



Elmwood Marina Financial Review

February 2023

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List of Abbreviations

<i>Abbreviation</i>	<i>Description</i>
CAGR	Compound Annual Growth Rate
CPI	Consumer Price Index
LF	Linear feet
MSWP	Michigan State Waterways Program
SF	Square feet
USACE	US Army Corps of Engineers

Introduction

Background

Elmwood Township engaged Pangea Advisors LLC (Pangea) to perform a financial review of Elmwood Marina with the primary objective of analyzing the financial implications of undertaking various investments, with a view to understanding near term, intermediate term, and full long replacement life cycle financial sustainability of the marina. Within this general context, five specific questions were posed by the Township Supervisor:

1. What is your impression of the overall financial position of the Elmwood Marina?
2. What are your thoughts on the Marina rates (seasonal and transient slip fee, launch fees, storage fees, parking fees, mooring ball fees) relative to the financial needs in the near and distant future?
3. What are your recommendations for financing phase 3 improvements, A dock replacement, B dock replacement, C dock replacement, Brewery Creek Parking Lot improvements and maintenance and upkeep for all previously mentioned items?
4. Any recommendations for staffing and wages at the marina?
5. Our Harbormaster has suggested expanding the marina to the south, creating more slips that could accommodate larger boats. Any thoughts on the financial implications?

Report Intent

This report is intended to provide, in financial terms, the current financial position of the marina, how it has arrived at this point, and the financial future ahead, along with a financial assessment of key risks and opportunities the Township may want to consider as it moves forward, with its Phase III development, and beyond. The report has been developed with an intent to provide information that may be helpful to the ownership if it decides to develop a full life cycle master plan for the marina, as recommended in the original land based improvement focus from the 2016 Marina Master Plan.

General Assumptions and Limiting Conditions

To the best of Pangea's knowledge and belief, the statements of fact contained in this report, upon which Pangea bases its analysis and conclusions, are true and correct. Pangea obtained information, estimates, and opinions that underlie this analysis from sources considered reliable and believed to be true and correct. However, Pangea assumes no representation, liability, or warranty for the accuracy of such items nor is such accuracy imposed on Pangea, and such items are subject to corrections, errors, omissions, and withdrawals without notice.

Pangea utilized estimates and assumptions developed in connection with this engagement throughout the analysis presented in this report. Some assumptions, however, inevitably will not materialize, and unanticipated events and circumstances will occur; therefore, actual results achieved may vary from the estimates contained in the accompanying financial analysis.

Infrastructure Investments

Historical

Elmwood Township Marina is the result of 75 years of redevelopment and investment. A summary of the investments to date is presented below.

Table 1 - Elmwood Marina - Investment by Decade

Item	USACE		Elmwood Township Depreciation Schedule						Total
	1950's	1960's	1970's	1980's	1990's	2000's	2010's	2020's	
Marina Investments									
Docks	-	-	-	-	816,951	803,916	167,654	-	1,788,521
Parking	-	-	194,985	227,604	20,321	11,129	659,140	523,842	1,637,020
Buildings	-	-	47,105	27,740	-	80,150	262,091	882,199	1,299,285
Breakwaters	117,441	481,000	-	-	-	-	-	-	598,441
Ramp	-	-	-	-	-	246,458	142,714	-	389,172
TBD	-	-	-	-	-	-	175,612	160,145	335,757
Equipment	-	-	-	8,139	2,402	106,707	39,648	9,736	166,632
Seawall	-	-	-	-	-	77,423	-	-	77,423
Moorings	-	-	-	-	-	830	7,701	-	8,531
Subtotal	117,441	481,000	242,090	263,482	839,674	1,326,613	1,454,561	1,575,923	6,300,783
Marina Adjacent Areas									
Greilickville Harbor Park	-	-	1,670	-	-	579	1,292,381	1,312	1,295,942
Brewery Creek	-	-	-	-	-	-	432,612	-	432,612
Subtotal	-	-	1,670	-	-	579	1,724,993	1,312	1,728,554
Marina Fund Total	117,441	481,000	243,760	263,482	839,674	1,327,192	3,179,554	1,577,235	8,029,337

Under the authorization of the River and Harbor Act of June 30, 1948¹, the harbor was dredged, and a breakwater built in 1950. The USACE dredged a mooring basin 600 feet wide by 1,000 feet long to a depth of 14 feet in the outer 500 feet of the area, and to a depth of 10 feet for the remainder and constructed a single sheet steel pile breakwater approximately 1,300 feet in length. The harbor was modified under provisions of Section 107 of the 1960 River and Harbor Act by the USACE on June 26, 1964, to provide for a detached 420 foot rubble mound breakwater along the south side of the harbor and a 300 foot rubble mound extension to the existing steel pile breakwater.

Figure 1 - Marina - after 1966



After completion of the harbor breakwater structures in 1966, the Township began to expand the marina beyond its origins as a mooring harbor, beginning in the 1970's and 1980's with land-based improvements, largely for parking, and the installation of several buildings that remain in use today.

Docks were initially installed in 1994, with further investment in 2002 and 2003. The boat launch area was improved in 2004, along with a new marina wall. A third dock (C Dock) was added, and other marina improvements were made in 2009 and 2010.

Figure 2 - Marina - 2003



In 2010, \$1.3 million of marina fund resources were invested to rebuild the Greilickville Harbor Park, and an additional \$432,612 was invested in 2012 and 2013 to acquire and improve Brewery Creek land in anticipation of addressing marina parking needs.

¹ Department of the Army Report of the Chief Engineer, 1951, p, 1,797

In 2015, an agreement was reached with CenterPointe Marina allowing for the construction of a 233 foot dock extension to an existing 242 foot dock on and the sharing of revenue with the Township for boats moored along the dock over Township bottomlands.

In 2016, the Township embarked on a multi-phased Marina Master Plan focused on improving land based assets of the marina. Additional ramp and dock improvements were made in 2017, followed by significant Master Plan Phase I and II investments in 2019 and 2020 to construct a new harbormaster building, a fish cleaning station and improve the marina parking facility.

The Township is now poised to begin master plan phase III investments, which includes demolition of existing obsolete structures, enhancement and expansion of the seawall and construction of a new boater bathhouse. Beyond this, the dock systems are reaching the end of their useful lives and will need to be replaced. In addition, to complete the full lifecycle of investment, the harbor breakwater structures are almost 75 years old and MSWP and USACE documents indicate the need to consider maintenance, repair, or replacement work on these structures.

Figure 3 - Marina - 2009 to 2015



Figure 4 - Marina - 2022



Future

Overview

The table below summarizes, by key marina component, estimates of current replacement costs, based on available data (e.g., historical actual costs, master plan estimates and MSWP feasibility study unit cost estimates). The cost to replace all marina structures, over a complete lifecycle of the underlying components, is estimated to be in the range of \$15 to \$22 million in 2023 dollars. The cost, timing and responsibility for this investment is dependent on the remaining useful life of the asset, future inflation, funding capacity and ownership of the individual structure.

Table 2 – Marina Structure Replacement Cost Summary

Component	Est. Install Date	Est. Useful Life	Years in Use	Estimated Replacement Cost (2023 dollars)	USACE Funding Responsibility	Elmwood Township Funding Responsibility	"Consumed" Replacement Cost	Estimated Annual Amortization of Estimated Replacement Cost
MARINA - LAND BASED IMPROVEMENTS								
<i>Buildings</i>								
Harbormaster	2020	50	3	1,100,000	-	1,100,000	66,000	22,000
Fish Cleaning	2020	50	3	260,000	-	260,000	15,600	5,200
Boater's Bath	1973	50	50	3,200,000	-	3,200,000	3,200,000	64,000
Subtotal - Buildings				4,560,000	-	4,560,000	3,281,600	91,200
<i>Other Land Improvements</i>								
Brewery Park Parking	2012	30	11	450,000	-	450,000	165,000	15,000
Parking, Walkways, Landscaping, etc.	2020	30	3	2,600,000	-	2,600,000	260,000	86,667
Subtotal - Other Land Improvements				3,050,000	-	3,050,000	425,000	101,667
Marina Land Based Improvements				7,610,000	-	7,610,000	3,706,600	192,867
MARINA - WATER BASED IMPROVEMENTS								
<i>Docks and Moorings</i>								
Dock A	1994	30	29	1,666,667	-	1,666,667	1,611,111	55,556
Dock B	2003	30	20	1,666,667	-	1,666,667	1,111,111	55,556
Dock C	2009	30	14	1,666,667	-	1,666,667	777,778	55,556
Subtotal - Docks				5,000,000	-	5,000,000	3,500,000	166,667
Moorings Chains and Bolls	2022	15		250,000	-	250,000	250,000	16,667
Subtotal - Docks and Moorings				5,250,000	-	5,250,000	3,750,000	183,333
<i>Other Water Based Improvements</i>								
Boat Ramps and Piers	2004	30	19	1,000,000	-	1,000,000	633,333	33,333
Seawall	2004	30	19	1,000,000	-	1,000,000	633,333	33,333
Breakwater - Steel Pile	1950	75	73	2,200,000	2,200,000	-	-	-
Breakwater - Rock Mound Revetment	1966	75	57	4,500,000	4,500,000	-	-	-
Subtotal - Other Water Based Improvements				8,700,000	6,700,000	2,000,000	1,266,667	66,667
Marina Water Based Improvements				13,950,000	6,700,000	7,250,000	5,016,667	250,000
MARINA - EQUIPMENT	2022	7		200,000	-	200,000	200,000	28,571
MARINA - ASSET TOTALS				21,760,000	6,700,000	15,060,000	8,923,267	471,438

Based on the estimated construction dates and useful life of each marina component, it is estimated that roughly \$9 million of the \$15 million replacement cost liability that the Township is responsible for funding has already been "consumed". This suggests that, if the Township marina fund balance was equal to \$9 million (with no debt), invested in assets earning returns equal to or better than inflation, and additional funds added annually by an amount equal to the amortization of the then current expected replacement value of the marina infrastructure (2023: \$471,438), the marina fund should, conceptually, be self-sustaining and able to fund future infrastructure

investments without incurring the additional frictional costs of debt funding. The marina fund cash balance at 12/31/22 was \$1.4 million and 2022 operating cash flow before non-marina items was roughly \$490 thousand.

Review of Infrastructure Replacement Cost Estimates

Construction and replacement cost estimates were derived from several sources:

- The Elmwood Township Capital Improvement Plan draft dated November 15, 2022, was used to understand planned near term investments as presented to the Township Board
- Construction cost estimates for Phase I, II and III of the Elmwood Township Marina Master Plan were used for most land-based improvements. For Phase I and Phase II investments, which were made in 2019 and 2020, amounts were first brought forward to 2023 dollars, and then projected forward to future replacement cost based on future inflationary expectations. Similarly, for Phase III constructions costs, the estimates dated March 16, 2021 were brought forward to 2023 dollars for financial modelling, with subsequent replacement costs projected based on future inflationary expectations.
- For water-based improvements, the MSWP Facilities Condition Assessment cost and useful life estimates informed replacement cost and timing estimates for dock, ramp, utility and breakwater structures ²
- For equipment related assets identified in the marina asset depreciation schedule, a rough estimate (\$200,000) was made for future replacement costs. A similar rough estimate was made for the replacement costs of buoy mooring equipment (\$250,000).

Township Capital Improvement Plan – Marina Items

The Township Capital Improvement Plan includes \$7.5 million of marina infrastructure investment over the next five years, as summarized in the table below. Most of this investment (\$5 million) is to finalize the land improvements contemplated in the 2016 Marina Master Plan – construct a new boater pavilion, improve the seawall to protect the new building and improve the parking area and amenities adjacent to the new facility. Roughly \$2.1 million relates to anticipated dock replacement and improvement, with \$413,000 related to parking and other improvements to the Brewery Creek parking area.

Table 3 - Township Capital Improvement Plan - Marina Items

Project Area	2023	2024	2025	2026	TBD	Total
Marina Phase 3	-	5,000,000	-	-	-	5,000,000
A-Dock Replacement	-	-	-	1,500,000	-	1,500,000
C-Dock Addition	-	-	500,000	-	-	500,000
Brewery Park Parking Lot Improvements	-	-	-	-	413,000	413,000
A-Dock Launch Replacement	-	42,000	-	-	-	42,000
Marina Security System	-	20,000	-	-	-	20,000
Marina Storage Garage	-	20,000	-	-	-	20,000
Marina boat	15,000	-	-	-	-	15,000
B-Dock Rebuild Launch	-	10,000	-	-	-	10,000
	<u>15,000</u>	<u>5,092,000</u>	<u>500,000</u>	<u>1,500,000</u>	<u>413,000</u>	<u>7,520,000</u>

² See [MSWP Facilities Assessment Report dated January 2020](#). Pages 1,260 and 1,261 of Appendix G includes detailed unit cost estimates for individual marina components. Pages 506 to 510 include a detailed assessment of Elmwood Township Marina facility conditions and indicative replacement cost estimates and timetables. Pages 19 to 23 and 1,275 provide an overview of the MSWP cost and life cycle estimating methodology for each high level marina component (e.g., break waters, docks, etc.).

Phase III Construction Cost Estimates

During Phase III, roughly 45,500 SF currently occupied by parking and several buildings will be demolished and replaced with an updated seawall, parking, and a new boater pavilion. This Phase is subdivided into the following components:

- Phase 3A – demolish existing buildings and increase 400 LF of seawall height by 18 inches and extend its length by 135 LF along Brewery Creek to provide added flood protection for the marina and the planned boater pavilion
- Phase 3B – construct a new 4,186 SF boater pavilion to replace existing obsolete building
- Phase 3C –install parking, sidewalks, landscaping and amenities, and adjust dock connections (e.g., utilities, ramp, etc.) after changes to seawall

Phase III construction cost estimates, developed on March 21, 2021, total \$5.4 million. Adjusting the estimate to 2023 dollars using the consumer price index for historical periods, and a 4.5% estimate of inflation for 2023, results in a current dollar replacement cost of \$6.3 million.

Figure 5 - Phase II Improvement Area



Table 4 - Phase III Costs by Component

Row Labels	Sum of Cost	Sum of Cost at 2023
Building	2,723,880	3,195,111
Parking	1,232,686	1,445,940
Sea Wall	814,350	955,233
Sidewalk	228,175	267,649
Landscape	177,735	208,483
Docks	83,290	97,699
Amenity	56,800	66,626
Utilities	55,315	64,884
Grand Total	5,372,231	6,301,627

MSWP Cost Estimates

The table below summarizes repair, maintenance and replacement cost estimates prepared by Edgewater Associates on behalf of the MSWP. The cost estimates exclude mobilization, general conditions, design, permitting or contingency costs. The report, issued on February 24, 2020, was based on unit cost estimates as of October 24, 2019. In some areas, notably breakwater structure ownership, and parking and launch ramp cost estimates appear to be inaccurate. MSWP cost estimates used in this analysis to estimate replacement costs for docks, piers, breakwater, and other structures, as documented in the sections that follow.

Table 5 - Summary of MSWP Cost Estimates

Item	Replacement Timeframe			
	Within Five Years	Five to Ten Years	Ten to Twenty Years	Grand Total
Steel Sheet Pile Single Wall Breakwater	-	1,712,000	-	1,712,000
Traditional Floating Dock	567,248	1,101,128	-	1,668,376
Boat Launch Ramp	672,000	672,000	-	1,344,000
Electric Shore Power ESDP Compliance	-	-	588,000	588,000
Electric Pedestals	-	-	542,000	542,000
Building 2 - Restroom, Harbor Store	-	520,000	-	520,000
Building 3 - Restroom, Laundry	-	480,000	-	480,000
Rock Revetement Offshore Maintenance Type B	-	109,200	273,000	382,200
Ice Supression Compressor System	-	302,400	-	302,400
Wet Fire Suppression System	-	-	168,000	168,000
Potable Water	-	-	134,400	134,400
Dry Standpipe Fire Suppression System	-	-	134,400	134,400
Site Driveway/Approach	-	72,000	-	72,000
Pumpout	-	70,000	-	70,000
Launch Piers	30,000	-	-	30,000
Walkways	-	1,500	28,500	30,000
Picnic Shelter	-	15,000	-	15,000
Unidentified Variance	-	15,000	-	15,000
Flow Inducers	-	12,000	-	12,000
WiFi	-	-	5,000	5,000
Parking Lot Asphalt	-	1,000	-	1,000
	<u>1,269,248</u>	<u>5,083,228</u>	<u>1,873,300</u>	<u>8,225,776</u>

Key differences between the \$8.2 MSWP estimate and the \$21.9 million Marina Replacement Cost Summary estimates in table 2 are \$4.6 million for breakwater structures, \$3.6 million for buildings, \$3 million for parking, \$2 million for docks, and \$1 million for seawall investments.

Marina Fund Depreciation Schedule Assets

The depreciation schedule includes an estimated \$3.5 million recorded book value of investments in the marina fund on December 31, 2022, comprised of docks, buildings, parking, equipment and other assets, with an original cost of \$7.4 million. All assets were categorized as either Marina based assets or Park based assets and were further sub-categorized where possible as water related (docks, ramps, moorings, etc.), land related (parking, building, etc.) or equipment. Included within the Marina Fund is a combination of “enterprise” activity assets – the marina itself - and “public” activity assets, in the form of Greilickville Harbor Park. Excluding the \$1.2 million cost and \$518 thousand book value of non-marina specific invested assets, the marina fund investment in the marina has a cost of \$6.1 million, with a book value of \$3.0 million. There are no assets that reflect any interest the Township may have in the bottomlands or harbor breakwater structures.

The relatively larger investments in parking and buildings reflect recent Marina Master Plan Phase I and Phase II investments in the harbormaster building, the fish cleaning station, and the reconfiguration of most of the marina’s land area, most recently under Phase I and Phase II of the Marina Master Plan. The TBD items relate to differences between available cost documentation and amounts recorded in the marina fund asset ledger that require a finer level of detail for the item recorded in the depreciation schedule to allocate by infrastructure component. The relatively low book values of seawall, docks and moorings is consistent with the deferred maintenance related to these relatively older assets.

