

COMPREHENSIVE Marina Master Plan

2021 Update
City of Des Moines



Figure 1. City of Des Moines Marina

ACKNOWLEDGEMENTS

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The 2021 Comprehensive Marina Master Plan
was adopted by City Council in open public meeting on
_____, 2021

Thank You!

Special thanks goes out to the Harbormaster's Working Group members Todd Powell, Bill Linscott, and Ken Rogers, who represented the boating community and provided invaluable insight into the development of this 2021 Comprehensive Master Plan.

For any questions, comments, or feedback concerning this draft. Please email
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EXECUTIVE SUMMARY

The Des Moines Marina—owned and operated by the City of Des Moines—has served the community well since its construction in 1970. Now, due to the corrosive saltwater environment, economic conditions, changing public interest, and age, many Marina facilities, and various infrastructure within the Waterfront and Redondo Zones, are in dire need of repair and replacement. The seawall, for example, has been repaired from in front of CSR to the Southeast corner of the north parking lot, however the remainder of the seawall for the north lot and south lot will need to be reconstructed entirely. Thankfully funding for the seawall replacement in the north lot has been secured. Construction will begin in August 2021 and expected to be completed by July 2023. The completion of the southern portion of the seawall will need to be addressed as a future task.

Meanwhile, boating activities and trends have changed since the Marina’s inception and even more so since the worldwide Coronavirus pandemic. Salmon fishing and recreational crabbing seasons are now severely restricted and pleasure boating has become increasingly popular. Studies have found that boaters are “trading up” to larger boats, and family boating has replaced fishing as the dominant activity on the water. Fortunately, the Marina’s 2007 bonds will be paid off in 2022 allowing the opportunity to issue new bonds for Marina improvements and re-development.

Over the course of several months, the Des Moines City Council, the Municipal Facilities Committee, Marina Tenants, and other interested stakeholders have studied existing conditions at the Marina, assessed repair needs, evaluated current and projected boating trends, and discussed numerous options for facility upgrades. Changes in boating trends due to the global COVID-19 pandemic preventing normal domestic and international travel have been taken into consideration as consumers are looking for alternate means of activity such as recreational boating. Statistical, financial, and policy analysis has been provided by City Administration and consultants from the Waggoner Group and from Paul Sorensen Principal for BST Associates. This 2021 Comprehensive Marina Master Plan summarizes and synthesizes the conclusions and recommendations for redevelopment of the Marina.

The Marina Master Plan also provides guidance regarding the services to be offered by the Marina in the future. Proposed changes in service may require the construction of new improvements, the removal of existing facilities, or only a minor change in daily operations. In general terms, in-water projects are intended to help the Marina maintain a competitive advantage in attracting moorage tenants and guests. Upland improvements and development will support in-water activities and make the Marina more attractive and pedestrian friendly. The Comprehensive Marina Master Plan responds to the Marina’s primary purpose and function as a boating facility while simultaneously promoting the Marina as a premier destination for those arriving by alternative methods other than the boating community.

Projects identified in the 2021 Comprehensive Marina Master Plan would be implemented over the next 20 years, or more. Projects were initially categorized into three tiers of relative priority. Tier 1 projects are those that ideally would be completed in the “near term”, within the next 5 years. Environmental analysis, engineering, and permitting for the near-term projects began in early 2021. Tier 2 projects are those that would be completed within the next 10 years. Tier 3 projects are those that are “long term”, and ideally would be completed in the next 20 years. The timing of Tier 2 and Tier 3 projects is subject to the availability of resources.

Master Plan Recommendations Include: Tier 1 (Near-Term) Capital Improvements

1. Tenant Restroom Replacement in south marina lot.
2. Replacement of bulkhead from the northeast corner of the north parking lot to the fishing pier and around to the southeast corner of the north parking lot (Waterfront Zone Project).
3. North lot restroom replacement (Waterfront Zone Project).
4. Replacing M & N docks and associated infrastructure. Possibly include L dock.
5. Continued upgrades to the Marina infrastructure, specifically power and water systems.
6. Upgrade of electrical services on the guest dock, including infrastructure for charging stations for electrical vessels.
7. Planning and design for the Adaptive Purpose Building (APB) with dry stack boat storage.

