramp at Beach Drive



boat ramp



**Bulkheads at Main Marina - Wood**

<b>Material:</b>	wood
<b>Locations:</b>	main marina
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	normal aging
<b>Quantity (linear feet):</b>	750
<b>Cost (\$/linear foot):</b>	\$600
<b>Current total cost:</b>	<b>\$450,000</b>
<b>Cost per owner:</b>	\$3,659



wood bulkhead at main marina



bulkhead overview



wood bulkhead



overview of bulkhead

**Bulkheads at Sunset Boat Ramp - Wood**

<b>Material:</b>	wood
<b>Locations:</b>	Sunset Drive boat ramp
<b>Overall condition:</b>	good
<b>Specific condition:</b>	no visible deterioration
<b>Quantity (linear feet):</b>	100
<b>Cost (\$/linear foot):</b>	\$600
<b>Current total cost:</b>	<b>\$60,000</b>
<b>Cost per owner:</b>	\$488



wood bulkhead at Sunset boat ramp



overview of bulkhead



**Bulkheads - Steel**

<b>Material:</b>	steel
<b>Locations:</b>	Sunset Drive boat ramp, Beach Drive boat ramp
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	normal aging
<b>Quantity (linear feet):</b>	200
<b>Cost (\$/linear foot):</b>	\$800
<b>Current total cost:</b>	<b>\$160,000</b>
<b>Cost per owner:</b>	\$1,301



steel bulkhead at Beach Drive boat ramp



steel bulkhead



bulkhead at Sunset Drive boat ramp



### Electrical Hook-ups - Main Marina

Overall condition:	satisfactory to poor
Specific condition:	32 outlets scheduled to be replaced with electrical hook-ups
Quantity (each):	54
Cost (\$/each):	\$840
Current total cost:	\$45,000



electrical hook-up



electrical hook-up



outlet scheduled to be replaced with electrical hook-up



outlet scheduled to be replaced with electrical hook-up

**Electrical Hook-ups - Sunset Drive Boat Ramp**

<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	no known deficiencies
<b>Quantity (each):</b>	6
<b>Cost (\$/each):</b>	\$840
<b>Current total cost:</b>	<b>\$5,000</b>



electrical hook-up



electrical hook-up



**Electrical Hook-ups - Beach Drive Boat Ramp**

<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	no known deficiencies
<b>Quantity (each):</b>	4
<b>Cost (\$/each):</b>	\$840
<b>Current total cost:</b>	<b>\$3,400</b>



electrical hook-up



electrical hook-up

**Electrical Panels - Main Marina**

<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	no known deficiencies
<b>Quantity (each):</b>	7
<b>Cost (\$/each):</b>	\$20,000
<b>Current total cost:</b>	<b>\$140,000</b>
<b>Cost per owner:</b>	\$1,138



circuit breaker panels (quantified as one panel)



circuit breaker panel



electrical panel



two electrical panels



**Gravel Augmentation - Main Marina Parking Area**

<b>Material:</b>	gravel
<b>Overall condition:</b>	<b>fair to poor</b>
<b>Specific condition:</b>	erosion, wear and standing water
<b>Quantity (square feet):</b>	26,000
<b>Current total cost:</b>	<b>\$5,000</b>
<b>Cost per owner:</b>	\$41
<b>Operating expenses:</b>	interim augmentation



gravel at main marina



gravel and standing water



standing water



gravel overview

**Gate Operator**

**Location:** main marina

**Operator manufacturer:** *Vanguard*

**Gate operation:** single swing

**Overall condition:** **poor**

**Specific condition:** electrical deficiency

**Number of operators (each):** 1

**Total operator cost:** **\$6,100**

**Operator cost per owner:** \$50

**Operating expenses:** interim replacements



Vanguard gate operator



access point



**Gates**

<b>Material:</b>	metal
<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	normal aging
<b>Quantity (each):</b>	5
<b>Cost (\$/each):</b>	\$2,000
<b>Current total cost:</b>	<b>\$10,000</b>
<b>Cost per owner:</b>	\$81
<b>Operating expenses:</b>	painting



gate at main marina



gate at Sunset Drive boat ramp



gate at Beach Drive boat ramp



gate at kayak ramp



### Kayak Racks

<b>Material:</b>	wood
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	various ages and conditions
<b>Quantity (each):</b>	30
<b>Cost (\$/each):</b>	\$940
<b>Current total cost:</b>	<b>\$28,000</b>
<b>Cost per owner:</b>	\$228
<b>Operating expenses:</b>	interim repairs