Row Labels	Sum of Cost	Sum of Book Value
Marina	6,134,954	3,027,153
0 - TBD	460,172	300,022
TBD	460,172	300,022
1- Land	3,368,918	2,506,245
Parking	2,069,633	1,468,572
Buildings	1,299,285	1,037,673
2 - Water	2,167,570	214,211
Ramp	389,172	120,348
Docks	1,664,107	87,760
Equipment	28,338	5,305
Moorings	8,531	790
Seawall	77,423	8
3 - Other	138,294	6,676
Equipment	138,294	6,676
Park	1,295,942	518,251
Grand Total	7,430,896	3,545,404

Table 6 - Summary of Marina Fund Asset Schedule

Best Estimates of Marina Structures Replacement Costs

What follows is the rationale for infrastructure replacement costs estimates included in the financial model.

Docks

The Township Capital Improvement Plan dated November 15, 2022 includes \$2.1 million for dock replacement. This includes \$1.5 million to replace A Dock, which is said to be several years beyond its useful life plus \$500 thousand for an extension to the C dock, to gain 10 to 15 additional slips.

Based on MSWP unit cost data, the cost of replacing all docks is estimated at \$5 million, or \$1.7 million per dock.

Figure 6 - Dock Area

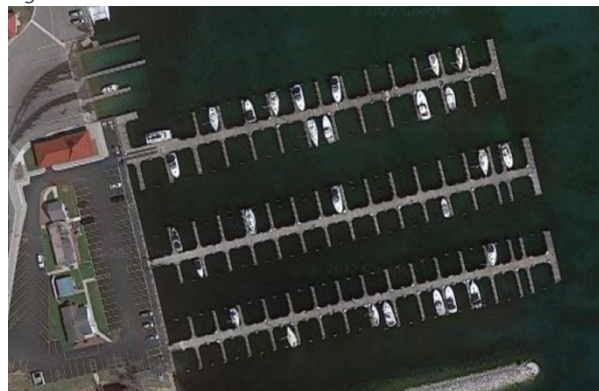


Table 7 - Dock Replacement Cost Estimate

Description	Units		Cost/ Unit (2019)	Total Cost (2019)	Total Cost (2023)
	#	Unit			
Traditional Timber Floating Dock					
Dock A	7,415	SF	75	556,125	664,561
Dock B	7,415	SF	75	556,125	664,561
Dock C	7,415	SF	75	556,125	664,561
Floating Dock Cost Estimate	22,245	SF	75	1,668,375	1,993,683
Potable Water	176	SLIP	800	140,800	168,254
Pedestal - 30 Amp Electric	120	SLIP	3,000	360,000	430,195
Pedestal - 30/50 Amp Electric	56	SLIP	3,500	196,000	234,217
Electric Shore Power ESDP Compliance	176	SLIP	2,500	440,000	525,793
Dry Standpipe Fire System	176	SLIP	800	140,800	168,254
Wet Fire Hydrant System	176	SLIP	1,000	176,000	210,317
Ice Suppression System	176	SLIP	1,600	281,600	336,508
Flow Inducers	12	EA	1,000	12,000	14,340
Air Distribution Lines				-	-
Pumpout	2	EA	35,000	70,000	83,649
Utility Cost Estimate				1,817,200	2,171,526
Total Dock Replacement Cost Estimate				<u>3,485,575</u>	4,165,209
Design, permitting, oversight, mobilization, contingency			20.0%		<u>833,042</u>
					<u>4,998,251</u>

Alternative Dock and Harbor Configurations

Projections of the marina fund are predicated on replacing existing infrastructure with like kind capacity at the end of structural useful life. During the financial review several potential changes to the marina configuration were noted by Township staff that may warrant further review to determine feasibility:

- Extend C dock to add slips
- Adding a D dock
- Expand marina to south

While further discussion is required to understand these scenarios and the potential economic impact on marina fund projections, several basic observations stand out:

- Extending the length of C dock (or A and B docks) may require dredging to move the existing navigation channel at the east of these docks. Indicative MSWP dredging costs (see below) for preliminary planning purposes appear to be around \$48 per cubic yard (2023)
- It is not clear where a D Dock would fit in the current marina configuration.
- Expanding the marina to the south may be cost prohibitive, since it would require the existing 420 foot long rock mound revetment to be moved and additional bottomlands dredging. The replacement construction cost of the revetment is estimated at \$5,000 per linear foot (\$2.1 million)
- An opportunity may exist to assess the feasibility to increase and/or optimize the revenue generation potential through a reconfiguration of the marina dock layout

Launch Ramp and Piers

The marina has six boat launch ramps, supported by three piers, as shown in the image. The Township Capital Improvement Plan dated November 15, 2022 includes:

- \$42 thousand to replace and extend the A ramp launch pier to 95 feet, consistent with the B and C ramp launch piers, and
- \$10 thousand to repair the B ramp launch pier, which is built on a coffer dam that needs to be replaced

The MSWP document includes “Preliminary Cost Estimate Unit Rates” for such piers at \$15,000 each for 5-foot-wide piers 30 feet in length, in 2019 dollars (2023: \$18,000). This suggests a \$57 thousand replacement cost for each pier. The MSWP document contemplates periodic replacement of the ramp area based on an estimated area of 9,600 SF and a cost of \$70 per SF in 2019 dollars (2023: \$84), resulting in a replacement cost of \$672,000 (2023: \$806,400), with an expectation of replacement in five years (2025) and again in 10 years (2030). Based on Google Maps measurements, the concrete ramp area appears to be more in the range of 5,750 SF (115 feet wide by 50 feet long, including 35 feet above water and 15 feet below water), suggesting a lower periodic replacement cost estimate of \$483,000 in 2023 dollars. The estimated total of ramp and pier replacement costs of \$654,000 was rounded to \$1 million.

Figure 7 - Launch Ramp Area

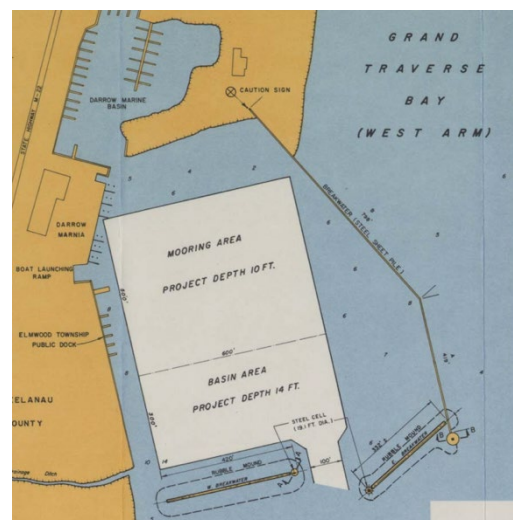


Breakwater Structures

In an email dated 2/2/23, the USACE acknowledges that the “east steel sheet pile wall and the two rubble mound breakwaters were constructed and are now maintained by the Corps of Engineers” and provided a copy of the latest annual survey of the structures, dated October 2022, in which the structure were rated to be in “good” condition. As such, it appears that the costs of maintaining the structures do not fall on the Township.

This USACE information corrects a misstatement of fact included in the MSWP Facilities Assessment Study dated February 24, 2020 that indicated the structures were 100% owned by the Elmwood Township. However, for forward operational (not financial) planning purposes, the MSWP report suggested replacement of the steel sheet pile breakwater within a ten-year horizon (by 2030) at an estimated cost in 2019 dollars of \$1,721,000, and Type B maintenance (for structures rate in very good condition) for the offshore rock revetements, initially within a ten-year horizon (by 2030) at an estimated cost in 2019 dollars of \$109,200, and again within a twenty-year horizon (by 2040) for an additional \$273,000 (2019 dollars).

Figure 8 - USACE “Project” Map



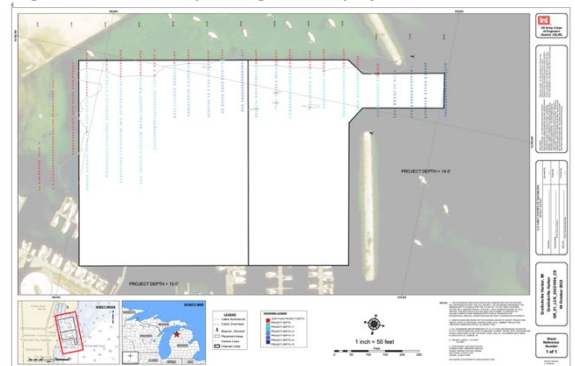
The MSWP report included cost estimates that may be helpful to assess the feasibility of any material changes to the harbor configuration that might be the responsibility of Elmwood Township. For example, the cost to replace

the steel pile component of the breakwater was estimated to be \$1,400 per linear foot, based on mid 2019 pricing - adjusting for inflation to 2023 price levels increases the cost by 21% to roughly \$1,700 per linear foot. Thus, replacing the 1,300 feet steel pile component of the breakwater has an estimated replacement cost of \$2,210,000, before considering design, permitting, demolition and construction contingency cost. Similarly, the MSWP Facilities Assessment Study preliminary cost estimates to replace an offshore rock revetment are \$5,000 per linear foot (2019 dollars). In 2023 dollars, this is roughly \$6,000 per linear foot, before design, permitting, demolition and construction contingency cost. Using an estimated 780 linear feet of existing offshore rock mound revetment (the average of the USACE and MSWP information), results in an estimated \$4.5 million replacement cost for these structures in 2023 dollars. While additional work would be required, this cost would likely make it financially unfeasible for the Township to fund an expansion of the marina to the south of the revetment breakfall, unless outside funding such as the USACE were available.

Dredging

The 2023 Community Park, Recreation, Open Space and Greenways Plan notes that “dredging needs within the harbor and around the marina are minimal to non-existent”, and that dredging at the facility last occurred in 2001, when 970 cubic yards of material were removed from around the boat launch area. USACE records indicate that Greilickville harbor is on a 75 year dredging cycle, was dredged in 1951, and that the next planned dredging is 2026³. Any material expansion or reconfiguration of the marina docks appears likely to require additional dredging to maintain navigable channel to provide access throughout the harbor. The MSWP study estimates dredging costs in 2019 at \$40 per cubic yard (2023: \$48). An alternative data point for planning purposes is a 2022 proposal by Savin Lake Services for \$90,000 to dredge 3,000 to 3,500 cubic yards at the Grace Harbor Marina in Elk Rapids (\$12 to \$30 per cubic yard). The USACE website includes periodic updates of hydrologic surveys of the harbor depths that may be helpful in assessing and estimating dredging volumes to help assess the economic feasibility of reconfiguring the marina to expand slip capacity.⁴

Figure 9 - USACE Hydrologic Survey of Elmwood Harbor



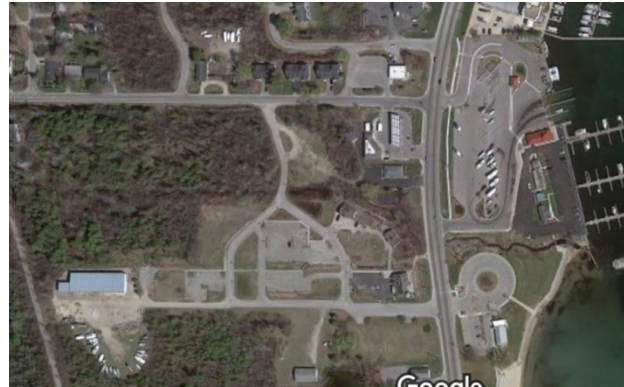
³ USACE, Great Lakes Recreational Boating Report, 2008, page 85

⁴ <https://www.lre.usace.army.mil/Missions/Operations/Greilickville-Harbor-MI/>

Parking

There are several parking areas for marina users. The primary, and closest, parking area lies immediately adjacent to the marina, east of M-22. A secondary parking area, west of M-22 is generally referred to as Brewery Creek. Another, overflow parking area lies at the northwest intersection of M-22 and Cherry Bend Road. The primary parking area and the Brewery Creek parking area are the only parking areas for which replacement cost estimates have been estimated.

Figure 10 - Marina and Brewery Creek Parking Areas



Brewery Creek Parking

The Brewery Creek parking area was acquired by the Township in 2012 for \$400,000. The Township Capital Improvement Plan includes \$413,000 for parking and stormwater improvements, based on a cost estimate prepared November 7, 2022. An updated Preliminary Project Cost Estimate prepared by Wade Trim on January 2, 2023 estimates the project cost at \$441,376.

Marina Area Parking

The primary parking area for Elmwood Marina, to the east of M-22, covers approximately 205,000 SF, based on measurements from Google Earth. Using the MSWP replacement cost for an asphalt parking lot of \$10/SF (2023: \$12/SF), plus engineering service, permitting, mobilization and contingency estimates at 25%, the estimated replacement cost of this parking area is \$3.1 million.

Key Findings and Recommendations

During this review, no single facility asset listing was available that provided an inventory of all marina assets, installation date, useful life, condition, replacement cost or prioritization, in terms of repair, maintenance or replacement. While the marina fund depreciation schedule provided some relevant information in this regard, it was too highly aggregated and, of course, did not provide information about the condition, replacement cost or remaining useful life of the underlying assets. Pages 37 to 42 of the Oyster Point Marina (in San Mateo County, California) Facility Condition Assessment Report⁵ provides an example that may be helpful for long term marina financial and operational planning of its infrastructure investment.

⁵ https://www.smharbor.com/files/720784199/Marina_Condition_Survey_OPM_2014.pdf

Historical Financial Performance

Income Statement

Marina operating income excluding depreciation (essentially operating cash flow) has increased in each year since 2017 except 2018 and is forecast to be approximately \$500,000 in 2022. However, while the ratio of marina operating income excluding depreciation as a percent of marina operating revenue was roughly 61%, it declined to 57% in 2021 and 58% in 2022, due largely with costs increasing faster than revenues.

Table 8 - Income Statement

	Actual					Prelim.
	2017	2018	2019	2020	2021	2022
Income Statement						
Marina Operating Items						
Operating Revenue	670,896	595,297	679,720	711,530	756,987	852,335
Operating Expense	(262,885)	(277,228)	(251,246)	(262,100)	(284,189)	(361,961)
Marina Operating Income excl. Depreciation	408,011	318,069	428,474	449,430	472,798	490,374
Depreciation	(138,055)	(142,354)	(141,754)	(184,464)	(233,262)	(221,035)
Marina Operating Income	269,956	175,714	286,721	264,965	239,536	269,339
Marina Capital Investment and Financing Items						
Capital Investment Expenditure	(40,441)	(14,095)	(210,872)	(13,079)	(67,886)	(57,813)
Grant Funding	32,367	-	89,445	734,065	225,011	10,211
Investment Income	1,777	3,252	21,025	7,601	125	181
Interest on Loans	-	-	-	-	-	-
Marina Capital Investment and Financing Items	(6,297)	(10,843)	(100,402)	728,587	157,249	(47,422)
Non-Marina Items						
Greilickville Harbor Expenses	(38,801)	(39,060)	(40,095)	(43,136)	(42,495)	(82,836)
Transfers Out	(15,000)	-	-	(30,000)	(15,000)	(15,000)
Unidentified Variance	345	(1,279)	934	903	(507)	-
	(53,457)	(40,339)	(39,161)	(72,233)	(58,002)	(97,836)
Marina Fund Change in Net Position	210,203	124,533	147,158	921,319	338,783	124,080
Key Ratios:						
Operating Cash Flow as % of Operating Revenue	60.8%	53.4%	63.0%	63.2%	62.5%	57.5%
Non-Marina Expenses as % of Operating Revenue	-5.8%	-6.6%	-5.9%	-6.1%	-5.6%	-9.7%
Return on Equity - Operating Income	8.8%	5.3%	8.4%	7.4%	5.3%	5.6%
Change in Operating Revenue	15.8%	-11.3%	14.2%	4.7%	6.4%	12.6%
Change in Operating Expenses	-9.7%	5.5%	-9.4%	4.3%	8.4%	27.4%
Change in Operating Cash Flow	41.4%	-22.0%	34.7%	4.9%	5.2%	3.7%
Change in Change in Net Position	108.8%	-40.8%	18.2%	526.1%	-63.2%	-63.4%

Operating Revenue

Marina Fund revenue over the last five years, along with a preliminary estimate for 2022, is presented in the table below. Over this period, operating revenue has grown faster than inflation due to increased dry storage and haul out, boat launch and transient slip revenue, due primarily to higher usage. While seasonal slip fees have generally increased with inflation over this period, other fees have remained mostly unchanged.

Table 9 - Marina Fund Revenue

Description	Actual					Prelim.	CAGR
	2017	2018	2019	2020	2021	2022	
Slip and Buoy Fee - Seasonal	496,641	397,383	475,430	473,783	523,100	580,209	3.2%
Slip and Buoy Fees - Transient	69,013	74,234	74,780	113,541	96,278	105,805	8.9%
Bottomlands Lease	13,742	13,742	14,047	13,827	16,518	17,134	4.5%
Water Area Revenue	579,396	485,358	564,256	601,151	635,897	703,147	3.9%
Boat Launch Revenue	43,167	55,885	57,489	59,777	61,423	69,952	10.1%
Parking	18,335	21,364	21,870	15,179	15,826	22,845	4.5%
Dry Storage and Haul Out Fees	14,629	16,815	21,773	24,027	27,978	45,500	25.5%
Land Area Revenue	32,963	38,179	43,643	39,207	43,805	68,345	15.7%
Ancillary Revenue	15,370	15,874	14,333	11,395	15,862	10,891	-6.7%
Operating Revenue	703,860	633,476	723,363	750,736	800,791	920,680	5.5%
Grant Funding	32,367	-	89,445	734,065	225,011	10,211	-20.6%
Investment Income	1,777	3,252	21,025	7,601	125	181	-36.7%
Total Revenue	738,004	636,729	833,832	1,492,402	1,025,927	931,071	4.8%
Memo: YoY Change in Operating Revenue (%)		-10.0%	14.2%	3.8%	6.7%	15.0%	

By comparison to other public marinas in West Bay, Elmwood Marina has a significantly lower mix of transient slip revenue and no fuel dock revenue, but significantly more boat launch fee and winter storage revenue. Interestingly, Elmwood Marina generates only 27% more seasonal slip revenue than Duncan L. Clinch Marina, despite having twice as many slips.