Tier 2 (Mid-Term) Capital Improvements

1. Construction of Adaptive Purpose Building with dry stack boat storage.
2. Replacement of the remaining portion of the original seawall south of CSR, to the southeast corner near the Des Moines Yacht Club.
3. Extension of the pedestrian walkway south of CSR to A dock, including construction of pedestrian amenities, such as benches, landscaping and raised concrete sidewalks.
4. Replacement/reconfiguration of D, E, F, G docks.
5. Fuel Tank upgrade.

Tier 3 (Long-Term) Capital Improvements

1. Replacing H, I, J, K & L docks and necessary infrastructure.
2. Improve pedestrian connections/pathways between Beach Park, Des Moines Creek trail and the Marina (Water Front Zone Project).
3. Replacement/upgrade of guest moorage restrooms and Marina office.
4. Travel lift replacement.

Completed Capital Improvements from the 2007 Master Plan

1. Replacement of the seawall between CSR & northeast wall located in the north lot.
2. Along the seawall, construction of pedestrian amenities, such as benches, landscaping and raised concrete sidewalks.
3. Improved pedestrian connections/pathways between Beach Park, Des Moines Creek Trail, and the Marina.
4. Reconfiguration of vehicular circulation areas to improve safety and efficiency.
5. Construction of new travel lift pier.
6. Dredging the entrance channel to the boat basin.
7. Reconstruction of a portion of J Dock.
8. New Electrical service from CSR North.
9. Creation of the Container Village (a community of small businesses).
10. Facilitation of SR3 Marine Mammal Rescue

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1. INTRODUCTION

Background

The previous *Comprehensive Marina Master Plan* was adopted by the Des Moines City Council in late 2008. The general purpose of that plan was to determine what major repairs and capital replacements would be needed to keep the facility operating in its current configuration. Although the plan identified some long-term needs, its intent was to focus on needs through 2020. At the same time, the City Council also adopted a rate plan that included a capital component to help fund the improvements. Major projects completed under that plan include replacement of the underground fuel tanks and fuel delivery system, the repair of 800 hundred feet of the seawall, the purchase of the quartermaster property, and various maintenance project Marina wide. The rate plan also produced capital savings of approximately \$1.4 million dollars by the end of the planning horizon, resources that will be used to fund dock replacements as part of the 2021 *Comprehensive Marina Master Plan*.

In 2007, the Council directed the Marina staff to look at longer-term capital needs. Since the recreational boating industry had changed significantly since the Marina began operation in 1970, staff analyzed the services and facilities offered to see if they matched both current and future boater needs. The result of that analysis was the *2007 Comprehensive Marina Master Plan*, which included elements of a long-term business plan for the Marina as well as a plan for replacing major capital assets. A significant element of the Plan included expanding the in-water guest moorage facilities at the Marina's north end and reconfiguration of the permanent moorage to accommodate larger boats.

The 2021 *Comprehensive Marina Master Plan* represents an update to the *2007 Comprehensive Marina Master Plan*. It includes a preferred commercial development option based on continued changing conditions within the boating community and newly emerging opportunities to improve upland facilities that will provide additional much needed revenue streams, as well as further refinement of the permanent moorage reconfiguration options. This document will also identify the three separate revenue/expenditure zones that have been developed; the Enterprise Funded Marina Zone, the City General funded Waterfront Zone and Redondo Zone.

Marina Vision: The Des Moines Marina is the Crown Jewel of Des Moines. It is a significant asset that serves a dual purpose. It provides the boating community – locally, regionally, and internationally – the opportunity to enjoy the unique qualities and characteristics of the Des Moines community, and, it allows the Des Moines community to interface with the ambiance of a functional waterfront Marina with breathtaking views of the Puget Sound.