kayak rack



kayak rack



kayak racks



kayak rack



## Landscape

**Locations served:** main marina, Sunset Drive boat ramp, Beach drive boat ramp, boat park and kayak ramp

**Budgetary amount (note 1):** \$10,000

**Cost per owner:** \$81

**Operating expenses:** mowing, trimming, flowers, sod, mulch, etc.

**Components:**

- trees
- bushes
- benches
- picnic tables
- rain gardens

Actionable recommendations: Landscape replacement timing is discretionary. Annual operating budgets should include funds for mowing, trimming, flowers and replacement of a limited amount of dead landscape. We include an allowance for periodic partial replacements of landscape to include replacement of overgrown bushes or trees as the property sees necessary. Overgrown bushes and trees can cause damage to adjacent components. Although unpredictable, this allowance could also be used for any landscape that has died from drought, disease, etc.



landscape at main marina



rain garden at kayak ramp



landscape at boat park



picnic table

(note 1) Replacement of all the landscape in a single event is unlikely. Instead, we include an allowance for periodic partial replacements.



### Life Rings

<b>Manufacturer:</b>	<i>Cheyenne Livestock and Products, Inc.</i>
<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	normal weathering
<b>Quantity (each):</b>	6
<b>Cost (\$/each):</b>	\$800
<b>Current total cost:</b>	<b>\$4,800</b>
<b>Cost per owner:</b>	\$39



life ring



life ring



life ring

### Light Poles and Fixtures - Main Marina

<b>Pole material:</b>	wood
<b>Quantity of poles (each):</b>	9
<b>Pole height (feet):</b>	12
<b>Fixture material:</b>	metal
<b>Quantity of fixtures (each):</b>	9
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	normal weathering
<b>Location:</b>	Main Marina
<b>Average cost (\$/each):</b>	\$2,400
<b>Current total cost:</b>	<b>\$21,600</b>
<b>Cost per owner:</b>	\$176
<b>Assumptions:</b>	reuse of existing subterranean electrical supply wiring
<b>Operating expenses:</b>	painting, bulb replacement
<b>Cost includes:</b>	remove existing install new light poles and fixtures

Green ideas: We observed lights at the main marina that were operating during daylight. The property should replace the sensors or install light bulbs with daylight sensors. The property could also consider the installation of solar lights to illuminate the Main Marina. The following website provides solar lights: [www.emberled.com](http://www.emberled.com).



wood light pole with metal light fixture



metal fixture



light operating during daylight

### Light Poles and Fixtures - Sunset Drive Boat Ramp

<b>Pole material:</b>	wood
<b>Quantity of poles (each):</b>	2
<b>Pole height (feet):</b>	20
<b>Fixture material:</b>	metal
<b>Quantity of fixtures (each):</b>	2
<b>Overall condition:</b>	fair
<b>Specific condition:</b>	normal weathering
<b>Location:</b>	Sunset Drive Boat Ramp
<b>Average cost (\$/each):</b>	\$2,500
<b>Current total cost:</b>	<b>\$5,000</b>
<b>Cost per owner:</b>	\$41
<b>Assumptions:</b>	reuse of existing subterranean electrical supply wiring
<b>Operating expenses:</b>	painting, bulb replacement
<b>Cost includes:</b>	remove existing install new light poles and fixtures



wood light pole with metal light fixture



light pole and fixture



**Light Poles and Fixtures - Beach Drive Boat Ramp**

<b>Pole material:</b>	wood
<b>Quantity of poles (each):</b>	3
<b>Pole height (feet):</b>	20
<b>Fixture material:</b>	metal
<b>Quantity of fixtures (each):</b>	3
<b>Overall condition:</b>	fair
<b>Specific condition:</b>	normal weathering
<b>Location:</b>	Beach Drive Boat Ramp
<b>Average cost (\$/each):</b>	\$2,500
<b>Current total cost:</b>	<b>\$7,500</b>
<b>Cost per owner:</b>	\$61
<b>Assumptions:</b>	reuse of existing subterranean electrical supply wiring
<b>Operating expenses:</b>	painting, bulb replacement
<b>Cost includes:</b>	remove existing install new light poles and fixtures