Table 10 - West Bay Public Marina Revenue Mix

Revenue Source	Revenue - 2022			Revenue Mix - 2022		
	Elmwood	Clinch	Suttons Bay	Elmwood	Clinch	Suttons Bay
Seasonal Boat Wells	597,343	467,100	292,500	70.1%	59.5%	70.3%
Transient Slips	105,805	200,000	97,000	12.4%	25.5%	23.3%
Boat Launch Fees	69,952	800	-	8.2%	0.1%	0.0%
Winter Storage	45,500	-	-	5.3%	0.0%	0.0%
Parking	22,845	10,000	-	2.7%	1.3%	0.0%
Other	10,891	19,400	6,600	1.3%	2.5%	1.6%
Revenue exl. Fuel Dock	852,335	697,300	396,100	100.0%	88.8%	95.3%
Fuel Dock Revenue net of CGS	-	88,000	19,700	0.0%	11.2%	4.7%
Operating Revenue	852,335	785,300	415,800	100.0%	100.0%	100.0%

Operating Expenses

Marina operating expenditures have increased since 2017 at a 6.6% CAGR, largely due to higher growth in occupancy costs, and salaries and benefits. Total marina fund costs have grown at a 9.7% CAGR, due to higher Greilickville Harbor Park expenses and higher depreciation levels following the recent Phase I and Phase II investments in the harbormaster building, the fish cleaning station and land improvements related to parking and circulation at the marina site.

Table 11 - Marina Fund Expenses

<i>Account</i>	<i>Actual</i>					<i>Prelim.</i>	
<i>Account Description</i>	<i>2017</i>	<i>2018</i>	<i>2019</i>	<i>2020</i>	<i>2021</i>	<i>2022</i>	<i>CAGR</i>
Salary and Benefits	163,129	159,341	142,448	152,688	168,727	218,638	6.0%
Occupancy Costs	48,079	64,324	56,615	54,965	61,700	90,651	13.5%
Administrative Costs	36,288	35,497	37,694	38,084	37,593	39,643	1.8%
Misc. Costs	15,389	18,067	14,489	16,363	16,168	13,030	-3.3%
Marina Operating Expenditures	262,885	277,228	251,246	262,100	284,189	361,961	6.6%
Interest on Loans	-	-	-	-	-	-	nm
Capital Investment Expenditures	40,441	14,095	210,872	13,079	67,886	57,813	7.4%
Depreciation Expense	138,055	142,354	141,754	184,464	233,262	221,035	9.9%
Non-Marina Expenses	53,801	39,060	40,095	73,136	57,495	97,836	12.7%
Unidentified Variance	(30,345)	1,279	(934)	(903)	507	-	nm
Total Marina Fund Expenditures	464,838	474,017	643,032	531,876	643,339	738,646	9.7%
Memo: Change in Marina Operating Expenditures	-	-	-	-	-	-	
		5.5%	-9.4%	4.3%	8.4%	27.4%	

On an operational basis, Elmwood Marina expenditures as a percentage of operating revenues for 2022 are higher than Duncan L. Clinch Marina, due to higher Salary and Benefits, Occupancy and Administrative costs. Almost 60% of the higher level of Salary and Benefits can be attributed to lower seasonal slip fees and a lower mix of transient slips at Elmwood Marina that depresses the revenue base by comparison to the Duncan L. Clinch Marina.

Table 12- Comparative Operating Performance - 2022

	\$			as % of Operating Revenues		
	Elmwood Marina	Duncan L. Clinch Marina	Suttons Bay Marina	Elmwood Marina	Duncan L. Clinch Marina	Suttons Bay Marina
Operating Revenues	<u>852,335</u>	<u>785,300</u>	<u>415,800</u>	<u>100.0%</u>	<u>100.0%</u>	<u>100.0%</u>
Salary and Benefits	218,638	167,700	144,710	25.7%	21.4%	34.8%
Occupancy Costs	90,651	55,000	40,100	10.6%	7.0%	9.6%
Administrative Costs	39,643	21,700	28,570	4.7%	2.8%	6.9%
Misc. Costs	13,030	8,000	30,605	1.5%	1.0%	7.4%
Operating Expenses	<u>361,961</u>	<u>252,400</u>	<u>243,985</u>	<u>42.5%</u>	<u>32.1%</u>	<u>58.7%</u>
Operating Income excl. Depreciation	<u>490,374</u>	<u>532,900</u>	<u>171,815</u>	<u>57.5%</u>	<u>67.9%</u>	<u>41.3%</u>

Balance Sheet

The marina fund balance sheet is summarized below. Since the end of 2016, the marina fund net position increased \$1.7 million (50%), due to marina operating income (\$1.2 million) and grant funding (\$1.1 million), offset by capital related expenditures expenses in the income statement (\$364 thousand) and non-marina expenses (\$307 thousand). The cash and cash equivalent balance has remained largely stable, although it declined significantly in 2020.

Table 13 - Marina Fund Balance Sheet

	2017	2018	2019	2020	2021e	2022
Assets						
Cash and Cash Equivalents	1,464,403	1,684,236	1,230,305	497,334	1,053,016	1,399,951
Other Capital Assets, Net of Depreciation	1,856,451	1,732,362	2,211,520	3,592,926	3,371,030	3,149,995
Land	-	-	395,411	395,411	395,411	395,411
Prepays	1,819	2,352	2,481	2,983	5,255	-
Total Assets	3,322,673	3,418,950	3,839,717	4,488,654	4,824,712	4,945,357
Liabilities						
Accounts Payable and Accrued Expenses	3,188	4,932	278,541	6,159	3,434	-
Debt	-	-	-	-	-	-
Total Liabilities	3,188	4,932	278,541	6,159	3,434	-
Net Position						
Capital and Intangible Assets, net of Debt	1,856,451	1,732,362	2,606,931	3,988,337	3,766,441	3,545,406
Restricted	683,123	683,123	683,123	210,635	210,635	210,635
Unrestricted	749,911	998,533	271,122	283,523	844,202	1,189,317
Total Net Position	3,289,485	3,414,018	3,561,176	4,482,495	4,821,278	4,945,358
Total Liabilities and Net Position	3,292,673	3,418,950	3,839,717	4,488,654	4,824,712	4,945,358

For the grant funding received or approved by the MSWP, the grant funding agreements state that “any net revenues accruing from the operation of the facilities shall be separately accounted for and reserved in a restricted fund by the Township for the future maintenance of the facility or, with the Department’s approval, for the construction of other recreational boating facilities.” While “facility” is not specifically defined in the agreements, which cover grant funding for the construction of the C-Dock and all land based Marina Master Plan investments to date, there may be an interpretation of this term that includes all of the marina facilities, which would suggest that all marina revenues may be subject to restriction under these grant agreements.

One of the specific requests of the Township Supervisor was that the report comment on the adequacy of the marina fund. As discussed in the section on future infrastructure investments, if the Township marina fund balance was equal to \$9 million (with no debt), invested in assets earning returns equal to or better than inflation, and additional funds added annually by an amount equal to the amortization of the then current expected replacement value of the marina infrastructure (2023: \$471,438), the marina fund should, conceptually, be self-sustaining and able to fund future infrastructure investments without incurring the additional frictional costs of debt funding. The marina fund cash balance at 12/31/22 was \$1.4 million and 2022 operating cash flow before non-marina items was roughly \$490 thousand.

Statement of Cash Flow

Marina operation cash flow increased from \$399,723 in 2017 to \$492,195 (est.) in 2022. Including \$97,836 of Greilickville Harbor Park expenses paid in 2022, marina fund operating cash flow is estimated to be \$394,359 in 2022.

Table 14 - Marina Fund Cash Flow

	2017	2018	2019	2020	2021	2022
Beginning Balance - Cash and Cash Equivalents	<u>1,237,483</u>	<u>1,434,403</u>	<u>1,684,235</u>	<u>1,230,304</u>	<u>497,333</u>	<u>1,053,015</u>
Cash Flow from Operations						
Marina Operating Income excl. Depreciation	408,011	318,069	428,474	449,430	472,798	490,374
Unidentified Variance	345	(1,279)	934	903	(508)	-
Decrease/(Increase) in Prepays and A/R	-	(533)	(129)	(502)	(2,272)	5,255
Increase/(Decrease) in A/P and Accrued Expenses	(8,624)	1,744	273,609	(272,382)	(2,725)	(3,434)
Cash Flow from Operations	<u>399,732</u>	<u>318,001</u>	<u>702,888</u>	<u>177,449</u>	<u>467,293</u>	<u>492,195</u>
<i>Memo: Cash Flow from Operations as a % of Ope</i>	59.6%	53.4%	103.4%	24.9%	61.7%	57.7%
Sources and Uses of Cash for Investing Activities						
Grant Revenue	32,367	-	89,445	734,065	225,011	10,211
Investment Income	1,777	3,252	21,025	7,601	125	181
(Increase)/Decrease in Land	-	-	(395,411)	-	-	-
Contractual Services for Capital Asset Investment	(40,441)	(14,095)	(210,872)	(13,079)	(67,886)	(57,813)
(Increase)/Decrease in Other Capital Assets	(142,714)	(18,265)	(620,912)	(1,565,870)	(11,366)	-
Cash Used in Investing Activities	<u>(149,011)</u>	<u>(29,108)</u>	<u>(1,116,725)</u>	<u>(837,283)</u>	<u>145,883</u>	<u>(47,422)</u>
Non-Marina Cash Flow						
Greilickville Harbor Park	(38,801)	(39,060)	(40,095)	(43,136)	(42,495)	(82,836)
Transfers Out	(15,000)	-	-	(30,000)	(15,000)	(15,000)
Non-Marina Cash Flow - In/(Out)	<u>(53,801)</u>	<u>(39,060)</u>	<u>(40,095)</u>	<u>(73,136)</u>	<u>(57,495)</u>	<u>(97,836)</u>
Total Cash Flow for Period	<u>196,920</u>	<u>249,833</u>	<u>(453,931)</u>	<u>(732,971)</u>	<u>555,681</u>	<u>346,936</u>
Ending Balance - Cash and Cash Equivalents	<u>1,434,403</u>	<u>1,684,235</u>	<u>1,230,304</u>	<u>497,333</u>	<u>1,053,015</u>	<u>1,399,951</u>
Key Ratios:						
Cash as a Multiple of Prior Year Expenses	4.9	6.4	4.4	2.0	4.0	4.9

It should be noted that the cash flows and ending balance for 2022 are estimates, since final 2022 audited financial statements were not available at the time of this report. The actual cash balance at the banks, as of 12/31/22 was \$1,415,462. The difference is likely due to uncleared transactions and changes in accounts receivable and accounts payable that were not considered in the estimates, due to their historically de minimis nature.

Marina Revenue Review

Revenues presented in the historical financial statements are, obviously, a function of historical fees and volumes. This section of the report is intended to place the fees charged into a competitive context, relative to other public marinas with similar market focus, activities, and levels of demand.

For grant funding received from, or approved by, the MSWP, the grant funding agreements state that “the Township shall not impose fees for the use of the facilities unless they have been specifically approved by the Department in writing” and that “the Township shall request, no more than once annually, approval to vary from fee rates set by the Michigan State Waterways Commission”. Although it is our understanding that the Township understands that C-Dock revenues are restricted in this manner, and that revenues from A and B docks may not be so restricted, there may be an interpretation of the MSWP grant agreements that all marina revenues may be subject to these terms. Importantly, in a “no names” conversations with Linnae Dawson, recreational harbor coordinator for the Michigan Waterways Commission, Ms. Dawson indicated that MSWP facilities are allowed to charge rates different from those published by the MSWP, as appropriate for their individual situation.

What follows is a competitive assessment of fees charged at Elmwood Marina for seasonal slips, transient slips, boat ramp activity, parking, and the bottomlands lease with CenterPointe Marina.

Seasonal Slips (2022 Revenue: \$580,209)

Highlights

- Inflation for 2023 is forecast at 4.5%
- Elmwood Marina is identified in a recent MSWP report as a high demand facility where rates could be increased until waitlists decline to 10% of marina capacity to reduce long term MSWP funding shortfalls
- Elmwood Marina seasonal slip rates are 13.4% below the neighboring CenterPointe Marina
- The Elmwood Marina waitlist includes 259 names, equal to 1.6 waitlisted applicants for every available seasonal slip at Elmwood Marina.
- There appears to be limited near term potential to increase West Bay seasonal slip capacity. If the proposed Harbor Shore Marina project is completed, only 64 seasonal slips would be added to a market with a wait list of approximately 550 names. Between Suttons Bay, Elmwood Township and Duncan L. Clinch Marinas
- The possibility exists to charge below market seasonal slip rates and increase revenue \$90,000
- More than 80% of seasonal slips are leased to non-residents

Slip Capacity in the West Bay Market

There are six public marinas in the West Bay market area from Bowers Harbor in the East to Suttons Bay to the north. Combined, these marinas have a capacity of 749 slips, of which 640 are available for seasonal rent and 106 are available for transient boaters. Two of these marinas are located some distance from the primary Elmwood Township Marina customer base – Bowers Harbor and Suttons Bay – and are not considered primary competitors in the Elmwood Township Marina customer area. Similarly, another marina – Harbor West Yacht Club – is not considered a primary competitor to Elmwood due to the condominium based ownership of the facility. This reduces available slips in the market area to 295, of which 154 are at Elmwood Township Marina, with the balance split evenly between CenterPointe Marina and the Duncan L. Clinch Marina.

Table 15 - West Bay Seasonal Slips

<i>Marina</i>	<i>Seasonal</i>	<i>Transient</i>	<i>DNR</i>	<i>Marina Boat</i>	<i>Total</i>
<i>Nearby - Rental Based</i>					
Elmwood	154	21	1	2	178
Duncan L. Clinch	71	48	-	-	119
Center Pointe	70	-	-	-	70
<i>Nearby - Condo Based</i>					
Harbor West Yacht Club	158	-	-	-	158
<i>Further Afield</i>					
Bowers Harbor Yacht Club	50	-	-	-	50
Suttons Bay	137	37	-	-	174
	<u>640</u>	<u>106</u>	<u>1</u>	<u>2</u>	<u>749</u>
<i>Possible Future Development</i>					
West Shore	64	-	-	-	64

Market Demand - Seasonal Slip Wait Lists

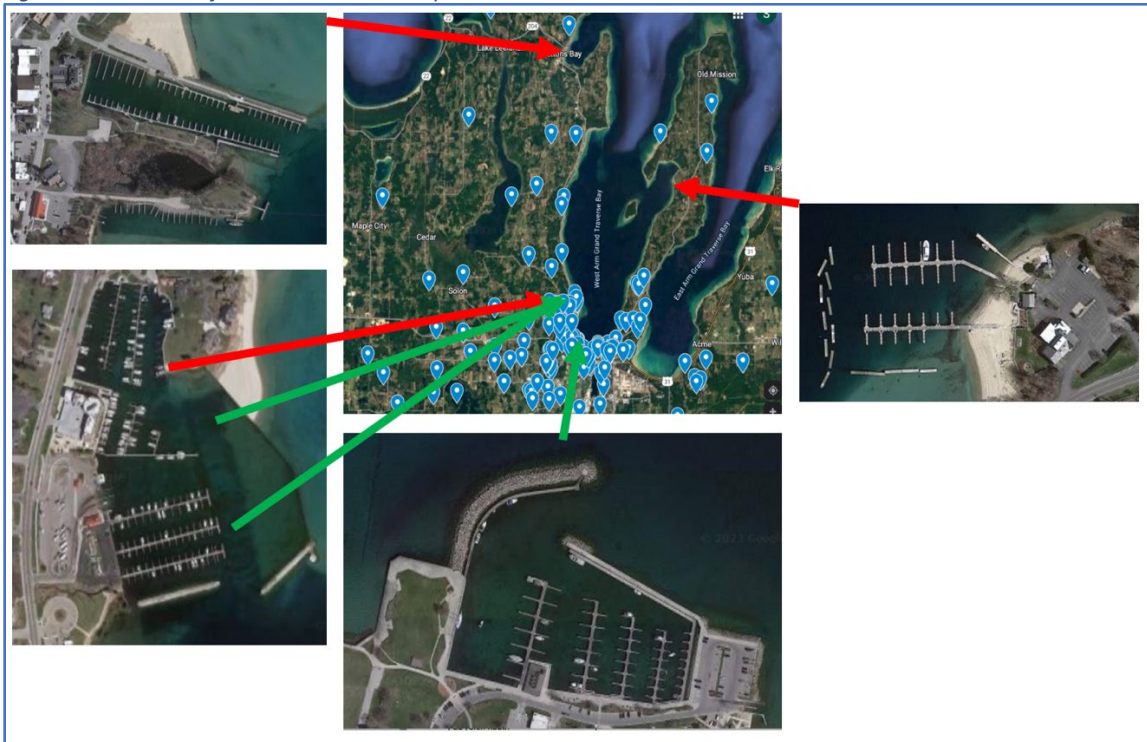
Demand for seasonal slips in the West Bay area is very high, as demonstrated by marina wait lists. There is a “headline” waiting list of 758 names at the Elmwood, Traverse City and Suttons Bay marinas (no information is available currently for CenterPointe Marina), although the effective waiting list of individual boatowners is more in the range of 550 boats, after elimination of duplicate names on the waitlists.

Table 16 - West Bay Marina Wat List

	TC	EW	SB	Total	Duplicate Apps.	Unique
Only Choice	194	187	98	479	-	479
EW/TC	46	46	-	92	(46)	46
EW/TC/SB	16	16	16	48	(32)	16
EW/SB	-	10	10	20	(10)	10
TC/SB	6	-	6	12	(6)	6
	262	259	130	651	(94)	557
Duplicates - Size	107	-	-	107	(107)	-
Total	369	259	130	758	(201)	557

Since two of these marinas are located a significant distance from the primary Elmwood Township Marina customer base – Bowers Harbor and Suttons Bay – I would not consider these marinas to be primary seasonal slip competitors in the Elmwood Township Marina customer area. Similarly, another marina – Harbor West Yacht Club – is not considered a primary competitor to Elmwood due to the condominium based ownership of the Harbor West facility.