Goals

From the outset, the primary goal for this planning process was to focus on the Marina's core business activities and develop a plan to keep the facilities and services in high demand with recreational boaters. In keeping with the Marina vision as a place for the general public, a second goal was to develop long-range plans for improving facilities used by non-boating visitors. Four tasks were identified to accomplish these goals:

- Develop a strategic investment and financial plan for the long term sustainability of the water side of the Marina.
- Determine when and how each of the Marina's major assets will be managed, maintained, and upgraded or replaced.
- Develop a plan for the Marina uplands that creates safe and inviting pedestrian areas, and identifies facilities and amenities that serve the general public, the boating community, and at the same time, generate additional revenue streams for the Marina.
- Integrate the uses and activities of the landside and waterside of the Marina so that the facilities will be well positioned as community conditions to evolve and new opportunities emerge.

Planning and Analysis Process

This update draws heavily on the work completed under the *2007 Comprehensive Marina Master Plan*, and more recent efforts including public outreach, regular meetings with the City Council, the Municipal Facilities Committee, the Des Moines Marina Association, the Des Moines Yacht Club, interested stakeholders, and the Harbormasters Working Group, as well as interviews with Marina staff, and a variety of special studies. All background reports and information are available at the Marina office or on the Marina's Web-site.

Several new studies have also been completed since 2007 and have been incorporated with this update.

New studies and reports include the following:

- *Des Moines Marina Service Life Report*. The Service Life Report provides a detailed analysis of the condition of the Marina docks and boat use areas. The draft report was completed in December 2020 by Reid Middleton.
- *Limited Tax General Obligation Bonds, 2022 option*. This is a summary of the current Debt profile and debt capacity completed January 2021 by Key Bank for new bond scenarios.
- *Waggoner Marina Survey*. This report summarizes the results of the Waggoner Marine Consulting project to evaluate the Marina. Completed in March 2019 by Waggoner Marine Services.
- *Waggoner Marina Phase 2 Study*. This report summarizes the results of the Waggoner Marine Consulting project to evaluate the Marina. Completed in March 2021 by Waggoner Marine Services.
- *Passenger Only Ferry Service Study*, by Diedrich*RPM, along with participation in PSRC – kpff study.

- *Marina Redevelopment Studies*, prepared by the Holmes Group
- *Marina Redevelopment RFQ (Land Side)*
- *Des Moines Marina Electrical Upgrade Study*, by Wood/Harbinger Inc. Provided engineering and design services for the Marina's Upgrades to the Power Distribution System Project (Phase1), Phase 1 was the northern upgrades.

Community Outreach

Municipal Facilities Committee

The Marina meets with the City Council's Municipal Facilities Committee monthly to keep the group informed and updated on all projects within the Marina, along with receiving feedback and direction before presentations are made to the entire Council.

Argosy Boat Community Meeting

In September 2017 City Staff and City Council members met with the Des Moines Community regarding future options for Marina development. Argosy Boats graciously donated and docked a vessel at the Marina. The Boating community and Des Moines residents were invited to join, thus having the opportunity to voice their opinions and make choices on what their hopes for future Marina upland development may be considered. Ranking high on the lists were a Boutique Hotel, Restaurants and a Brewery.

Des Moines Yacht Club Community Meeting

October 2017, the Marina and City Staff along with City Council met with the Boating community along with residents of the Marina district to highlight the thoughts and suggestions from the Argosy meeting, and encouraged those that attended or those that missed the Argosy, an opportunity to voice their thoughts and concerns.

Des Moines Marina Association (DMMA) Meetings

The Marina staff meets monthly with the DMMA to keep the lines of communication open by updating them with information on current Marina operations as well as future visions. This is also the time Tenants have the opportunity to ask staff questions or express any needs that should be addressed.

Harbormasters Working Group

Marina and City Staff meet monthly with the Harbormasters working group, this group was formed as a tool to help communicate directly to the Boating community, concerning projects being considered for both the waterside and the supporting uplands.

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2. EXISTING CONDITIONS

The existing Marina is 51 years old, and many of its facilities are at or near the end of their design life. This section summarizes the condition and operational considerations of existing Marina facilities and assets.