wood light pole with metal light fixture



light pole and fixture



light pole and fixture



### Lighting - Main Marina Piers

<b>Material:</b>	metal
<b>Quantity of fixtures (each):</b>	25
<b>Overall condition:</b>	<b>fair to poor</b>
<b>Specific condition:</b>	rust at bases
<b>Location:</b>	main marina piers
<b>Average cost (\$/each):</b>	\$600
<b>Current total cost:</b>	<b>\$15,000</b>
<b>Cost per owner:</b>	\$122
<b>Assumptions:</b>	reuse of existing electrical supply wiring
<b>Operating expenses:</b>	painting, bulb replacement
<b>Cost includes:</b>	remove existing install new lights

Green ideas: We observed lights at the main marina piers that were operating during daylight. The property should replace the sensors or install light bulbs with daylight sensors. The property could also consider the installation of solar lights to illuminate the Main Marina. The following website provides solar lights: [www.emberled.com](http://www.emberled.com).



main marina pier light



rust at base of light



light overview



light operating during daylight



**Pavement Replacement - Main Marina**

<b>Material:</b>	asphalt
<b>Location:</b>	main marina
<b>Overall condition:</b>	fair
<b>Specific condition:</b>	cracks and settlement
<b>Typical traffic type:</b>	delivery and residential vehicles
<b>Quantity (square yards):</b>	260
<b>Repaving method:</b>	replacement
<b>Cost (\$/square yard):</b>	\$55
<b>Current total cost:</b>	<b>\$14,000</b>
<b>Cost per owner:</b>	\$114
<b>Operating expenses:</b>	crack repairing and patching
<b>Anticipated costs:</b>	remove pavement, regrade & augment base install 4 inches of new pavement replace speed bumps (1 each)



asphalt pavement at main marina



cracks in pavement



settlement



cracks in pavement



### Pavement Replacement - Sunset Drive Boat Ramp

<b>Material:</b>	asphalt
<b>Location:</b>	Sunset Drive Boat Ramp
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	minor deterioration
<b>Typical traffic type:</b>	residential vehicles and boat trailers
<b>Quantity (square yards):</b>	1,050
<b>Repaving method:</b>	replacement
<b>Cost (\$/square yard):</b>	\$85
<b>Current total cost:</b>	<b>\$89,000</b>
<b>Cost per owner:</b>	\$724
<b>Operating expenses:</b>	crack repair, patch and seal coat
<b>Anticipated costs:</b>	remove pavement, regrade & augment base install 4 inches of permeable pavement

Green ideas: The property has seal coated the asphalt pavement in the past. It is our professional opinion that seal coating asphalt pavement does not extend the useful life of the pavement. Seal coats do not add structural strength to the pavement. Seal coating is also a source of environmental contamination. Many properties opt to save money by \*not\* seal coating their pavement. If the property decides to seal coat for aesthetic reasons, avoid the use of coal tar based pavement seal coats as they pollute waterways. Instead, consider a slurry coat of asphaltic emulsion to provide a sacrificial wearing surface to the pavement. The property should fund this expense through the operating budget.

Engineering solutions: We suspect that the property will require an alternative material for pavement, such as permeable pavement or pavers, to avoid discharging storm water from the pavement into the river. The property could consider permeable pavement which allows storm water to penetrate through the pavement and into the ground. The following website provides information on this repaving practice:  
[http://www.asphaltpavement.org/index.php?option=com\\_content&view=article&id=359&Itemid=863](http://www.asphaltpavement.org/index.php?option=com_content&view=article&id=359&Itemid=863). Our estimate cost of repaving assumes the installation of permeable pavement.



asphalt pavement at Sunset Drive Boat Ramp



pavement overview



asphalt pavement



pavement in good condition



### Pavement Replacement - Beach Drive Boat Ramp

<b>Material:</b>	asphalt
<b>Location:</b>	Beach Drive Boat Ramp
<b>Overall condition:</b>	<b>poor</b>
<b>Specific condition:</b>	cracks and deterioration
<b>Typical traffic type:</b>	residential vehicles and boat trailers
<b>Quantity (square yards):</b>	1,200
<b>Quantity of catch basins:</b>	1
<b>Repaving method:</b>	replacement
<b>Cost (\$/square yard):</b>	\$86
<b>Current total cost:</b>	<b>\$103,000</b>
<b>Cost per owner:</b>	\$837
<b>Operating expenses:</b>	crack repair, patch and seal coat
<b>Anticipated costs:</b>	remove pavement, regrade & augment base install 4 inches of permeable pavement repairs to catch basins (1 each)