Figure 11 - Location of Elmwood Seasonal Slip Customers and Local Marinas



There are 295 available slips in the Elmwood Marina market area, of which 154 are at Elmwood Township Marina, with the balance split evenly between CenterPointe Marina and the Duncan L. Clinch Marina. Less than 20% of the seasonal slips are leased by Elmwood Township residents. Explicit demand for Elmwood Township Marina is 259

names, essentially equal to that at Traverse City. This equates to 1.63 applicants for every available seasonal slip at Elmwood Marina.

Seasonal Slip Prices - 2023

Elmwood Marina rates for 2023 were set equal to Duncan L. Clinch Marina, based on MSWP “Level 1” rates, the highest rate category published by the MSWP. While this represents a 7.8% rate increase for Elmwood Marina users, it is to a MSWP rate level that did not change since 2020. Thus, the new MSWP rate level should be 20% above where it is for 2023, due to inflation for 2021 (5.4%), 2022 (9.1%) and 2023 (4.5%). Essentially, Elmwood Township 2023 seasonal slip rates are in the same adverse position they were in 2016. The only difference is that this relative position isn’t visible, due to the effective “capping” of Duncan L. Clinch Marina “benchmark” rates that resulted from MSWP rate inaction since at least 2021.

The 2023 MSWP rate schedule is unchanged from 2020, despite inflation during 2021 and 2022 and expected inflation in 2023. According to Linnae Dawson, MSWP recreational harbor coordinator, the MSWP did not adjust the 2023 rate schedule for inflation because, after lengthy internal discussion, the MSWP concluded that individual marinas were free to charge higher rates by moving to a higher rate bracket. Obviously, for facilities like Elmwood that are already at the highest MSWP rate level, moving to a higher rate bracket is not an option. Ms. Dawson was clear that MSWP marinas were free to raise rates as needed to reflect local considerations, while maintaining a focus on making boating accessible and affordable.

Within this context, seasonal slip rates at Duncan L. Clinch Marina can be seen as a pricing floor, albeit one that does not account for inflation, while CenterPointe Marina rates can be seen as a local market price ceiling, before considering unmet demand from waitlist applicants. It may well be that CenterPointe has been restrained in increasing prices by the low pricing levels at Duncan L. Clinch Marina and at Elmwood Marina. Within the local context, both Elmwood Marina and Duncan L. Clinch Marina rates may be viewed as constrained by MSWP “published” rates that are \$22/LF lower than inflation would suggest and \$17/LF below market rates for a comparable, immediately adjacent marina. Rates could be even higher from potential unmet demand from waitlists.

Table 17 - West Bay Seasonal Slip Prices

Marina/Pro Forma MSWP Pricing	2023 Pricing
Pro Forma MSWP Level 1 rates adjusted for 2021 to 2023 inflation (5.4% and 9.1% and 4.5%)	\$132/LF
Market equilibrium pricing	> \$127 LF?
CenterPointe Marina	30 to 40 LF = \$127.05/LF
Pro Forma MSWP Level 1 rates adjusted for 2022 to 2023 inflation (9.1% and 4.5%)	\$125/LF
Pro Forma MSWP Level 1 rates adjusted for 2023 inflation (4.5%)	\$115/LF
Elmwood Township Marina	\$110/LF all slips
Duncan L. Clinch Marina	\$110/LF all slips
Suttons Bay Marina	\$83/LF all slips

Key Findings and Recommendations

Due to effective rate “capping” because of MSWP rate inaction, limited slip capacity in the West Bay market area and a long wait list of potential customers explicitly desirous to rent a slip in Elmwood Marina, the need for, and the ability to implement, seasonal slip price increases appears reasonable, and is material in amount. Also, it is understood that there may be five or more seasonal liveaboards in the marina. Some public marinas do not allow this practice, while others do, with limits, and a surcharge of \$200 per month. This could generate \$4,000 annually.

Table 18 - Potential Seasonal Slip Pricing Actions

Action	Potential Revenue Increase
Raise rates for 2021 to 2023 inflation (ca. 20%)	\$116,041
Raise rates to market equilibrium	\$90,000+
Raise rates consistent with CenterPointe Marina	\$89,669
Raise rates based on expected 2023 inflation of 4.5%	\$26,109
Charge liveboard surcharge	\$4,000
Annually survey, document and review local marina pricing	TBD

Transient Slips (2022 Revenue: \$105,805)

Revenue and Capacity Utilization at Elmwood Marina

Elmwood Marina allocates 21 slips to the MDNR transient slip program. These transient slips are occupied 48% of the time, for about 2,000 boat days annually, generating \$100,000 of revenue. Notably, revenue per transient slip is 50% higher (\$1,500) than for seasonal slips.

Table 19 - Transient Boat Days and Revenue – Elmwood Marina

Year	Transient Boat Days			Revenue					
				Transient Slips			Seasonal Slip Revenue per Slip	Transient/Seasonal \$/Slip	
	#	Annual Change	Cap. Util. %	Amount	Annual Change	\$/Slip		\$	%
2018	1,540		40.1%	74,234		3,535	2,448	1,087	44.4%
2019	1,859	20.7%	48.4%	74,780	0.7%	3,561	2,925	636	21.7%
2020	1,974	6.2%	51.4%	113,541	51.8%	5,407	2,888	2,519	87.2%
2021	2,118	7.3%	55.1%	96,278	-15.2%	4,585	3,165	1,420	44.9%
2022	1,824	-13.9%	47.5%	105,805	9.9%	5,038	3,545	1,493	42.1%
Average	1,863		48.5%	92,928		4,425	2,994	1,431	48.1%

Seasonality of Demand

Overall, 80% of Elmwood Marina transient rentals occur in June, July, and August, with the balance distributed evenly between the shoulder seasons (May and September/October). Elmwood Marina was open for 183 days in

2022. Of this, 53 days (29%) could be considered “premium” days – weekends, holidays, or special events, such as Cherry Fest – when transient slip demand is highest. While daily data was not available for review, it is estimated that 60% of Elmwood Marina transient rentals occurred during “premium boat days”, when transient slips are believed to be largely occupied. On this basis, the occupancy rate for non-premium days is estimated at 26%.

Table 20 - Transient Boat Day Seasonality, “Premium” Boat Days – Elmwood Marina

Boating Season - Elmwood Marina			Actual Boat Days Occupied			"Premium Days"			Available "Premium Boat Days" (Estimated 100% Occupancy)				Estimated "Non-Premium" Boats Days Occupied		
Month	Days	Avail. Boat Days	Total	Mix	Occ. Rate	Fri, Sat	Holi-days	Cherry Fest	Total	Fri, Sat	Holi-days	Cherry Fest	Total	Total	Occ. Rate
May	31	651	197	11%	30%	6	2	-	8	126	42	-	168	29	6.0%
Jun	30	630	345	19%	55%	8	-	-	8	168	-	-	168	177	38.3%
Jul	31	651	569	31%	87%	10	1	5	16	210	21	105	336	233	74.0%
Aug	31	651	469	26%	72%	8	-	-	8	168	-	-	168	301	62.3%
Sep	30	630	212	12%	34%	8	1	-	9	168	21	-	189	23	5.2%
Oct	30	630	32	2%	5%	4	-	-	4	84	-	-	84	(52)	-9.5%
Total	183	3,843	1,824	100%	47%	44	4	5	53	924	84	105	1,113	711	26.0%

Market Capacity

There are three marina facilities in the immediate area that routinely provide transient slip rentals. Elmwood Marina has a 22% market share of the transient slips in the Traverse City area, all of which are in the 30’ to 42’ range, where it has 55% market share. This is the largest segment of the boating market.

Table 21 – Elmwood Marina Transient Slip Market

Market Area	Transient Slips				Market Share			
	24' to 27'	30' to 42'	50' to 60'	Total	24' to 27'	30' to 42'	50' to 60'	Total
Elmwood	-	21	-	21	0%	55%	0%	22%
Duncan L. Clinch	22	17	9	48	46%	45%	100%	51%
Discovery Pier	26	-	-	26	54%	0%	0%	27%
Subtotal	48	38	9	95	100%	100%	100%	100%
Mix	51%	40%	9%	100%				

Immediately adjacent to Elmwood Marina, CenterPointe Marina provides transient slips, as available. Further afield (18 miles), Suttons Bay has 36 transient slips and, further still (30 miles), Northport has 62 transient slips.

Market Demand

While available data demand is limited, the table below presents transient slip boat day utilization at local marinas with dedicated transient slips, based on available harbor logs (Elmwood) and budget documents (Clinch). It is believed that the 95 available transient slips are competing for market demand of between 7,000 and 9,000 boat days. Although Duncan L. Clinch Marina has slightly more than twice the number of transient slips that Elmwood Marina has, it has more than three times the number of transient boating days, due largely to its proximity to downtown Traverse City.

Table 22 - Transient Slip Market Demand in Boat Days

Marina	Transient Slips	2015	2016	2017	2018	2019	2020	2021	2022
Duncan L. Clinch	48	6,542	5,978	6,360	5,650	6,055		6,904	
Elmwood	21				1,540	1,859	1,974	2,118	1,824
Discovery Pier	26				-	-		NA	
	<u>95</u>				<u>7,190</u>	<u>7,914</u>		<u>9,022</u>	

Pricing

Transient slip pricing in the area is based on rates established by the DNR, although the DNR allows marinas to charge different rates, as appropriate in the local market area. It is notable that the DNR raised rates significantly in 2022 (30% for a 35’ slip), after a period of generally stable rates dating back to at least 2015. In a discussion with the DNR, the stated reason for not raising rates annually is due to the view that individual marinas are free to change rate levels by migrating from one rate level to another as a means of attaining inflationary rate parity.

Elmwood charges DNR G level rates across the season. There is ample precedent for Elmwood Marina to consider variable pricing to address congestion issues. Duncan L. Clinch Marina transient fees are 21% higher than Elmwood marina for 11 days during Cherry Fest and 43% lower during most of May and September, and October. Eight MSWP marinas charge variable rates throughout the boating season. Six marinas charge higher rates on weekends, holidays, or special event dates. Five marinas charge lower rates during the shoulder season in April, May, September, and October. Four marinas around the state (Duncan L. Clinch, Charlevoix, New Buffalo and St. Clair Boat Harbor) charge higher rates for certain periods than Elmwood Marina.

Table 23 - Variable Transient Slip Pricing Practices at MSWP Marinas

Rate Profile	35 Foot Slip Rate	Relative Rate	Elmwood	Duncan L. Clinch Marina	Charlevoix Marina	New Buffalo Municipal Marina	Grand Haven Marina	St. Clair Boat Harbor	Lake St. Clair Metropark	Marquette Area Marinas	Northport
Base Rate Level			G	G	H	H	E	E	D	E	E
Base Rate - 35 ft. Slip			56	56	61	61	48	48	45	48	48
Rate Strategy			Flat	Variable	Variable	Variable	Variable	Variable	Variable	Variable	Variable
Lower Shoulder Season				Yes	Yes	Yes				Yes	Yes
Higher Weekend Rate						Yes	Yes	Yes			
Higher Holiday Rate					Yes			Yes	Yes		
Higher Event Rate				Yes				Yes			
Rate Level			Boat Days at Rate Level								
A	27	48.2%	-	-	-	-	-	-	-	-	61
B	32	57.1%	-	63	51	-	-	-	-	-	-
C	37	66.1%	-	-	-	-	-	-	-	-	-
D	43	76.8%	-	-	-	-	-	-	138	-	-
E	48	85.7%	-	-	-	-	125	179	61	121	92
F	52	92.9%	-	-	-	-	-	-	-	62	-
G	56	100.0%	183	84	-	73	50	11	-	-	-
H	61	108.9%	-	-	84	55	-	-	-	-	-
I	67	119.6%	-	-	18	48	-	-	-	-	-
J	72	128.6%	-	11	-	-	-	4	-	-	-
Boat Season Days			<u>183</u>	<u>158</u>	<u>153</u>	<u>176</u>	<u>175</u>	<u>194</u>	<u>199</u>	<u>183</u>	<u>153</u>

Key Findings and Recommendations

Due to high transient slip demand, particularly at peak periods (holidays, weekends, Cherry Festival) and limited transient slip capacity in the Elmwood Marina market, there are several actions that, when combined, could increase marina revenue by as much as \$47,250.

Table 24 - Potential Transient Slip Pricing Actions

<i>Action</i>	<i>Potential Revenue Increase</i>
Adjusting rates consistent with Duncan L. Clinch marina during the Cherry Festival (J rate level)	\$2,389
Raising rates based on expected 2023 inflation of 4.5%	\$4,761
Establish premium pricing consistent with Charlevoix and New Buffalo for other high demand and occupancy periods such as holidays (I rate level) and weekends (H rate level)	\$8,600
Converting seasonal slips to transient slip use could increase marina revenue by \$1,500 per slip converted; doubling the number of transient slips could increase Elmwood Marina's transient slip revenue mix to levels consistent with Duncan L. Clinch and Suttons Bay Marinas	\$1,500 to \$31,500
Market to historical slip renters to generate additional repeat business to improve non-peak occupancy	TBD
Charging based on slip size, and not boat size, may generate additional revenue.	TBD
Improve operation and analytic understanding of transient slip operations through better use of existing technology and POS	TBD
Combined Total	\$2,389 to \$47,250

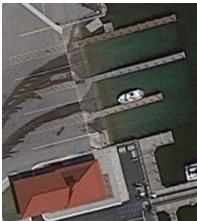
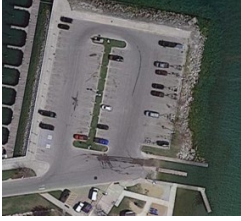
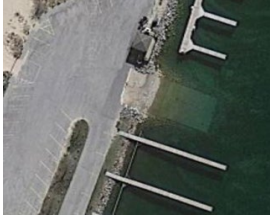
Boat Launch Revenue (2022 Revenue: \$69,852)

Highlights

- Elmwood Marina is by far the largest and highest volume public boat ramp in the northwest Lake Michigan area, with 99% of launch revenue in the West Bay market area, significant periods of congestion, and limited alternatives; Given this, its overall activity level appears more comparable to public launch ramps in Milwaukee, Racine, New Buffalo and suburban Detroit than to launch ramps closer to home such as Duncan L. Clinch, Suttons Bay and Elk Rapids
- Ramp launch fees have not changed since 2017, although the CPI has increased 25% during this period
- While Duncan L. Clinch and Suttons Bay Marinas offer lower launch fees, they do not appear to be appropriate benchmarks, particularly for larger boats, based on negligible launch activity reflected in municipal financial statements and budget documents
- Other relevant public marinas charge launch fees that are double or even triple the fees charged at Elmwood, creating the potential to generate \$70,000 or more of additional revenue

Launch Ramp Capacity in the West Bay Market

- There are three public boat ramps in the West Bay market area:

	<i>Elmwood</i>	<i>Duncan L. Clinch</i>	<i>Suttons Bay</i>
Layout			
Revenue	2022: \$69,952 2021: \$61,423 2020: \$59,777 2019: \$57,489 2018: \$55,885	2022: \$800P 2021: \$2,300 2020: \$1,800 2019: \$4,934 2018: \$4,170	2022: \$0 2021: \$1,830 2020: \$0 2019: \$32 2018: \$450
Estimated Launches	10,000	125	nm
Fees (2023)			
Daily Launch Pass	\$10	\$6	\$5
Daily Commercial	\$20	\$12	
Season Pass	\$75	\$45	\$40
Commercial Season Pass		\$90	
Charter	\$150		

Elmwood Marina 2022 launch revenues include daily launch fees (\$28,484), Season Passes (\$27,790) and Commercial Launches (\$13,678).

Benchmark Data

A review of boat ramp practices in Michigan and on Lake Michigan suggests that Elmwood Marina launch fees are generally at the low end of the range.

Table 25 - Marina Fee Benchmarking Data

Marina	Day Pass			Season Pass		
	Residency		Avg.	Residency		Avg.
	Yes	No		Yes	No	
Evanston, IL - Church Street	NA			325	600	463
Riverview, MI	25		25	200		200
Milwaukee, WI - McKinley Boat Ramp						
<20 ft	10	13	12	120	130	125
20 ft to 26 ft	16	20	18	160	200	180
>26 ft	18	28	23	180	260	220
Racine, WI - Pershing Park						
<20 ft	12	18	15	90	135	113
20 ft to 26 ft	15	22	19	105	160	133
>26 ft	18	27	23	145	200	173
Portage, IN	10		10	75	170	123
Sister Bay, WI	10		10	100		100
New Buffalo, MI						
<27 ft	10	20	15	75		75
27+ ft	30	30	30	100		100
Elmwood	10		10	75		75
Duncan L. Clinch	5		5	45		45
Charlevoix, MI	5	8	7	20	40	30

Daily Pass

Elmwood Township charges \$10 per launch, a price that has not changed since 2017. Adjusting for inflation, this would be \$13 in 2023. While Elmwood Marina daily launch fees appear consistent with other marinas in the areas, other high volume public launch ramps on Lake Michigan charge as much as \$30, with some charging fees that vary by length of boat (from \$10 to \$30). Some also charge higher rates for non-residents, although the MSWP is not generally supportive of this approach, other than for out of state residents. While Duncan L. Clinch Marina charges \$6, this is not believed to be a relevant benchmark, due to the negligible boat launch revenue reported by the marina, in comparison to Elmwood Marina.

Season Pass

Elmwood Township charges \$75 for a seasonal launch pass, a price that has not changed since 2017. Adjusting for inflation, this would be \$94 in 2023. Other public launch ramps on Lake Michigan are generally charging higher fees (from \$100 to \$600) and some charge fees that vary by length of boat (from \$120 to \$260). Some also charge higher rates for non-residents, although the MSWP is not generally supportive of this approach, other than for out of state residents. While Duncan L. Clinch Marina charges \$45, this is not believed to be a relevant benchmark, due to the negligible boat launch revenue reported by the marina, in comparison to Elmwood Marina.