Figure 2-1. Existing Marina Configuration

In-Water Facilities

The City of Des Moines Marina consists of an assortment of in-water assets, including both permanent and guest moorage, a fuel dock, and a breakwater. The following section provides a summary of their capacities, condition, and other operational considerations.

General Dock Infrastructure

A general description of the infrastructure that supports in-water operations is provided below.

Pilings

In 1988, only 11 of the Marina's pilings (out of 902) were found to be beyond repair. Another 116 were classified as having "some damage." In 1995-96, a re-inspection of a sample of the pilings that had been classified as having some damage found that they had not deteriorated significantly [Facility Master Plan, July 1996]. A service of life report was performed in 2020 finding that overall, the timber piling within the marina today remain in fair condition given their age of approximately 50 years [Service Life Report, 2020].

A small percentage of the pilings have deteriorated and have either been cut down to the mudline or removed and replaced with steel piling. The floating docks were designed with 33 percent more pilings than they actually need to withstand normal loading. Because the pilings in the timber breakwater were driven much closer together they are not as critical, although that structure has to withstand a much greater load than the rest of the seawall.

Past experience with treated timber pilings shows that deterioration will accelerate with time. It is probable that the percentage of unserviceable pilings will increase in the next five years.

The existing pile hoops are in varying condition. The pile hoops should continue to be repaired as necessary but similar to the piling are not the critical element in estimating the remaining life of the overall system.

Floataction Systems

Timber Float System

The timber float systems within the marina are poor condition between E dock and N dock. Evidence of saturation and areas of loss of adhesion and separation of the floatation materials can be seen throughout the deck.

- *Open Moorage.* The uncovered timber docks are rated as poor. Most of the open moorage float systems are concrete and in fair-good condition. The open moorages on M dock (40 ft. slips) and N Dock (mostly 50 ft. slips) are the original wood floats and there are some isolated areas with deteriorating decks and pressure-treated walers. The wood open moorage floats on M and N Docks require more maintenance due to their exposure.

- **Covered Moorage.** Most of the covered timber float system have been protected from extreme weather and appear to be in fair condition given the age. Random measurements of foam floatation blocks show some loss of floatation. Areas of concern are where otters have removed the foam to make nests or the foam has deteriorated due to contact with chemicals in the water. There are approximately 2,250 exposed foam floatation blocks under the covered moorage docks. The staff has developed a system for replacing the original foam blocks with encapsulated blocks that will be less vulnerable to physical and chemical deterioration. As the docks are refurbished, the blocks that are no longer serviceable will be replaced.

Concrete Float System

The concrete float systems within the marina are in fair to good condition. The decks of the concrete pontoons are in overall good condition. However, the concrete floats are starting to show within some locations evidence of delamination, spalling, and corroded and exposed reinforcement.

Decking

Replacing the original untreated decking with treated boards is part of regular maintenance. Overall, decking remains in good condition on most docks.

Utilities

Following adoption of the 2001 Marina Master Plan, Marina staff began a program of upgrading the Marina's utility infrastructure. In the first phase, A, B, C and D Docks were reconditioned and all utilities were replaced, including the shore power boxes and the main distribution panels. In early 2003, the City hired Wood/ Harbinger Inc., an electrical engineering firm, to design a new medium voltage distribution system. As part of that project, the firm conducted an assessment of the Marina's entire electrical system and developed alternatives and cost estimates for replacing the system. This report, titled "City of Des Moines Marina Electrical Upgrade Study", is described in the Attachment List – Chapter 8.

After the Reid Middleton review of the upgrades that were made in the early 2000's the utilities across all docks at this time are now rated between Fair to Good.

Covered Moorage System

The covered moorage roof system is in poor condition with the exception of the roof replacement of part of J dock due to the 2013 fire. Majority of the vertical timber support posts show some camber from previous snow-load.

Steel Truss Joists

The roof structure's trusses are generally in decent condition, however they show signs of corrosion across all covered docks. Cleaning and painting trusses is an ongoing maintenance effort.