Engineering solutions: We suspect that the property will require an alternative material for pavement, such as permeable pavement or pavers, to avoid discharging storm water from the pavement into the river. The property could consider permeable pavement which allows storm water to penetrate through the pavement and into the ground. The following website provides information on this repaving practice:  
[http://www.asphaltpavement.org/index.php?option=com\\_content&view=article&id=359&Itemid=863](http://www.asphaltpavement.org/index.php?option=com_content&view=article&id=359&Itemid=863). Our estimate cost of repaving assumes the installation of permeable pavement.



asphalt pavement at Beach Drive Boat Ramp



pavement at catch basin



pavement deterioration



pavement overview



**Piers - Main Marina**

<b>Material:</b>	wood
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	weathered wood, limited replacements and various ages
<b>Quantity (square feet):</b>	7,100
<b>Cost (\$/square foot):</b>	\$78
<b>Current total cost:</b>	<b>\$554,000</b>
<b>Cost per owner:</b>	\$4,504
<b>Operating expenses:</b>	interim repairs and partial replacements
<b>Anticipated expenses:</b>	wood deck boards wood frames wood pilings mobilization



pier at main marina



weathered deck boards



wood deterioration



newer section of pier



**Piers - Sunset Drive Boat Ramp**

<b>Material:</b>	wood
<b>Overall condition:</b>	new to fair
<b>Specific condition:</b>	weathered wood and various ages
<b>Quantity (square feet):</b>	1,200
<b>Cost (\$/square foot):</b>	\$78
<b>Current total cost:</b>	<b>\$94,000</b>
<b>Cost per owner:</b>	\$764
<b>Operating expenses:</b>	interim repairs and partial replacements
<b>Anticipated expenses:</b>	wood deck boards wood frames wood pilings mobilization



portion of pier replaced in 2019



newer pier



dated pier



dated pier



**Piers - Beach Drive Boat Ramp**

<b>Material:</b>	wood
<b>Overall condition:</b>	fair
<b>Specific condition:</b>	weathering
<b>Quantity (square feet):</b>	900
<b>Cost (\$/square foot):</b>	\$78
<b>Current total cost:</b>	<b>\$70,000</b>
<b>Cost per owner:</b>	\$569
<b>Operating expenses:</b>	interim repairs and partial replacements
<b>Anticipated expenses:</b>	wood deck boards wood frames wood pilings mobilization



pier at Beach Drive



finger pier



overview of pier



weathered wood



**Pier - Kayak Ramp**

<b>Material:</b>	wood
<b>Overall condition:</b>	<b>poor</b>
<b>Specific condition:</b>	wood rot, weathering and unsafe conditions
<b>Quantity (square feet):</b>	400
<b>Cost (\$/square foot):</b>	\$78
<b>Current total cost:</b>	<b>\$31,000</b>
<b>Cost per owner:</b>	\$252
<b>Operating expenses:</b>	interim repairs and partial replacements
<b>Anticipated expenses:</b>	wood deck boards wood frames wood pilings mobilization



pier at kayak ramp



weathered wood



overview of pier



sagging pier



### Pilings

<b>Material:</b>	wood
<b>Overall condition:</b>	good to fair
<b>Specific condition:</b>	various ages and conditions
<b>Quantity (each):</b>	540
<b>Cost (\$/each):</b>	\$2,000
<b>Current total cost (note 1):</b>	<b>\$1,080,000</b>
<b>Cost per owner:</b>	\$8,780



wood piling



overview of piling



wood piling



wood pilings

(note 1) Replacement of all the pilings during a single event is unlikely. Instead, we assume periodic replacements of limited quantities. In addition, replacement of pilings is included with replacement of each pier.