Commercial Launch Passes

Elmwood Township charges \$20 for a commercial launch pass, a price that has not changed since 2017. Adjusting for inflation, this would be \$25 in 2023. Most of the marinas reviewed do not charge separately for commercial launches, although Charlevoix has significant charges for commercial use. Charlevoix charges \$1,200 or \$1,500 for a commercial season pass, depending on residency. Alternatively, a 10 punch pass is available for \$500 or \$750, depending on residency. Riverview (in the Detroit area) does not allow commercial use of the public ramp.

Key Findings and Recommendations

Given the very high volume of the Elmwood Marina boat launch, the limited apparent launch volume at Duncan L. Clinch and Suttons Bay marinas, and the higher rates charged at comparable high volume marinas around Lake Michigan (Milwaukee McKinley Boat Ramp, Racine Pershing Park and New Buffalo) that charge higher rates that are variable by boat size, the potential exists for Elmwood Township to increase launch fees on a basis that maintains stable rates for smaller boats, while increasing overall boat launch revenue by roughly \$70,000. Additionally, due to high levels of congestion during peak periods of activity, the potential exists to consider demand based variable pricing. It may also be beneficial to implement a handheld credit card based point of sale system for the launch, to reduce the potential for lost revenue and to provide better data to understand and manage boat launch activity.

Parking Fees (2022 Revenue: \$22,845)

Elmwood Marina charges a \$10 overnight parking fee, a rate that has not changed since at least 2015. Since 2015, through 2023, the CPI increased 30%, suggesting the potential exists to increase parking to \$15, increasing revenue \$11,000. Additionally, due to high levels of congestion during peak periods of activity, the potential exists to consider demand based variable pricing.

Bottomlands Lease (2022 Revenue: \$17,134)

The 2022 CenterPointe bottomlands lease revenue sharing payment implies a slip rate of \$92 per LF over bottomlands that Elmwood Township leased to its slip holders at \$102 per LF. In 2023, CenterPointe will charge from \$112 per LF to \$150 per LF, and Elmwood will charge \$110 per LF.

Table 26 - CenterPointe 2023 Slip Rates

Length	Price	Price per ft
25	2,141	85.64
30	3,356	111.87
40	5,082	127.05
45	6,481	144.02
50	7,517	150.34
55	7,925	144.09
60	8,332	138.87
Average		128.84

This represents a subsidy to CenterPointe Marina by Elmwood Marina customers and Elmwood Township and suggests the potential for Elmwood to receive 2023 lease payments that are 20% to 38% higher, or more, based on Elmwood prices per LF and CenterPointe rates for 40 foot boats at \$127 per LF, respectively. This could generate between \$3,500 and \$6,500 of additional revenue for Elmwood Marina.

Other Fees

Other fees, such as winter storage, boat sewage pump out and wall mooring fees have not changed since at least 2015. Like parking, with a 30% CPI increase over this period, increasing these fees by 30% to 50% appears reasonable, potentially generating additional revenue - \$22,000 for winter storage and \$1,500 for pump outs.

Investment Income

Year-end 2022 Marina Fund cash and invested assets were \$1.4 million. Investment income reported in the Marina Fund Revenue Disbursement Reports was \$181. Investment returns of 4% are currently available from Merrill Lynch in their Preferred Deposit Program, while rates of approximately 3.5% are available through Huntington Bank and Ally Bank. This represents an opportunity to generate \$56,000 of additional revenue.

Key Findings and Recommendations

Based on the benchmarking review of marinas around the state, and around Lake Michigan, the opportunity may exist to increase marina revenue, consistent with comparable high demand, high volume marinas. The potential exists to enhance marina revenue by \$300,000, as summarized in the table below. This information is intended to be indicative in nature and is presented to help the Township understand the economic impact of potential pricing actions it may wish to consider in the context of various stakeholder interests.

Table 27 – Revenue Enhancement Opportunity

Fee Type	Amount
Seasonal Slip Fees	120,000
Boat Launch Fees	70,000
Investment Income	56,000
Transient Slip Fees	47,000
Parking Fees	11,000
Bottomlands Lease	6,500
Other Fees	23,500
Total	<u>334,000</u>

Infrastructure Project Financing

Cash flow requirements to complete in 2023 Phase III of the 2016 Marina Master Plan land-based improvements are estimated to be \$6.3 million. An additional \$5 million may be required for dock replacement within the decade, bringing capital related cash needs to \$11 million or more.

Capital Improvement Plan Modelled

Best estimates of future infrastructure investments are presented in the table below. Key assumptions include:

- Best estimates of future investment costs, in 2023 dollars, were adjusted to future value based on a long term estimated inflation rate of 2.5%
- Relative to the Capital Improvement Plan previously presented to the Township Board, the Brewery Creek parking lot improvements were moved to 2023, consistent with recent Township Board discussion materials, and the cost was rounded to \$450,000
- Based on recent discussions between the Township Supervisor and the USACE, the potential costs of breakwater structure maintenance and/or replacement have been excluded from this analysis, as it is understood the structures are owned by the USACE, contrary to the information included in the MSWP Facility Assessment Report
- Infrastructure investments beyond the 10 year investment horizon below were projected through the year 2100 to understand the long term financial sustainability of the marina fund over a replacement cycle for all marina infrastructure components

Table 28 - Projected Capital Improvement Plan

Capital Improvements	Replacement Cost in 2023 Dollars	Useful Life in Years	2023	2024	2025	2030	2032	Ten Year Total	Balance to 2100 (ca. 75 Years)
Phase III - Boater Bath	3,200,000	50	3,200,000					3,200,000	10,998,748
Phase III - Seawall	1,000,000	50	1,000,000					1,000,000	3,437,109
Phase III - Parking, Sidewalks, Amenities	2,100,000	25	2,100,000					2,100,000	24,492,847
Phase III - Subtotal	6,300,000		6,300,000	-	-	-	-	6,300,000	38,928,703
Brewery Creek Parking	450,000	25	450,000					450,000	5,248,467
Added Parking Replacement Cost Estimate	500,000	25						-	5,831,630
Docks	5,000,000	30			1,751,042	1,981,143		3,732,185	40,107,864
Mooring Chains and Balls	250,000	10					312,216	312,216	4,851,280
Ramp and Piers	1,000,000	30		52,000				52,000	3,951,512
Harbor Master Building	1,100,000	50						-	3,780,820
Fish Cleaning Station	260,000	50						-	893,648
Buildings - Other	-			20,000				20,000	-
Breakwater - Steel Pile	-							-	-
Breakwater - Rock Mound Revetment	-							-	-
Equipment	200,000	10	-	20,000	-	-	249,773	269,773	3,881,024
Capital Improvement Spend	<u>15,060,000</u>		<u>6,750,000</u>	<u>92,000</u>	<u>1,751,042</u>	<u>1,981,143</u>	<u>561,988</u>	<u>11,136,173</u>	<u>107,474,949</u>

Grants

Elmwood Township has been awarded \$2.5 million in grant funding to date, primarily from the MSWP, to fund Phase I and Phase II of the Marina Master Plan.⁶ There are two grants pending, for a total of \$200,000 to \$800,000 for improvements in Phase III, the final phase of the plan. Grant funding will have provided 20% of improvement project budgets under the Marina Master Plan.

Table 29 - Grant Funding

Date	Grant	Grant Project	Funds Awarded	Township Share	Project Budget	Grant as % of Project Budget
Approved Grants						
2007	MDNR Waterways Coission	Marina Preliminary Feasibility Study (2007)	19,000	19,000	38,000	50%
2008	MDNR Waterways Boating Access	C Dock 55 slip floating pier	300,000	450,000	750,000	40%
2011	USEPA/MDEQ Claen Vessels Act	Marina Sanitary Pump Out System	47,000	9,000	56,000	84%
2012	Great Lakes Fishery Trust	Public Fishing Pier Design	45,000	6,750	51,750	87%
2012	MDNR Waterways Commission	Phased Marina Infrastructural Improvements Engineering Analysis	35,000	35,000	70,000	50%
2012	MDNR Waterways Commission	Marina Phasing Plan (2017)	35,000	35,000	70,000	50%
2017	Michigan State Waterways Program	Phase I - Harbormaster building, north entrance, ramps, parking lot	601,095	601,095	1,202,190	50%
2018	Michigan State Waterways Program	Phase II - Harbormaster building, south entrance, ramps, parking lot	348,711	348,711	697,422	50%
2019	Michigan State Waterways Program	Design and engineering for boater's facility	118,500	118,500	237,000	50%
2021	Michigan State Waterways Program	Phase 3a - demolition, seawall, boater's facility	378,000	409,500	787,500	48%
2022	Michigan State Waterways Program	Phase 3b - 4,186 SF boater's facility	600,000	2,000,000	2,600,000	23%
			<u>2,527,306</u>	<u>4,032,556</u>	<u>6,559,862</u>	39%
Grant Application Submissions (but not yet approved)						
2023	Blight Elimination Grant		54,000	396,000	450,000	12%
2023	Michigan State Waterways Program	Phase 3c (50/50 probability of \$600,000 max.)	300,000	6,000,000	6,300,000	5%
			<u>354,000</u>	<u>6,396,000</u>	<u>6,750,000</u>	5%
Grand Total			<u>1,799,211</u>	<u>9,272,711</u>	<u>11,071,922</u>	16%

While the MSWP has been a large contributor of project funding to date, there are several factors that may impact future MSWP grant funding:

1. The MSWP has a long term projected deficit that could negatively impact future grant funding
2. Elmwood Marina has been specifically identified in MSWP presentations as a marina that may be able to increase rates to reduce its need for grant funding in the future
3. In discussions to date with the Township, there is a view that receiving grants for dock funding may restrict the use of dock revenues. Presumably, this view would also apply to any grant funding that may be received for other improvements related to revenue generating features of the marina such as the boat launch ramp

On this basis, grant funding has been projected on the following basis:

1. Phase IIIa and Phase IIIb grants have been projected as approved
2. The Blight Elimination Grant has been included at the current best estimate of availability
3. The Phase IIIc grant application has been projected based on a 50% probability that the \$600,000 grant request is approved and a 50% probability that it is denied
4. No grant funding is assumed for any water based revenue generating improvements

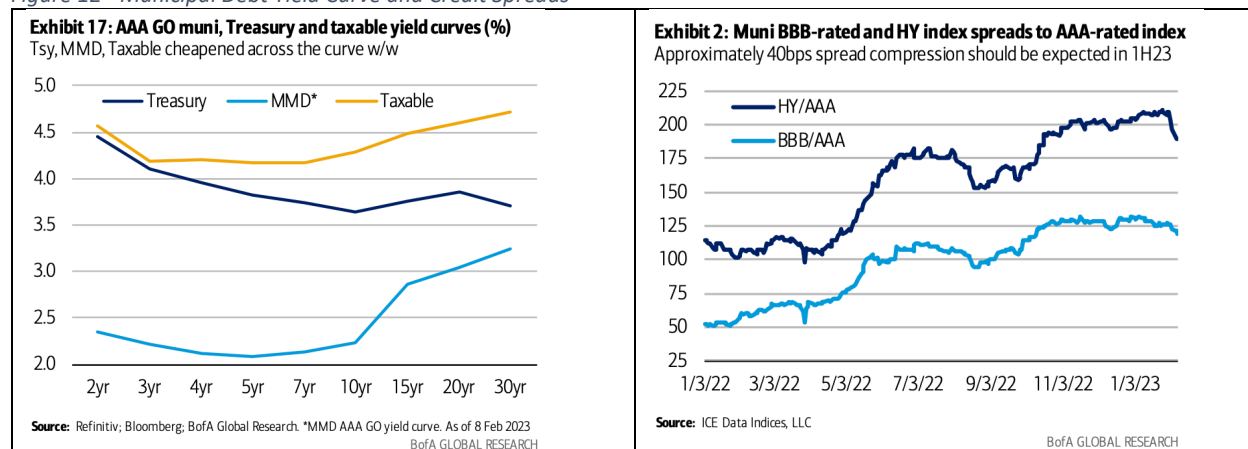
No grant funding is assumed beyond the 10 year investment horizon presented, to assess the marina's ability to become financially self-sufficient.

⁶ 2023 Community Park, Recreation, Open Space and Greenways Plan, p. 19

Debt

Projected 2023 capital improvements will require \$6 million of debt funding, with an expected term of 20 years. The potential interest rate cost of debt funding is estimated to be between 3% and 4%, based on the charts below⁷, which show the yield curve for AAA government obligation municipal debt, and the credit spread between BBB and AAA municipal debt.

Figure 12 - Municipal Debt Yield Curve and Credit Spreads



Operating Cash Flow

A review of marina fund financial statements, benchmark pricing and operational performance data, indicates that potential 2023 marina fund operating cash flow, currently projected to be \$400,000, could be as high as \$850,000.

Table 30 - Range of Pro Forma Marina Fund Operating Cash Flow

	Current Practice	Pro Forma
Available Operating Cash Flow		
Operating Cash Flow - Marina Activities	500,000	500,000
Less: Greilickville Harbor Park Expenses	(85,000)	-
Less: Transfers to Other Township Funds	(15,000)	-
Marina Fund Cash Flow, exd. Capital Costs	400,000	500,000
Potential Revenue Enhancements	-	285,000
Pro Forma Marina Fund Operating Cash Flow	400,000	785,000
Potential Investment Income at 4%	-	50,000
Pro Forma Marina Fund Cash Flow exd. Capital Costs	400,000	835,000

In the Current Practice scenario, key assumptions are as follows:

- Greilickville Harbor Park expenses and transfers to other funds totaling roughly \$100,000 in 2022 are paid by the Marina Fund

⁷ Merrill Lynch Municipals Weekly Fixed Income Research, February 10, 2023

- Seasonal slip fees continue to increase modestly from current levels (projected from 2024 at an expected inflation level of 2.5% annually), which may require MSWP approval unless the MSWP changes future rates levels, since Elmwood Marina 2023 rates are at the highest MSWP rate level (Group 1)
- Transient slip fees remain at current MSWP Group G rate levels, which were unchanged in 2023
- Boat ramp, pump out, parking and winter storage fees remain unchanged, consistent with recent practice, whereby there has been no material change since 2017 or before
- De minimus investment income on Marina Fund cash balances
- All fees increase at inflationary levels after 2023, inconsistent with current practice.

On this basis, marina revenues will not be sufficient to meet expected debt service cost coverage requirements, and the marina fund cash balance will become negative in 2030 when replacement of the second of three docks is projected.

Financial Projections

Two forward scenarios are presented below.

The first – Current Practice – reflects operation of the marina fund consistent with recent practice, with pricing actions that generally lag inflation, while maintaining fees at below market levels that require grant funding for long term financial sustainability. This scenario is intended to identify the marina fund cash flow funding needs that need to be addressed to fund the continued development of the marina.

The second scenario is intended to present the actions necessary to fund ongoing marina development, to make the marina fund sustainable based on user revenues and to minimize the frictional cost of external debt. This scenario includes revenue generating actions consistent with historical and projected inflation, while keeping fees at levels comparable to or less than seasonal, transient, ramp and parking fees observed from benchmark data at similar high demand marinas.

Financial Projections – Scenario A – Current Practice

Key Assumptions

- Maintain status quo on rates in 2023
- Increase rates thereafter for all services at inflation, inconsistent with current practice
- Borrow \$6 million in 2023 to fund Phase IIIc development

Key Findings

- Low debt service coverage may preclude ability to obtain this level of funding
- At least \$110,000 of added annual cash flow is needed with a 1.25 debt service coverage ratio covenant
- Cash balance becomes negative in 2030, and generally remains negative thereafter, requiring additional funding via a combination of debt, fee increases or grants

Operating Revenue Projection

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Slip and Buoy Fee - Seasonal	523,100	580,209	612,500	630,645	646,411	662,571	679,135	696,114	713,516	731,354	749,638	768,379
Slip and Buoy Fees - Transient	96,278	105,805	112,500	113,080	115,907	118,805	121,775	124,819	127,940	131,138	134,417	137,777
Bottomlands Lease	16,518	17,134	17,425	17,861	18,307	18,765	19,234	19,715	20,208	20,713	21,231	21,761
Water Area Revenue	635,897	703,147	742,425	761,585	780,625	800,141	820,144	840,648	861,664	883,206	905,286	927,918
Boat Launch Revenue	61,423	69,952	67,500	65,625	67,266	68,947	70,671	72,438	74,249	76,105	78,008	79,958
Parking	15,826	22,845	23,000	23,000	25,300	27,600	29,900	32,200	34,500	36,800	39,100	41,400
Dry Storage and Haul Out Fees	27,978	45,500	46,000	46,000	47,150	48,329	49,537	50,775	52,045	53,346	54,680	56,047
Land Area Revenue	43,805	68,345	69,000	69,000	72,450	75,929	79,437	82,975	86,545	90,146	93,780	97,447
Ancillary Revenue	15,862	10,891	11,000	11,275	12,185	12,490	12,802	13,122	13,450	13,787	14,131	14,485
Operating Revenue	756,987	852,335	889,925	907,485	932,526	957,507	983,054	1,009,183	1,035,908	1,063,243	1,091,204	1,119,807
Memo: YoY Change in Operating Revenue (%)	6.4%	12.6%	4.4%	2.0%	2.8%	2.7%	2.7%	2.7%	2.6%	2.6%	2.6%	2.6%

Key Assumptions

Average Price Increase - Seasonal Slip	3.0%	9.5%	7.8%	2.5%	2.5%
Average Revenue Increase - Bottomlands Lease	19.5%	3.7%	1.7%	2.5%	
Average Revenue Increase - Transient Slips	19.5%	3.7%	9.9%	0.0%	
Parking Fee	10	10	10		
Winter Storage per foot	1.60	1.60	1.60		
Ramp Pass - Daily	10	10	10		
Ramp Pass - Seasonal	75	75	75		
Ramp Pass - Commercial	20	20	20		