Metal Roofing

The metal roofing does not show signs of significant deterioration. In 2003, all of the fasteners on the roofs were checked and resealed. This continues to be an ongoing maintenance process.

Breakwater and Bulkhead Protection

Rock Breakwater

The existing rubble rock breakwater that provides wave protection for the Marina is in good condition. The rock break water is located on property owned by the DNR, and the Marina pays an annual lease payment for use of this area.

Timber Breakwater

The timber breakwater (Wing Wall) near the Marina entrance shows signs of deterioration and will be replaced in the North Bulkhead Project in 2021-2022.

Bulkhead

The bulkhead surrounding the upland area has undergone several stabilization programs over the last decade. The last stabilization occurred in 2009 when the bulkhead from the northeast corner of the guest moorage basin to M dock was replaced with a steel sheet pile wall with a concrete cap. The South timber bulkhead will need to be replaced in the coming years.

The portion of the Bulkhead surrounding the North Parking lot is defined as the Waterfront Zone's. The portion of the Bulkhead South, from the "N" dock to Anthony's is within the Marina's enterprise fund, and its future replacement will be funded with Marina revenues.

Permanent Moorage

The majority of revenue generated by Marina operations derives primarily from permanent moorage. In 2019, permanent moorage revenues were \$1.974 million, or 50 percent of total Marina revenues. The Marina has 729 permanent in-water moorage slips, including 466 (64%) covered and 263 (36%) uncovered. Slips range in size from 20 feet to 62 feet, with 66% of the slips less than 30 feet long. Table 2-1 provides a summary of the permanent wet moorage asset.

Table 2-1. Permanent Moorage Assets

Length (ft.)	Number of Slips			Percent
	Covered	Uncovered	Total	
20	29	8	37	5.1%
24	141	47	188	25.8%
28	159	98	257	35.2%
30	8	0	8	1.0%
32	52	19	71	9.8%
36	40	30	70	9.6%
40	26	39	65	8.9%
50	11	17	28	3.8%
54	0	2	2	0.3%
62	0	3	3	0.4%
Total	466	263	729	
Percent	64%	36%		

Permanent Moorage Utilization

Overall, slip utilization at the marina over the past several years has declined with vacancies going from an average of 4 percent per year in 2007 for covered slips and 2 percent for open slips to a combined 11 percent vacancy rate in 2020. There is a general trend that indicates growth in the vacancy rate, particularly among smaller slip sizes. However, the trend is much less than at other marinas currently on Puget Sound.

Currently, there are approximately 200 people on the various waiting lists. When the 2001 Master Plan was adopted, there were approximately 650 people on the lists. This significant decrease is mainly due to the changing boating trends over the past 20 to 30 years. Waiting times for 20 – 28 foot open and covered slips range from 0 to 4 months, depending on the time of the year. The waiting list in the larger slips (30 – 62 foot) range from 1 to 9 years.