**Pump Station - Main Marina**

<b>Manufacturer:</b>	<i>Keco</i>
<b>Overall condition:</b>	new
<b>Specific condition:</b>	no visible deterioration
<b>Quantity (each):</b>	1
<b>Current total cost:</b>	<b>\$6,000</b>
<b>Cost per owner:</b>	\$49



pump station at main marina



**Rip Rap Augmentation - Main Marina**

<b>Material:</b>	stone
<b>Overall condition:</b>	new
<b>Specific condition:</b>	no visible deterioration
<b>Quantity (linear feet):</b>	680
<b>Cost (\$/linear foot):</b>	\$24
<b>Current total cost:</b>	<b>\$16,000</b>
<b>Cost per owner:</b>	\$130



rip rap



overview of rip rap



rip rap overview



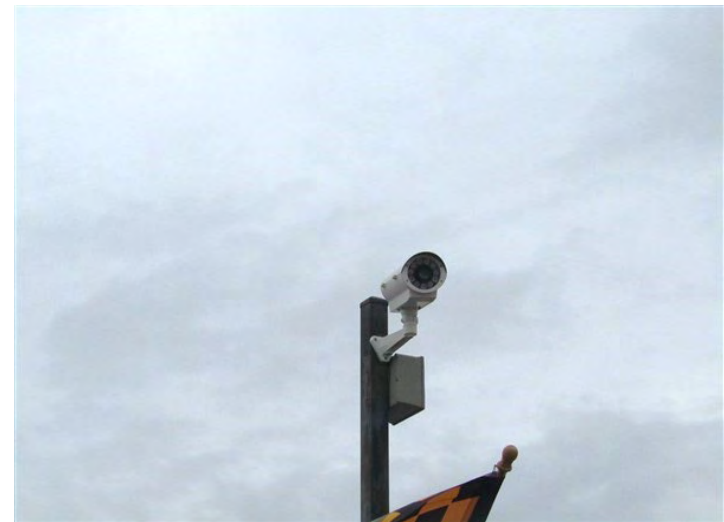
rip rap at main marina

### Security System - Cameras

<b>Operational condition:</b>	satisfactory
<b>Current total cost:</b>	<b>\$10,000</b>
<b>Cost per owner:</b>	\$81
<b>Operating expenses:</b>	interim replacements

**Assumptions:** The replacement cost includes only that amount necessary to recreate the same functionality of the existing system. The cost is only to swap older components for new components and assumes reuse of the existing wiring. Security system electronics rapidly change. An adequate system by today's standard may be antiquated in a few years. It is possible that the existing system will be expanded in the future; however, the scope of the expansion is indeterminate and therefore the expansion cost above the current replacement cost is not a budgetable item. In addition, the increased cost for an improvement and more functional system (above what currently exists) is most appropriately born by future residents after the installation/improvement who will enjoy enhanced functionality. Future reserve study updates can capture and appropriately adjust reserve recommendations so residents who enjoy enhanced functionality will bear the cost of the enhancement (while prior homeowners had contributed appropriately for the consumption of useful life and replacement of the prior system).

<b>Types of devices:</b>	cameras (19) monitor (1) recorder (1)
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camera



cameras



## Signs

<b>Purpose:</b>	property identification
<b>Location:</b>	main marina
<b>Material:</b>	wood
<b>Overall condition:</b>	<b>poor</b>
<b>Specific condition:</b>	weathering and wood rot
<b>Quantity (each):</b>	3
<b>Cost per sign:</b>	\$3,100
<b>Current total cost:</b>	<b>\$9,300</b>
<b>Cost per owner:</b>	\$76
<b>Operating expenses:</b>	painting
<b>Anticipated costs:</b>	plaques posts wood railings

Green ideas: The property could consider the installation of solar lights to illuminate the signs. The following website provides solar lights for signs: [www.emberled.com](http://www.emberled.com)



property identification sign



property identification sign



wood rot



property identification sign and wood railing



### Piping - Piers

<b>Materials:</b>	rubber, plastic and metal
<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	no known deficiencies
<b>Quantity (linear feet):</b>	2,700
<b>Current total cost:</b>	<b>\$94,000</b>
<b>Cost per owner:</b>	\$764
<b>Operating expenses:</b>	interim repairs



piping for fire suppression



piping for domestic water



metal piping



plastic and metal piping

**Well Pump and Pressurization System - Main Marina**

<b>Overall condition:</b>	satisfactory
<b>Specific condition:</b>	no known deficiencies
<b>Quantity (each):</b>	1
<b>Current total cost:</b>	<b>\$3,500</b>
<b>Cost per owner:</b>	\$28
<b>Assumptions:</b>	well casing will not require replacement during the next 30 years



pressurization system



well casing