Statement of Cash Flows

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Beginning Balance - Cash and Cash Equivalents	497,333	1,053,015	1,399,951	1,210,088	2,456,476	725,980	758,849	805,193	865,300	939,462	(953,164)	(850,975)
Cash Flow from Operations												
Marina Operating Income excl. Depreciation	472,798	490,374	500,937	508,773	523,846	538,609	553,685	569,079	584,801	600,859	617,260	634,014
Unidentified Variance	(508)	-	-	-	-	-	-	-	-	-	-	-
Decrease/(Increase) in Prepaids and A/R	(2,272)	5,255	-	-	-	-	-	-	-	-	-	-
Increase/(Decrease) in A/P and Accrued Expenses	(2,725)	(3,434)	-	-	-	-	-	-	-	-	-	-
Cash Flow from Operations	467,293	492,195	500,937	508,773	523,846	538,609	553,685	569,079	584,801	600,859	617,260	634,014
<i>Memo: Cash Flow from Operations as a % of Ope</i>	61.7%	57.7%	56.3%	56.1%	56.2%	56.3%	56.3%	56.4%	56.5%	56.5%	56.6%	56.6%
Sources and Uses of Cash for Investing Activities												
Grant Revenue	225,011	10,211	118,500	1,332,000	-	-	-	-	-	-	-	-
Investment Income	125	181	700	605	1,228	363	379	403	433	470	(477)	(425)
Debt Proceeds/(Principal Payments)	-	-	6,000,000	(201,491)	(209,550)	(217,932)	(226,649)	(235,715)	(245,144)	(254,950)	(265,148)	(275,754)
Interest on Loans	-	-	-	(240,000)	(231,940)	(223,558)	(214,841)	(205,775)	(196,346)	(186,541)	(176,343)	(165,737)
(Increase)/Decrease in Land	-	-	-	-	-	-	-	-	-	-	-	-
Contractual Services for Capital Asset Investment	(67,886)	(57,813)	-	-	-	-	-	-	-	-	-	-
(Increase)/Decrease in Other Capital Assets	(11,366)	-	(6,750,000)	(92,000)	(1,751,042)	-	-	-	-	(1,981,143)	-	(561,988)
Cash Used in Investing Activities	145,883	(47,422)	(630,800)	799,115	(2,191,304)	(441,128)	(441,111)	(441,088)	(441,058)	(2,422,164)	(441,967)	(1,003,904)
Non-Marina Cash Flow												
Greilickville Harbor Park	(42,495)	(82,836)	(45,000)	(46,125)	(47,278)	(48,460)	(49,672)	(50,913)	(52,186)	(53,491)	(54,828)	(56,199)
Transfers Out	(15,000)	(15,000)	(15,000)	(15,375)	(15,759)	(16,153)	(16,557)	(16,971)	(17,395)	(17,830)	(18,276)	(18,733)
Non-Marina Cash Flow - In/(Out)	(57,495)	(97,836)	(60,000)	(61,500)	(63,038)	(64,613)	(66,229)	(67,884)	(69,582)	(71,321)	(73,104)	(74,932)
Total Cash Flow for Period	555,681	346,936	(189,863)	1,246,387	(1,730,496)	32,868	46,345	60,107	74,162	(1,892,626)	102,189	(444,822)
Ending Balance - Cash and Cash Equivalents	1,053,015	1,399,951	1,210,088	2,456,476	725,980	758,849	805,193	865,300	939,462	(953,164)	(850,975)	(1,295,797)
	111.7%	32.9%	-13.6%	103.0%	-70.4%	4.5%	6.1%	7.5%	8.6%	-201.5%	-10.7%	52.3%
Key Ratios:												
Cash as a Multiple of Prior Year Expenses	4.0	4.9	3.3	6.3	1.8	1.9	1.9	2.0	2.1	(2.1)	(1.8)	(2.7)
Debt Service Cost Coverage Ratio	-	-	-	1.01	1.04	1.07	1.10	1.14	1.17	1.20	1.23	1.27

Income Statement

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Marina Operating Items												
Operating Revenue	756,987	852,335	889,925	907,485	932,526	957,507	983,054	1,009,183	1,035,908	1,063,243	1,091,204	1,119,807
Operating Expense	(284,189)	(361,961)	(388,988)	(398,712)	(408,680)	(418,897)	(429,370)	(440,104)	(451,107)	(462,384)	(473,944)	(485,792)
Marina Operating Income excl. Depreciation	472,798	490,374	500,937	508,773	523,846	538,609	553,685	569,079	584,801	600,859	617,260	634,014
Depreciation	(233,262)	(221,035)	(225,000)	(450,000)	(453,066)	(511,434)	(511,434)	(511,434)	(511,434)	(511,434)	(577,472)	(596,205)
Marina Operating Income	239,536	269,339	275,938	58,773	70,779	27,175	42,250	57,645	73,367	89,424	39,788	37,809
Marina Capital Investment and Financing Items												
Capital Investment Expenditure	(67,886)	(57,813)	-	-	-	-	-	-	-	-	-	-
Grant Funding	225,011	10,211	118,500	1,332,000	-	-	-	-	-	-	-	-
Investment Income	125	181	700	605	1,228	363	379	403	433	470	(477)	(425)
Interest on Loans	-	-	-	(240,000)	(231,940)	(223,558)	(214,841)	(205,775)	(196,346)	(186,541)	(176,343)	(165,737)
Marina Capital Investment and Financing Items	157,249	(47,422)	119,200	1,092,605	(230,712)	(223,195)	(214,462)	(205,373)	(195,914)	(186,071)	(176,819)	(166,162)
Non-Marina Items												
Greiflickville Harbor Expenses	(42,495)	(82,836)	(45,000)	(46,125)	(47,278)	(48,460)	(49,672)	(50,913)	(52,186)	(53,491)	(54,828)	(56,199)
Transfers Out	(15,000)	(15,000)	(15,000)	(15,375)	(15,759)	(16,153)	(16,557)	(16,971)	(17,395)	(17,830)	(18,276)	(18,733)
Unidentified Variance	(507)	-	-	-	-	-	-	-	-	-	-	-
Non-Marina Items	(58,002)	(97,836)	(60,000)	(61,500)	(63,038)	(64,613)	(66,229)	(67,884)	(69,582)	(71,321)	(73,104)	(74,932)
Marina Fund Change in Net Position	338,783	124,080	335,138	1,089,878	(222,970)	(260,634)	(238,440)	(215,612)	(192,129)	(167,968)	(210,136)	(203,285)
Key Ratios:												
Operating Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Operating Expense as % of Operating Revenue	<u>-37.5%</u>	<u>-42.5%</u>	<u>-43.7%</u>	<u>-43.9%</u>	<u>-43.8%</u>	<u>-43.7%</u>	<u>-43.7%</u>	<u>-43.6%</u>	<u>-43.5%</u>	<u>-43.5%</u>	<u>-43.4%</u>	<u>-43.4%</u>
Operating Cash Flow as % of Operating Revenue	62.5%	57.5%	56.3%	56.1%	56.2%	56.3%	56.3%	56.4%	56.5%	56.5%	56.6%	56.6%
Depreciation as % of Operating Revenue	-30.8%	-25.9%	-25.3%	-49.6%	-48.6%	-53.4%	-52.0%	-50.7%	-49.4%	-48.1%	-52.9%	-53.2%
Capital Investment Items as % of Operating Revenue	20.8%	-5.6%	13.4%	120.4%	-24.7%	-23.3%	-21.8%	-20.4%	-18.9%	-17.5%	-16.2%	-14.8%
Non-Marina Expenses as % of Operating Revenue	-5.6%	-9.7%	-5.1%	-5.1%	-5.1%	-5.1%	-5.1%	-5.0%	-5.0%	-5.0%	-5.0%	-5.0%
Unidentified Variance as % of Operating Revenue	<u>-0.1%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>	<u>0.0%</u>
Marina Fund Change in Net Position as % of Operating Revenue	<u>46.7%</u>	<u>16.3%</u>	<u>39.3%</u>	<u>121.8%</u>	<u>-22.2%</u>	<u>-25.5%</u>	<u>-22.6%</u>	<u>-19.7%</u>	<u>-16.9%</u>	<u>-14.1%</u>	<u>-17.6%</u>	<u>-16.5%</u>
Return on Equity - Overall	7.6%	2.6%	6.8%	20.6%	-3.5%	-4.2%	-4.1%	-3.8%	-3.5%	-3.2%	-4.1%	-4.2%
Return on Equity - Operating Income	5.3%	5.6%	5.6%	1.1%	1.1%	0.4%	0.7%	1.0%	1.4%	1.7%	0.8%	0.8%
Change in Operating Revenue	6.4%	12.6%	4.4%	2.0%	2.8%	2.7%	2.7%	2.7%	2.6%	2.6%	2.6%	2.6%
Change in Operating Expenses	8.4%	27.4%	7.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Change in Operating Cash Flow	5.2%	3.7%	2.2%	1.6%	3.0%	2.8%	2.8%	2.8%	2.8%	2.7%	2.7%	2.7%
Change in Change in Net Position	-63.2%	-63.4%	170.1%	225.2%	-120.5%	16.9%	-8.5%	-9.6%	-10.9%	-12.6%	25.1%	-3.3%

Balance Sheet

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Assets												
Cash and Cash Equivalents	1,053,016	1,399,951	1,210,088	2,456,476	725,980	758,849	805,193	865,300	939,462	(953,164)	(850,975)	(1,295,797)
Other Capital Assets, Net of Depreciation	3,371,030	3,149,995	9,674,995	9,316,996	10,614,971	10,103,537	9,592,102	9,080,668	8,569,234	10,038,942	9,461,470	9,427,253
Land	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411
Prepays	5,255	-	-	-	-	-	-	-	-	-	-	-
Total Assets	4,824,712	4,945,357	11,280,495	12,168,883	11,736,362	11,257,796	10,792,707	10,341,379	9,904,107	9,481,189	9,005,906	8,526,867
Liabilities												
Accounts Payable and Accrued Expenses	3,434	-	-	-	-	-	-	-	-	-	-	-
Debt	-	-	6,000,000	5,798,509	5,588,959	5,371,027	5,144,378	4,908,662	4,663,518	4,408,569	4,143,421	3,867,667
Total Liabilities	3,434	-	6,000,000	5,798,509	5,588,959	5,371,027	5,144,378	4,908,662	4,663,518	4,408,569	4,143,421	3,867,667
Net Position												
Capital and Intangible Assets, net of Debt	3,766,441	3,545,406										
Restricted	210,635	210,635										
Unrestricted	844,202	1,189,317										
Total Net Position	4,821,278	4,945,358	5,280,496	6,370,374	6,147,404	5,886,770	5,648,330	5,432,718	5,240,590	5,072,622	4,862,486	4,659,201
Total Liabilities and Net Position	4,824,712	4,945,358	11,280,496	12,168,884	11,736,364	11,257,798	10,792,708	10,341,381	9,904,108	9,481,190	9,005,907	8,526,868
Key Ratios												
Cash as a % of Operating Revenue	139.1%	164.2%	136.0%	270.7%	77.9%	79.3%	81.9%	85.7%	90.7%	-89.6%	-78.0%	-115.7%
Cash as a % of Net Position	21.8%	28.3%	22.9%	38.6%	11.8%	12.9%	14.3%	15.9%	17.9%	-18.8%	-17.5%	-27.8%
Debt to Equity (Net Position)	-	-	1.1	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.8

Financial Projections – Scenario B – Path to Financial Sustainability

This scenario is intended to demonstrate that the Township may be able to accelerate renovation of the marina facilities and place the marina on a path to financial sustainability (excluding the cost of any future breakwater repair or replacement) and reduce frictional costs of future debt funding by taking pricing actions consistent with fee levels and structures at comparable high demand marinas.

Key Assumptions

- Invest cash balances to generate higher levels of investments income – 4% in 2023 and a 1% real interest rate (3.5% nominal rate) from 2024
- Increase ramp fees on average by 50%, consistent with benchmark data. This action can be implemented on a basis that reduces the impact on smaller boats while focusing the relative adverse impact on ramp infrastructure costs of larger, by implementing variable pricing dependent on the size of the boat, like McKinley Park Marina in Milwaukee, Pershing Park Marina in Racine, and New Buffalo. As an example:
 - Daily Ramp Permits
 - Increase rates on boats less than 20 feet to \$15, consistent with fees at other high volume boat launches in Milwaukee, Racine, New Buffalo, and Riverview, and directionally consistent with inflation since the last fee increase in 2017
 - Charge a rate of \$20 on boats from 20 feet to 26 feet and \$30 on boats above 26 feet
 - Seasonal Ramp Permits
 - Increase permit fees from \$75 to \$125 for boats less than 20 feet to create more relative equity, on average, between seasonal and daily permits users, while also addressing inflation since the last time rates were changed
 - Increase rates for boats between 20 and 26 feet to \$150, and to \$175 for larger boats
 - Commercial Launch Permits
 - Consistent with current practice, charge commercial launch users a price that is double current daily launch fees
- Obtain, on average, 20% more revenue from transient slips rentals, by implementing some of the opportunities mentioned in the revenue review section, such as higher pricing on weekends, holidays and special events with high demand, and lower rates early and late in the season to stimulate demand, or by converting seasonal slips to transient slips
- Obtain, on average, 20% more revenue from the CenterPointe bottomlands lease, by requiring a minimum revenue per LF consistent with the prices charged to Elmwood Marina slip holders, with an expectation that the revenue would be based more on the price CenterPointe charges for foot boats larger than 30 feet, the target market of this marina.
- Increase parking, winter storage, pump out and other fees in 2023 consistent with inflationary increases since these fees were last changed
- Increase 2024 seasonal slip rates 7.5%, to make up for “lost” 2022 inflation in the MSWP rate schedule for marinas at the maximum rate level. This would raise rates to \$118 per LF, which would still be 7% below CenterPointe rates for boats larger than 30 feet and less than 40 feet
- Stop annual transfer of \$15,000 from the Marina Fund and funding these costs from the Township General Fund (similar treatment of costs to maintain Greilickville Harbor Park would be even more beneficial to Marina Fund financial sustainability)

Key Findings

- Acceptable debt service coverage ratios throughout full replacement lifecycle
- Cash balance is negative only from 2035 to 2037, and is positive thereafter

Operating Revenue Projection

Description	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Slip and Buoy Fee - Seasonal	523,100	580,209	612,500	661,408	677,943	694,891	712,264	730,070	748,322	767,030	786,206	805,861
Slip and Buoy Fees - Transient	96,278	105,805	112,500	135,696	139,089	142,566	146,130	149,783	153,528	157,366	161,300	165,333
Bottomlands Lease	16,518	17,134	20,400	24,480	25,092	25,719	26,362	27,021	27,697	28,389	29,099	29,827
Water Area Revenue	635,897	703,147	745,400	821,584	842,124	863,177	884,756	906,875	929,547	952,786	976,605	1,001,020
Boat Launch Revenue	61,423	69,952	67,500	112,500	115,313	118,195	121,150	124,179	127,283	130,466	133,727	137,070
Parking	15,826	22,845	23,000	34,500	36,800	39,100	41,400	43,700	46,000	48,300	50,600	52,900
Dry Storage and Haul Out Fees	27,978	45,500	46,000	57,500	58,938	60,411	61,921	63,469	65,056	66,682	68,349	70,058
Land Area Revenue	43,805	68,345	69,000	92,000	95,738	99,511	103,321	107,169	111,056	114,982	118,949	122,958
Ancillary Revenue	15,862	10,891	11,000	11,825	13,145	13,474	13,811	14,156	14,510	14,873	15,245	15,626
Operating Revenue	756,987	852,335	892,900	1,037,909	1,066,319	1,094,357	1,123,038	1,152,379	1,182,396	1,213,106	1,244,526	1,276,675
Memo: YoY Change in Operating Revenue (%)	6.4%	12.6%	4.8%	16.2%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%

Key Assumptions

Average Price Increase - Seasonal Slip	3.0%	9.5%	7.8%	7.5%	2.5%
Average Revenue Increase - Bottomlands Lease	19.5%	3.7%	19.1%	20.0%	
Average Revenue Increase - Transient Slips	19.5%	3.7%	9.9%	20.0%	
Parking Fee	10	10	15		
Winter Storage per foot	1.60	1.60	2.00		
Ramp Pass - Daily	10	10	15		
Ramp Pass - Seasonal	75	75	150		
Ramp Pass - Commercial	20	20	30		