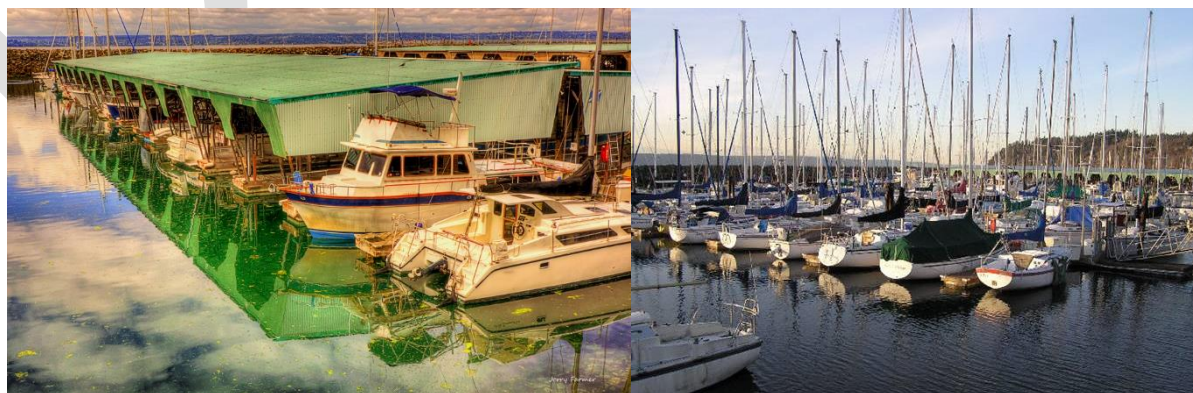


Figure 2-2. Covered and Uncovered Permanent Moorage

Guest Moorage

The City of Des Moines Marina has 1,800 lineal feet of guest moorage docks. The guest moorage area has, five 32-foot slips, eight 40-foot slips, and eight 50 foot slips. The remaining 800 feet are side-tie spaces, where 400 feet is leased by Ranger Tugs.

During the summer season (May 1 – October 31) guest moorage slips are rented based on a daily rate. In the last three years the Marina has shifted from a “first come-first serve” operation to a “reservations accepted” model, similar to other marinas in the Puget Sound with strong guest moorage businesses. The Marina will accept reservations for individual boats 32 feet or larger or for groups of five or more vessels. During the winter season (November 1 – April 30) guest moorage space is available for rent on a monthly basis. Summer and winter guest moorage rates are summarized in Table 2-2 below.

Table 2-2. Guest Moorage Rates - 2021

Summer Moorage		Winter Moorage	
Length of Vessel	Price per Day	Length of Vessel	Price per Month*
0' - 20'	\$20.00	0' - 20'	N/A
21' - over	\$1.00/ foot	32' - 35'	\$14.58 per foot
		36' - 39'	\$15.45 per foot
		40' - 44'	\$16.50 per foot
		45' - 49'	\$16.50 per foot
		50' - 59'	\$18.65 per foot
		60' - over	\$19.35 per foot

* Monthly winter moorage rates include a 12.84% leasehold tax on top of the per foot rate. The per foot rate included utilities less electricity which is metered.



Figure 2-3 Guest Overview



Figure 2-4 Guest Moorage

Guest Moorage Utilization

Historically, boaters using the guest moorage have been recreational salmon fishermen who also utilized the public sling launch before its removal in 2009. As fishing opportunities in the Puget Sound have decreased over the last several years, the number of public launches declined, resulting in a decrease in guest moorage utilization as well. Between 2001 and 2005 the number of boats using overnight moorage fell from a high of 9,367 boat nights in 2001 to 5,789 boat nights in 2005. This represents a decline of 38 percent. Over the last few years up through 2019, utilization trends show a continued decrease in overnight guest moorage and an increase in demand for temporary monthly moorage has increased.

Future utilization of the guest moorage will depend heavily on successfully marketing the Marina to alternate users and integration with land side amenities and attractions. With the continued decline in recreational salmon fishing, the Marina will look to target organizations/clubs, individual or family cruisers, and other similar groups to keep the guest moorage viable.

Activity Float/Pavilion

In 2009 with the removal of the sling launch, that area was converted to include a 115 foot by 50 foot activity float. Shortly after that installation a covered structure was installed which included lighting, heating, and tables & chairs for the purpose of group rentals primarily for visiting yacht club groups. In 2020 this area underwent additional upgrades to double the indoor space and is now available to be used to host Yacht Clubs, and additionally as a Marina facility rental for general public use.

Fuel System

Fuel Dock

The fuel dock sells gasoline, diesel, propane (located upland), marine engine products, drinking water, and snacks and soda. In an effort to promote compliance with State Regulations regarding Clean Water Standards, the Marina also offers two free service pump-out stations for vessel holding tanks located on the fuel dock and the end of the north pier. To stay competitive, the Marina staff actively surveys marine fuel prices around Puget Sound.



Figure 2-5. Fuel Dock

The original wood fuel dock float was replaced with a concrete float in 1988 when the guest moorage area was rebuilt. The fuel dock has three fueling stations that can dispense gasoline or diesel. Two of the stations can easily accommodate boats up to 75 feet in length, while the other station is usually used by smaller boats up to 26 feet long. The fuel float and staff building require very little maintenance.

The Fuel Dock has one high flow diesel and unleaded pump on the north side of the dock. Additional upgrades should be completed by early 2022.

Fuel Tanks and Delivery System

The existing fuel delivery system requires a significant amount of repairs and/or maintenance each year. In 1998, the Marina's entire fuel system was completely rebuilt. New fuel dispensers, electronic inventory/delivery systems, along with three 10,000 gallon double wall fiberglass tanks were installed. Now that the system is 23 years old and has been exposed to the harsh Marine environment along with changing environmental regulations, repairs and upgrades are necessary.

Landside Facilities

Several landside facilities support various Marina activities and operations. These facilities are described below.

Harbormaster Building

The 2,500 square foot Harbormaster Building is a two-story wood frame building constructed in the early 1970s. The ground floor is 1,300 square feet and is currently occupied by the Marina Maintenance and service staff. Utilization by the Maintenance Shop may not represent the highest and best use for this facility given its valuable location on the central waterfront. Harbormaster offices are located on the second floor and occupy a total of 1,200 square feet and is currently occupied by the Marina Office Staff and Beach Park Event Center staff.



Figure 2-6. Harbormaster Building

Restrooms

There are two restrooms within the Marina Zone, and one in the Waterfront Zone. The restroom located by the Fishing pier is within the Waterfront Zone and is open to the general public. The central restroom by the Harbormaster office is open to Marina moorage customers and Quarter Deck customers, while the southern restroom is reserved for Marina tenants only. Both of these restrooms are within the Marina Zone. Shower facilities are provided for tenants in the southern restroom and for overnight moorage guests in the restroom near the Harbormaster office.

The Marina's public restrooms are outdated and should be improved. When making decisions about travel itineraries and moorage, boaters place high importance upon marina amenities such as restrooms and laundry facilities. There are currently no laundry facilities at the Marina for tenants or guest moorage. The restrooms adjacent to the Harbormaster's office are in poor condition and in need of significant repairs. Considering the structure's state of deterioration, complete demolition and replacement is considered the most economically viable alternative.

Dry Sheds

The Marina has 79 remaining dry sheds, originally built in 1969, house boats up to 20 feet long. Each space in the one-story building is 25 feet long by 8 feet 11 inches wide and opens onto the parking lot via a garage door. Some southern facing doors were replaced in 2018 but many of the remaining shed doors require replacement, with an estimated cost of approximately \$1,500 per door. Dry shed tenants launch their boats with the small sling hoist located at the north end of the shed area. Based on current conditions, the estimated remaining useful life of the sheds is between 3 and 5 years.

Dry Shed Utilization

Like the small slips, the sheds have seasonal vacancies and very short waiting lists. A survey of the sheds in the winter of 2020 showed that they are used for a variety of storage purposes. The results from this survey are summarized in Table 2-3 below.

Table 2-3. Dry Storage Utilization

Use of Shed	Number	Percentage
Vacant	0	0
Marina Use	4	5.0
Kayak Storage Program	2	2.5
Boats used on regular basis	50	64.1
Boats not used regularly	20	25.3
Boats not being used at all	17	21.5
Sheds used for general storage	7	8.8
Total Sheds	79	100