Statement of Cash Flow

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Beginning Balance - Cash and Cash Equivalents	497,333	1,053,015	1,399,951	1,268,361	2,688,960	1,185,143	1,395,978	1,630,787	1,890,765	2,177,159	510,127	783,969
Cash Flow from Operations												
Marina Operating Income excl. Depreciation	472,798	490,374	503,912	639,197	657,639	675,460	693,669	712,275	731,290	750,722	770,583	790,882
Unidentified Variance	(508)	-	-	-	-	-	-	-	-	-	-	-
Decrease/(Increase) in Prepaids and A/R	(2,272)	5,255	-	-	-	-	-	-	-	-	-	-
Increase/(Decrease) in A/P and Accrued Expenses	(2,725)	(3,434)	-	-	-	-	-	-	-	-	-	-
Cash Flow from Operations	467,293	492,195	503,912	639,197	657,639	675,460	693,669	712,275	731,290	750,722	770,583	790,882
<i>Memo: Cash Flow from Operations as a % of Ope</i>	61.7%	57.7%	56.4%	61.6%	61.7%	61.7%	61.8%	61.8%	61.8%	61.9%	61.9%	61.9%
Sources and Uses of Cash for Investing Activities												
Grant Revenue	225,011	10,211	118,500	1,332,000	-	-	-	-	-	-	-	-
Investment Income	125	181	55,998	44,393	94,114	41,480	48,859	57,078	66,177	76,201	17,854	27,439
Debt Proceeds/(Principal Payments)	-	-	6,000,000	(201,491)	(209,550)	(217,932)	(226,649)	(235,715)	(245,144)	(254,950)	(265,148)	(275,754)
Interest on Loans	-	-	-	(240,000)	(231,940)	(223,558)	(214,841)	(205,775)	(196,346)	(186,541)	(176,343)	(165,737)
(Increase)/Decrease in Land	-	-	-	-	-	-	-	-	-	-	-	-
Contractual Services for Capital Asset Investment	(67,886)	(57,813)	-	-	-	-	-	-	-	-	-	-
(Increase)/Decrease in Other Capital Assets	(11,366)	-	(6,750,000)	(92,000)	(1,751,042)	-	-	-	-	(1,981,143)	-	(561,988)
Cash Used in Investing Activities	145,883	(47,422)	(575,502)	842,902	(2,098,419)	(400,011)	(392,631)	(384,413)	(375,314)	(2,346,433)	(423,636)	(976,040)
Non-Marina Cash Flow												
Greilickville Harbor Park	(42,495)	(82,836)	(45,000)	(46,125)	(47,278)	(48,460)	(49,672)	(50,913)	(52,186)	(53,491)	(54,828)	(56,199)
Transfers Out	(15,000)	(15,000)	(15,000)	(15,375)	(15,759)	(16,153)	(16,557)	(16,971)	(17,395)	(17,830)	(18,276)	(18,733)
Non-Marina Cash Flow - In/(Out)	(57,495)	(97,836)	(60,000)	(61,500)	(63,038)	(64,613)	(66,229)	(67,884)	(69,582)	(71,321)	(73,104)	(74,932)
Total Cash Flow for Period	555,681	346,936	(131,590)	1,420,599	(1,503,817)	210,836	234,809	259,978	286,394	(1,667,032)	273,842	(260,090)
Ending Balance - Cash and Cash Equivalents	1,053,015	1,399,951	1,268,361	2,688,960	1,185,143	1,395,978	1,630,787	1,890,765	2,177,159	510,127	783,969	523,880
	111.7%	32.9%	-9.4%	112.0%	-55.9%	17.8%	16.8%	15.9%	15.1%	-76.6%	53.7%	-33.2%
Key Ratios:												
Cash as a Multiple of Prior Year Expenses	4.0	4.9	3.5	6.9	3.0	3.4	3.9	4.4	4.9	1.1	1.7	1.1
Debt Service Cost Coverage Ratio	-	-	-	1.31	1.35	1.38	1.42	1.46	1.50	1.54	1.58	1.62

Income Statement

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Marina Operating Items												
Operating Revenue	756,987	852,335	892,900	1,037,909	1,066,319	1,094,357	1,123,038	1,152,379	1,182,396	1,213,106	1,244,526	1,276,675
Operating Expense	(284,189)	(361,961)	(388,988)	(398,712)	(408,680)	(418,897)	(429,370)	(440,104)	(451,107)	(462,384)	(473,944)	(485,792)
Marina Operating Income excl. Depreciation	472,798	490,374	503,912	639,197	657,639	675,460	693,669	712,275	731,290	750,722	770,583	790,882
Depreciation	(233,262)	(221,035)	(225,000)	(450,000)	(453,066)	(511,434)	(511,434)	(511,434)	(511,434)	(511,434)	(577,472)	(596,205)
Marina Operating Income	239,536	269,339	278,913	189,197	204,572	164,025	182,234	200,841	219,855	239,288	193,110	194,677
Marina Capital Investment and Financing Items												
Capital Investment Expenditure	(67,886)	(57,813)	-	-	-	-	-	-	-	-	-	-
Grant Funding	225,011	10,211	118,500	1,332,000	-	-	-	-	-	-	-	-
Investment Income	125	181	55,998	44,393	94,114	41,480	48,859	57,078	66,177	76,201	17,854	27,439
Interest on Loans	-	-	-	(240,000)	(231,940)	(223,558)	(214,841)	(205,775)	(196,346)	(186,541)	(176,343)	(165,737)
Marina Capital Investment and Financing Items	157,249	(47,422)	174,498	1,136,393	(137,827)	(182,078)	(165,982)	(148,698)	(130,170)	(110,340)	(158,488)	(138,298)
Non-Marina Items												
Grelickville Harbor Expenses	(42,495)	(82,836)	(45,000)	(46,125)	(47,278)	(48,460)	(49,672)	(50,913)	(52,186)	(53,491)	(54,828)	(56,199)
Transfers Out	(15,000)	(15,000)	(15,000)	(15,375)	(15,759)	(16,153)	(16,557)	(16,971)	(17,395)	(17,830)	(18,276)	(18,733)
Unidentified Variance	(507)	-	-	-	-	-	-	-	-	-	-	-
Non-Marina Items	(58,002)	(97,836)	(60,000)	(61,500)	(63,038)	(64,613)	(66,229)	(67,884)	(69,582)	(71,321)	(73,104)	(74,932)
Marina Fund Change in Net Position	338,783	124,080	393,411	1,264,090	3,708	(82,667)	(49,976)	(15,741)	20,104	57,626	(38,482)	(18,553)
Key Ratios:												
Operating Revenue	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Operating Expense as % of Operating Revenue	-37.5%	-42.5%	-43.6%	-38.4%	-38.3%	-38.3%	-38.2%	-38.2%	-38.2%	-38.1%	-38.1%	-38.1%
Operating Cash Flow as % of Operating Revenue	62.5%	57.5%	56.4%	61.6%	61.7%	61.7%	61.8%	61.8%	61.8%	61.9%	61.9%	61.9%
Depreciation as % of Operating Revenue	-30.8%	-25.9%	-25.2%	-43.4%	-42.5%	-46.7%	-45.5%	-44.4%	-43.3%	-42.2%	-46.4%	-46.7%
Capital Investment Items as % of Operating Revenue	20.8%	-5.6%	19.5%	109.5%	-12.9%	-16.6%	-14.8%	-12.9%	-11.0%	-9.1%	-12.7%	-10.8%
Non-Marina Expenses as % of Operating Revenue	-5.6%	-9.7%	-5.0%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%	-4.4%
Unidentified Variance as % of Operating Revenue	-0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Marina Fund Change in Net Position as % of Operating Revenue	46.7%	16.3%	45.7%	123.3%	1.8%	-6.1%	-3.0%	0.1%	3.2%	6.2%	-1.6%	0.0%
Return on Equity - Overall	7.6%	2.6%	8.0%	23.7%	0.1%	-1.3%	-0.8%	-0.2%	0.3%	0.9%	-0.6%	-0.3%
Return on Equity - Operating Income	5.3%	5.6%	5.6%	3.5%	3.1%	2.5%	2.8%	3.1%	3.4%	3.7%	3.0%	3.0%
Change in Operating Revenue	6.4%	12.6%	4.8%	16.2%	2.7%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%	2.6%
Change in Operating Expenses	8.4%	27.4%	7.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%
Change in Operating Cash Flow	5.2%	3.7%	2.8%	26.8%	2.9%	2.7%	2.7%	2.7%	2.7%	2.7%	2.6%	2.6%
Change in Change in Net Position	-63.2%	-63.4%	217.1%	221.3%	-99.7%	-2329.4%	-39.5%	-68.5%	-227.7%	186.6%	-166.8%	-51.8%

Balance Sheet

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Assets												
Cash and Cash Equivalents	1,053,016	1,399,951	1,268,361	2,688,960	1,185,143	1,395,978	1,630,787	1,890,765	2,177,159	510,127	783,969	523,880
Other Capital Assets, Net of Depreciation	3,371,030	3,149,995	9,674,995	9,316,996	10,614,971	10,103,537	9,592,102	9,080,668	8,569,234	10,038,942	9,461,470	9,427,253
Land	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411	395,411
Prepays	5,255	-	-	-	-	-	-	-	-	-	-	-
Total Assets	4,824,712	4,945,357	11,338,768	12,401,367	12,195,525	11,894,926	11,618,300	11,366,844	11,141,804	10,944,480	10,640,850	10,346,543
Liabilities												
Accounts Payable and Accrued Expenses	3,434	-	-	-	-	-	-	-	-	-	-	-
Debt	-	-	6,000,000	5,798,509	5,588,959	5,371,027	5,144,378	4,908,662	4,663,518	4,408,569	4,143,421	3,867,667
Total Liabilities	3,434	-	6,000,000	5,798,509	5,588,959	5,371,027	5,144,378	4,908,662	4,663,518	4,408,569	4,143,421	3,867,667
Net Position												
Capital and Intangible Assets, net of Debt	3,766,441	3,545,406										
Restricted	210,635	210,635										
Unrestricted	844,202	1,189,317										
Total Net Position	4,821,278	4,945,358	5,338,769	6,602,859	6,606,567	6,523,900	6,473,924	6,458,183	6,478,287	6,535,913	6,497,431	6,478,877
Total Liabilities and Net Position	4,824,712	4,945,358	11,338,769	12,401,368	12,195,526	11,894,927	11,618,302	11,366,845	11,141,805	10,944,482	10,640,851	10,346,545
Key Ratios												
Cash as a % of Operating Revenue	139.1%	164.2%	142.0%	259.1%	111.1%	127.6%	145.2%	164.1%	184.1%	42.1%	63.0%	41.0%
Cash as a % of Net Position	21.8%	28.3%	23.8%	40.7%	17.9%	21.4%	25.2%	29.3%	33.6%	7.8%	12.1%	8.1%
Debt to Equity (Net Position)	-	-	1.1	0.9	0.8	0.8	0.8	0.8	0.7	0.7	0.6	0.6

Uncertainties and Risks

There are a variety of uncertainties and risks that may impact these financial projections, most notably:

- Timing and cost to repair or replace key structures
- Water level variability
- Facility usage, occupancy
- Change in ownership of breakwater structure or change in responsibility for repairs and maintenance

Stakeholders, Revenue, and Infrastructure

The table below is intended to provide an indicative overview of marina users, the funding they provide (or receive), and the infrastructure supporting their use. Seasonal and transient slip holders appear to contribute the most revenue relative to the underlying infrastructure investment required to support their activity, excluding the cost of the breakwaters. By comparison, users of the parking and boat launch areas appear to contribute significantly less revenue relative to the capital investment in their activities. If the Township desired relative parity in the relationship between replacement cost and revenue generation between the various facility users, boat launch revenues would need to increase 82% and parking area related revenues would need to increase 3.2 times. Parking lot and boat launch ramp usage is the most highly subsidized area of the marina relative to the underlying infrastructure cost.

Table 31 - Stakeholders, Revenue, and Infrastructure Investment

Stakeholder		Count	2022 Revenue	Replacement Cost of Related Assets	Related Assets	Revenue / Replacement Cost
Township Residents		4,892	Township residents have received benefits of roughly \$2 million from the Marina Fund related to Greilickville Park and transfers		Park and related maintenance, fire department support	NA
Water Based Users	Seasonal Slip and Buoy Users	210	580,209	5,000,000 (A) 6,700,000 (B) 3,200,000 (C) 1,000,000 (D) 550,000 (E) 16,450,000 (Total)	Docks (A) Breakwaters (B), boater pavilion (C), seawall (D), harbormaster building (50%), parking	4.2% incl. breakwaters
	Transient Slip and Buoy Users	574 Boats, 2,000 Boat Days	105,805			7.1% excl. breakwaters
	CenterPointe Marina	ca. 10	17,134	NA		NA
Land Based Users	Boat Launch Users	10,000 Launches	69,952	1,810,000	Ramps, fish cleaning station, harbormaster building (50%), parking	3.9%
	Parking Lot Users	2,284	22,845	3,050,000	Parking, winter storage	2.2%
	Winter Storage Users	58	45,500			

Key Findings and Recommendations

There are a variety of options available to fund continued development, maintenance, repair, and operation at Elmwood Marina. The challenge, of course, is generating sufficient revenue to cover costs, while balancing the demands of users, lenders, and sources of grant funding. This report includes an overview of potential revenue enhancements that, at minimum, can support the path to the debt funding that will be required to complete Marina Master Plan Phase III construction and, potentially, place the marina on a path to financial self-sufficiency. Summarized below are several recommendations that may be helpful in managing the long term financial and operational health of the marina.

- Work with the MSWP to obtain approval to charge reasonable rates consistent with market supply and demand that are sufficient to cover marina operating and capital costs. Develop a written pricing policy and strategy. Keep pace with inflation
- Develop a 10 to 15 year Marina Master Financial Plan and update it annually. Include sufficient documentation about operating and capital costs, and revenues, at a price and volume level, to better understand and manage marina operations and development
- Develop a Facility Condition Report and update it annually. Include sufficient detail at a component level, and reconcile it to the marina fund asset depreciation schedule
- Implement processes and technologies, such as point of sale transaction entry, for more efficient transaction processing, improved financial control, increased capability to document and analyze usage, and to improve marina operational and financial performance
- Implement a marina focused financial and operating review process with standard management information reporting
- Perform periodic (at least annually) analytic reviews of actual revenues compared to expected revenues at a price and volume level as a reasonableness test of actual revenue
- Evaluate the accuracy of financial reporting of the restricted and unrestricted balances of the net position of the marina fund

Appendices

Marina Pricing History (2015 to 2023)

Numbers highlighted below in brown reflect fee changes from the prior period. You will readily see that there are areas where it does not appear that fees have been raised for more than five years, in many cases in areas with significant capital expense and/or congestion issues (e.g., parking, ramp, etc.)]

Year	2015	2015	2016	2016	2017	2018	2019	2020	2021	2022	2023	
Approval Date	11/14/14	3/9/15	11/9/15	4/11/16	11/1/16	7/24/17	7/24/17	7/24/17	7/24/17	11/30/21	11/30/21	Clinch
Permanent Fees												
Summer Seasonal Slip - 30 - Credit	2,238	2,238	2,350	2,350	2,490	2,490	2,565	2,642	2,722	3,152	3,399	
Summer Seasonal Slip - 30 - Cash/Check	2,173	2,173	2,279	2,279	2,417	2,417	2,490	2,565	2,642	3,060	3,300	3,300
Summer Seasonal Slip - 35 - Credit	2,721	2,721	2,857	2,857	3,028	3,028	3,119	3,213	3,310	3,677	3,965	
Summer Seasonal Slip - 35 - Cash/Check	2,642	2,642	2,771	2,771	2,940	2,940	3,028	3,119	3,213	3,570	3,850	3,850
Summer Seasonal Slip - 38 - Credit	3,114	3,114	3,270	3,270	3,466	3,466	3,570	3,677	3,788	3,992	4,305	
Summer Seasonal Slip - 38 - Cash/Check	3,023	3,023	3,172	3,172	3,365	3,365	3,466	3,570	3,678	3,876	4,180	4,180
Summer Seasonal Slip - 40 - Credit	3,362	3,362	3,530	3,530	3,742	3,742	3,854	3,979	4,090	4,202	4,532	
Summer Seasonal Slip - 40 - Cash/Check	3,264	3,264	3,424	3,424	3,633	3,633	3,742	3,854	3,970	4,080	4,400	4,400
Mooring - Inside Harbor - Credit	824	824	875	875	901	875	928	958	985	1,084	1,170	
Mooring - Inside Harbor - Cash/Check	800	800	850	850	875	876	901	928	956	1,052	1,136	
Mooring - Outside Harbor - Credit	669	669	721	721	743	743	765	788	812	893	964	
Mooring - Outside Harbor - Cash/Check	650	650	700	700	721	721	743	765	788	867	936	
Transient Fees												
Transient Slip Daily Fee - 25	35		30	30	30	30	30	31	31	40	40	
Transient Slip Daily Fee - 26	35		31	31	31	31	31	32	32	42	42	
Transient Slip Daily Fee - 27	35		33	33	33	33	33	33	33	43	43	
Transient Slip Daily Fee - 28	35		34	34	34	34	34	35	35	45	45	
Transient Slip Daily Fee - 29	35		35	35	35	35	35	36	36	46	46	
Transient Slip Daily Fee - 30	43	37	37	37	37	37	37	37	37	48	48	
Transient Slip Daily Fee - 31	43		38	38	38	38	38	38	38	50	50	
Transient Slip Daily Fee - 32	43		40	40	40	40	40	40	40	51	51	
Transient Slip Daily Fee - 33	43		41	41	41	41	41	41	41	53	53	
Transient Slip Daily Fee - 34	43		42	42	42	42	42	42	42	54	54	
Transient Slip Daily Fee - 35	43	43	43	43	43	43	43	43	43	56	56	
Transient Slip Daily Fee - 36	47		45	45	45	45	45	45	45	58	58	
Transient Slip Daily Fee - 37	47		46	46	46	46	46	46	46	59	59	
Transient Slip Daily Fee - 38	47	47	47	47	47	47	47	47	47	61	61	
Transient Slip Daily Fee - 39	60		51	51	51	51	51	48	48	62	62	
Transient Slip Daily Fee - 40	60	53	53	53	53	53	53	50	50	64	64	
Transient Daily Mooring Fee	12	12	12	12	20	20	20	20	20	20	20	
Ramp Fees												
Daily Ramp Usage - Non-commercial - first 15 minutes	5	5	5	5	10	10	10	10	10	10	10	
Daily Ramp Usage - Non-commercial - each additional 15 minutes	10	10	10	10	10	10	10	10	10	10	10	
Daily Ramp Usage - Commercial (launch or retrieve)	12	12	12	12	20	20	20	20	20	20	20	
Seasonal Ramp Usage Fee - before 8/15	50	50	50	50	75	75	75	75	75	75	75	
Seasonal Ramp Usage Fee - after 8/15	30	30	30	30	50	50	50	50	50	50	50	
Charter Fishing Vessel	100	100	100	100	150	150	150	150	150	150	150	
Wall Fees												
Wall Rate - First 2 hours	-	-	-	-	-	-	-	-	-	-	-	
Wall Rate - Thereafter	10	10	10	10	10	10	10	10	10	10	10	
Wall Rate - Overnight	30	30	30	30	30	30	30	30	30	30	30	
Activity Fees												
Boat Sewage Pumpout	10	10	10	10	10	10	10	10	10	10	10	
Launch or Haul Out with Crane	15											
Commercial Launch or Haul Out with Crane	12	15	15	15	20	20	20	20	20	20	20	
Commercial Mast Stepping or Removal	12	12	12	12	15	12	12	15	15	15	15	
Parking Area Fees												
Overnight Parking Fee	10	10	10	10	15	15	15	15	15	15	15	
Winter Storage Fees - Area Based	1.50	1.50	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	1.60	
Winter Storage Fees - Minimum	400	400	400	400	400	400	400	400	400	400	400	
Winter Storage Fees - Masts	50	50	50	50	50	50	50	50	50	50	50	
Off-season Marina Opening Fee - First Hour	25	25	25	25	25	25	25	25	25	25	25	
Off-season Marina Opening Fee - Each Additional Hour	15	15	15	15	15	15	15	15	15	15	15	

MSWP Facility Assessment Cost Estimates

This appendix includes copies of pages from the MSWP Facility Assessment Report dated February 24, 2020, based on cost information as of October 24, 2019.

The first two pages are a summary of the inventory and condition assessment of individual marina components at the Elmwood Township Marina. The next three pages are estimates of the amount and timing of replacement costs, in 2019 dollars over three time periods:

- Within five years
- Between five and ten years
- Between ten and twenty years

The final two pages are MSWP Preliminary Cost Estimate Unit Rates for each major component and sub-component of a marina. The cost estimates exclude mobilization, general conditions, design, permitting or contingency costs. These unit cost estimates were used to compare to, or independently develop “best estimates” of, individual component replacement costs for Elmwood Township Marina where differences exist between MSWP estimates and information from the following sources:

- Actual historical costs for assets included in the Elmwood Township Marina Fund depreciation schedule
- Wade Trim preliminary construction cost estimates
- Estimates for Elmwood Township Marina contained in the MSWP report that appear to be inaccurate

Table 32 - MSWP Facility Inventory and Condition Assessment

Elmwood Township Marina - Greilickville

Facility Owner: Elmwood Township
 Address: 13051 W Bayshore Drive Traverse City Mi 49684
 Site ID: -

Docks

Traditional Floating

Approx Total SF	Construction	Manufacturer	Amt Slips	Slip Size	Age by %	Age Group
22245	Traditional Timber (DNR Standard)	Floatation Docking Systems (FDS)	77	30'	66%	10-20
			24	35'	34%	20-30
			67	40'		

Structures

Type	Total LF	Age	Condition	Average Depth	% Owned by Facility	% Owned by USACE	% Owned by Other	Sufficiently Calm Wave Climate?
Steel Sheet Pile Wall	550	30-40	-	15	100	0	0	NA
Rock Revetment Offshore	780	20-30	Very Good	12	100	0	0	Yes
Steel Sheet Pile Single	1070	20-30	Very Good	8	100	0	0	Yes
Caisson	85	20-30	Very Good	8	-	-	-	-

Utilities

Type	Age	Condition	Additional Information
Potable Water	10-20	Very Good	100 % have vacuum breakers installed
WIFI	<5	Very Good	
Dry Standpipe Fire System	10-20	Very Good	
Wet Fire Hydrant System	10-20	Very Good	
Ice Suppression System	10-20	Functional	12 Units Total
Air Disribution Lines	10-20	Very Good	
Flow Inducers	-	Very Good	12 Units Total
Pumpout	10-20	-	2 Pumpout(s)

Electric Shore Power

Utility Pedestals	% Condition
120 Single 30 Amp	100% Very Good
52 30/ 50 Amp	0% Functional
	0% Bad

Compliant with Electrical Shock Drowning Ground Fault Protection Standards Yes

Boat Launch

Launch Lanes	Paving Material	Pier Type	Age	Amount	Length	Width	Parking Trailer	Parking Vehicle
6	Cast-In-Place	Fixed	30	1	95	5	132	132
	Concrete	Floating	10	2	95	5		

Paddle Sport Launch

Beach/Walk In	Boat Launch	ADA
YES	YES	10%

Boat Storage

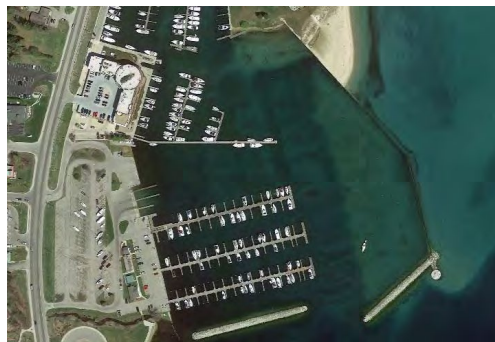
Hull Wash Down	Travel Lift	Hydraulic Trailer	Summer Storage SF	Indoor Heated SF	Winter Indoor SF	Winter Outdoor SF
No	No	No	0	0	0	50000

Site Features

Off-Street Parking Spaces	Total SF Asphalt	Asphalt Condition	Total SF Concrete	Concrete Condition	Total SF Gravel/Unpaved	Gravel/Unpaved Condition	Access Drive SF	Material
132	100	Functional	0	-	0	-	7200	Asphalt
Landscaping		SF	Condition	Facility Responsible?				
		6000	Very Good	Yes				
Walkways		Total LF	Avg. Width	Material		Condition		
		500	6	Concrete		Very Good		

Buildings

Picnic Shelters			Vault Toilets				
Amount	Age	Condition	Amount	Condition			
1	25	Very Good	0	-			
Building 1 Type	Total SF	Amt Toilets	Amt Showers	Age	Condition	Improvements Needed	
Office	450	0	0	4	Very Good	None	
Building 2 Type	Total SF	Amt Toilets	Amt Showers	Age	Condition	Improvements Needed	
Restroom, Harbor Store	1300	10	0	48	Functional	Roof Replacement, Mechanical and ADA Upgrades, and General Interior renovation. It is being renovated this year.	
Building 3 Type	Total SF	Amt Toilets	Amt Showers	Age	Condition	Improvements Needed	
Restroom, Laundry	1200	9	8	31	Functional	Roof Replacement, Mechanical and ADA Upgrades, and General Interior renovation.	



5 Year Projected Cost Estimate

Elmwood Township Marina - Greilickville

Facility Owner: Elmwood Township
 Address: 13051 W Bayshore Drive Traverse City Mi 49684
 Site ID: -

Docks

Item	% Replace	Quantity	Unit	Unit Rate	5 Year Projection
Traditional Floating Dock	34%	22245	SF	\$ 75	\$ 567,248
Total Dock Cost					\$ 567,248

Boat Launch & Paddle Sport Access

Item	% Replace	Quantity	Unit	Unit Rate	5 Year Projection
Boat Launch Ramp	100%	9600	SF	\$ 70	\$ 672,000
Launch Piers	100%	1	EA	\$ 30,000	\$ 30,000
Paddle Sport Launch Access	0%	0	SF	\$ -	\$ -
Total Boat Launch & Paddle Sport Access Cost					\$ 702,000
Total Cost					\$ 1,269,248

5-10 Year Projected Cost Estimate

Elmwood Township Marina - Greilickville

Facility Owner: Elmwood Township
 Address: 13051 W Bayshore Drive Traverse City Mi 49684
 Site ID: -

Docks

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Traditional Floating Dock	66%	22245	SF	\$ 75	\$ 1,101,128
Total Dock Cost					\$ 1,101,128

Structures

Item	% of Total	Quantity	Unit	Unit Rate	10 Year Projection
Rock Revetment Offshore Maintenance Type B	100%	780	LF	\$ 140	\$ 109,200
Steel Sheet Pile Single Wall Breakwater	100%	1070	LF	\$ 1,600	\$ 1,712,000
Total Structure Cost					\$ 1,821,200

Utilities

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Ice Suppression Compressor System	100%	168	SLIP	\$ 1,800	\$ 302,400
Flow Inducers	100%	12	EA	\$ 1,000	\$ 12,000
Pumpout	100%	2	EA	\$ 35,000	\$ 70,000
Total Utilities Cost					\$ 384,400

Boat Launch & Paddle Sport Access

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Boat Launch Ramp	100%	9600	SF	\$ 70	\$ 672,000
Total Boat Launch & Paddle Sport Access Cost					\$ 672,000

Site-Features

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Site Driveway/Approach	100%	7200	SF	\$ 10	\$ 72,000
Parking Lot - Asphalt	100%	100	SF	\$ 10	\$ 1,000
Walkways	5%	3000	SF	\$ 10	\$ 1,500
Total Site-Features Cost					\$ 74,500

Buildings

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Picnic Shelter	100%	1	EA	\$ 15,000	\$ 15,000
Building 2	100%	1300	SF	\$ 400	\$ 520,000
Building 3	100%	1200	SF	\$ 400	\$ 480,000
Total Buildings Cost					\$ 1,015,000
Total Cost					\$ 5,083,228
Total Future Value Cost					\$ 6,831,433

5-10 Year Projected Cost Estimate

Elmwood Township Marina - Greilickville

Facility Owner: Elmwood Township
 Address: 13051 W Bayshore Drive Traverse City Mi 49684
 Site ID: -

Docks

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Traditional Floating Dock	66%	22245	SF	\$ 75	\$ 1,101,128
Total Dock Cost					\$ 1,101,128

Structures

Item	% of Total	Quantity	Unit	Unit Rate	10 Year Projection
Rock Revetment Offshore Maintenance Type B	100%	780	LF	\$ 140	\$ 109,200
Steel Sheet Pile Single Wall Breakwater	100%	1070	LF	\$ 1,600	\$ 1,712,000
Total Structure Cost					\$ 1,821,200

Utilities

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Ice Suppression Compressor System	100%	168	SLIP	\$ 1,800	\$ 302,400
Flow Inducers	100%	12	EA	\$ 1,000	\$ 12,000
Pumpout	100%	2	EA	\$ 35,000	\$ 70,000
Total Utilities Cost					\$ 384,400

Boat Launch & Paddle Sport Access

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Boat Launch Ramp	100%	9600	SF	\$ 70	\$ 672,000
Total Boat Launch & Paddle Sport Access Cost					\$ 672,000

Site-Features

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Site Driveway/Approach	100%	7200	SF	\$ 10	\$ 72,000
Parking Lot - Asphalt	100%	100	SF	\$ 10	\$ 1,000
Walkways	5%	3000	SF	\$ 10	\$ 1,500
Total Site-Features Cost					\$ 74,500

Buildings

Item	% Replace	Quantity	Unit	Unit Rate	10 Year Projection
Picnic Shelter	100%	1	EA	\$ 15,000	\$ 15,000
Building 2	100%	1300	SF	\$ 400	\$ 520,000
Building 3	100%	1200	SF	\$ 400	\$ 480,000
Total Buildings Cost					\$ 1,015,000
Total Cost					\$ 5,083,228
Total Future Value Cost					\$ 6,831,433

Table 33 - MSWP Preliminary Cost Estimates Unit Rates

Preliminary Cost Estimate Unit Rates

Updated: 10/24/2019

Item	Price	Unit	Notes
Docks			
<i>Decking</i>			
Timber	\$ 10	SF	Assumes Southern Yellow Pine or Treated Timber. MDNR/GIA recent pricing.
Composite	\$ 14	SF	MDNR/GIA recent pricing. Adjusted for material cost.
Concrete	\$ 15	SF	Concrete sidewalk. Adjusted with with RS Means for pumped placement. MDNR/GIA recent pricing.
<i>Framing</i>			
Timber frame & Timber Piles	\$ 60	SF	MDNR/GIA recent pricing. Adjusted for material types.
Timber frame & Steel Piles	\$ 70	SF	MDNR/GIA recent pricing. Adjusted for material types.
Steel frame & Steel Piles	\$ 75	SF	MDNR/GIA recent pricing. Adjusted for material types.
Steel Frame & Timber Piles	\$ 67	SF	MDNR/GIA recent pricing. Adjusted for material types.
Timber Crib	\$ 125	SF	Assumes 10' water depth. Estimate.
Steel Crib	\$ 150	SF	Assumes 10' water depth. Estimate.
Steel Sheet Pile Crib	\$ 200	SF	Assumes 10' water depth. Municipal recent pricing.
<i>Construction Floating Docks</i>			
Timber	\$ 75	SF	MDNR/GIA recent pricing.
Steel	\$ 55	SF	Municipal recent pricing.
Aluminum	\$ 65	SF	Municipal recent pricing.
Monolithic Concrete	\$ 100	SF	Municipal recent pricing.
<i>Harbor Walls</i>			
Steel Sheet Pile Crib	\$ 2,200	LF	Assumes 14' height and 30' sheets. MDNR/GIA recent pricing.
SSP w/ Timber Fendering	\$ 1,800	LF	Assumes 14' height and 30' sheets. MDNR/GIA recent pricing.
Concrete Panel Wall	\$ 800	LF	Assumes 14' height and 30' walls. Estimate.
CPW w/ Timber Fendering	\$ 1,800	LF	Assumes 14' height and 30' walls. Estimate.
<i>Decking along Harbor Wall</i>			
Concrete	\$ 15	SF	MDNR/GIA recent pricing. Adjusted with RS Means for Pumped Placement.
Asphalt	\$ 8	SF	Municipal recent pricing. Adjusted for difficult placement.
<i>Shoreline & Breakwater Structures</i>			
Steel Sheet Pile Wall	\$ 1,400	LF	Assumes 14' height and 30' sheets. MDNR/GIA recent pricing.
Concrete Panel Wall	\$ 800	LF	Assumes 14' height and 30' walls. Estimate.
Rock Revetment Shoreline	\$ 1,000	LF	Assumes 12' total heights. MDNR/GIA recent pricing.
Rock Revetment Offshore	\$ 5,000	LF	Assumes 15' total height. Municipal recent pricing.
Steel Sheet Pile Single	\$ 1,600	LF	Assumes 35' sheets. MDNR/GIA recent pricing.
Steel Sheet Pile Double	\$ 5,000	LF	Assumes 35' sheets and 6' wide. MDNR/GIA recent pricing.
Caisson	\$ 4,000	LF	Assumes 16' width, concrete and steel construction, and 30' sheets. Estimate.
Floating Wave Attenuator	\$ 1,500	LF	Assumes 10' width. Municipal recent pricing.
<i>Boat Launch</i>			
<i>Ramp Material + Piers</i>			
CIP Concrete Paving	\$ 70	SF	Includes Dewatering. Estimate.
Planks	\$ 30	SF	Includes Demo. MDNR/GIA recent pricing.
Gravel	\$ 8	SF	Estimate.
Skid Pier	\$ 15,000	EA	MDNR/GIA recent pricing.
Fixed Pier	\$ 15,000	EA	Assumes 5' by 30'. Estimate.
Floating Pier	\$ 15,000	EA	Assumes 5' by 30'. Estimate.
<i>Paddle Sport</i>			
Platform	\$ 45	SF	Assumes EZ Dock construction.
<i>Dredging</i>			
Dredge	\$ 40	CY	MDNR emergency dredge pricing escalated from 2013 cost.
<i>Utilities</i>			
<i>ESP</i>			
ESDGFPs Upgrade	\$ 5,000	/SLIP	Assumes rewiring. MDNR/GIA recent pricing.
20 amp duplex	\$ 3,000	EA	Installed pedestal cost.
Single 30 amp	\$ 3,000	EA	Installed pedestal cost.
Twin 30 amp	\$ 3,000	EA	Installed pedestal cost.
30/50 amp	\$ 3,500	EA	Installed pedestal cost.
Twin 50 amp	\$ 3,500	EA	Installed pedestal cost.
100 amp	\$ 5,000	EA	Installed pedestal cost.
Dock Box single 30	\$ 2,000	EA	Installed pedestal cost.
Dock Box Twin 30	\$ 2,500	EA	Installed pedestal cost.
Dock Box 30/50	\$ 3,000	EA	Installed pedestal cost.

Item	Price	Unit	Notes
Dock Box Twin 50	\$ 3,500	EA	Installed pedestal cost.
Pot Water system	\$ 800	/SLIP	Installed pedestal cost.
Hose Bibs & vacuum breaker	\$ 12	/SLIP	Installed pedestal cost.
Wifi	\$ 5,000	EA	Wifi in buildings only. (Not Wifi on docks)
Dry Fire Standpipe	\$ 800	/SLIP	MDNR/GIA recent pricing.
Wet Fire Hydrant	\$ 1,000	/SLIP	Estimate.
Compressors	\$ 1,800	/SLIP	MDNR/GIA recent pricing.
Flow Inducer	\$ 1,000	EA	MDNR/GIA recent pricing.
Fuel System			
Fuel Dock - Fixed	\$ 150	SF	MDNR/GIA recent pricing.
Fuel Dock - Floating	\$ 100	SF	MDNR/GIA recent pricing.
Fuel Dock - Harbor wall	\$ 70	SF	Estimate.
Dispensers	\$ 15,000	EA	MDNR/GIA recent pricing.
Fuel Lines	\$ 100	LF	MDNR/GIA recent pricing.
Above ground single	\$ 50,000	EA	Assumes tank cost only. Estimate.
Above ground dual	\$ 60,000	EA	Assumes tank cost only. Estimate.
Below Ground Single	\$ 100,000	EA	Assumes tank cost only. Estimate.
Below Ground Double	\$ 120,000	EA	Assumes tank cost only. Estimate.
Pump Out	\$ 35,000	EA	MDNR/GIA recent pricing.
Collection System Hull Wash Down	\$ 100,000	EA	Only one facility has it and we did not ask about the age or condition - not used in cost estimate. For reference only.
Haul Out Services			
Lift Well	\$ 500,000	EA	Assumes pile supported and includes travel lift. Estimate.
Hydraulic trailer	\$ 100,000	EA	Product quote. Estimate.
Boat Storage	\$ 50	SF	Building price. Not used in cost estimate. For reference only.
PWC Racks	-	-	-
Forklift	\$ 75,000	EA	Not used in cost estimate. For reference only.
Parking			
Asphalt	\$ 10	SF	Municipal recent pricing.
Concrete	\$ 7	SF	Municipal recent pricing.
Gravel /Unpaved	\$ 5	SF	Municipal recent pricing.
Landscape Maintenance	\$ 1	SF	Municipal recent pricing.
Ped Walkways			
Concrete	\$ 10	SF	Municipal recent pricing.
Asphalt	\$ 7	SF	Municipal recent pricing.
Unit Paver	\$ 30	SF	Municipal recent pricing.
Gravel	\$ 5	SF	Municipal recent pricing.
Building	\$ 400	SF	Municipal recent pricing.
Picnic Shelter	\$ 15,000	EA	Municipal recent pricing.
Vault Toilet	\$ 10,000	EA	Municipal recent pricing.