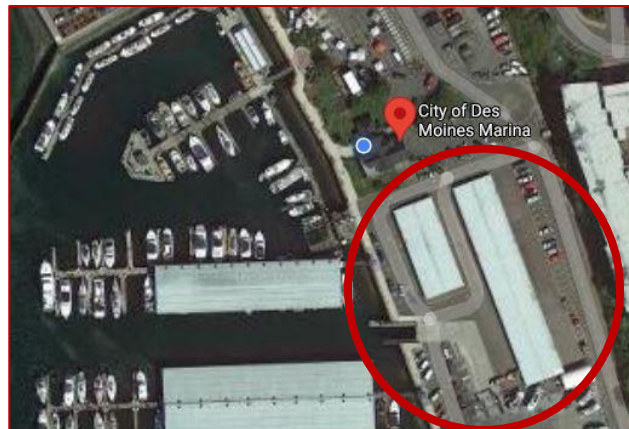


Figure 2-7. Dry Sheds

Boat Yard

The City of Des Moines leases approximately 33,000 square feet of centrally located uplands to CSR Marine. CSR has been at the Marina for 20 years and is the only provider of repair services located on site and performs all types of recreational boat repairs. The lease includes a 3,200 square foot building used for office, retail and repair and a 16,500 square foot paved yard area. CSR operates a 25-ton travel-lift with a beam capacity of 14'- 6".



Figure 2-8. Boat Yard



Figure 2-9. Travel Lift Pier

Travel Lift Pier

The travel-lift pier located between Docks M and N is primarily utilized by CSR Marine. This structure was rebuilt in 2009 with the new seawall in this area.

Dry Shed Launcher

The dry shed tenants launch their boats with the small sling hoist located at the north end of the boat shed area just south of the Harbormaster Building. Marina personnel also utilize the launch for marina maintenance purposes as well as in-water tenant launch/hauling appointments.

The dry shed launcher pier is a timber piling-supported structure. The pilings were evaluated during a thorough inspection in August 2018 it was discovered that there is severe deterioration in the super structure and at this point is operating with one hoist with limited weight capacities.



Figure 2-10. Dry Shed Launcher

Storage Yard

Located along the East bank behind the Harbormasters office is a 33,000 sq. ft. pieces of Waterfront property. Currently, this property is being considered for future Marina development. Some of the considerations for the use of the space are commercial purposes, retail and offices, and a Hotel.

Just south of this property a stairwell and walking path are being developed to provide a direct connection from the Marina's floor to the City's downtown.

Parking

The number of parking spaces within the Marina generally accommodates present demand. Existing on-site parking includes the following:

North Parking Lot	173	single vehicle spaces
Central Parking Lot	57	single vehicle spaces
Office Parking Lot	7	single vehicle spaces
Dry Shed – East Side	24	single vehicle spaces
South of Boat Yard & M Dock	307	single vehicle spaces
	22	vehicle-trailer spaces
Total Existing Parking	590	spaces



Figure 2-11. Des Moines Marina Today

Waterfront Zone

The image below identifies the difference between the Waterfront Zone and the Marina Zone; both of which are located on the Marina floor. Revenues and expenses from the Waterfront Zone are part of the City's General Fund, and not part of the Marina Enterprise Fund. While Maria staff may provide operation and maintenace services in the Waterfront Zone, those expenses are accounted for as a City general fund function.



Figure 2-12. Waterfront Zone vs. Marina Zone

Waterfront Zone Facilities

Timber Pile Bulkhead

The timber-pile bulkhead surrounding the upland area of the north parking lot has undergone several stabilization programs over the last decade. Beginning in 2021, the remaining north parking lot bulkhead will be replaced all the way around the fishing pier and to the northeast corner of the parking lot.



Figure 2-13. Existing North Timber Pile Bulkhead



Figure 2-14. Existing West Timber Pile Bulkhead

Fishing Pier

The fishing pier was constructed in 1980 with funding from the Interagency Committee for Outdoor Recreation and Community Development Block Grant Funding for King County and is an ideal complement to the Des Moines Waterfront area and Marina. The pier has an artificial reef to encourage diverse sea life, which was designed with the help of several consultants, including oceanographer Jacques Cousteau's eldest son. The pier provides excellent opportunities for fishing, walking, and sightseeing.

The concrete piling and pile caps that support the pier were damaged during the Nisqually earthquake in 2001. The pier experienced significant motion during the event and the pilings and pile caps were cracked in several places. During the summer of 2002 the pier was repaired by removing the concrete in the damaged areas and filling in the damaged areas with epoxy/concrete patching compound.



Figure 2-15. Fishing Pier

Some of the support pilings that were more seriously damaged were fitted with steel reinforcing jackets and some sections of the railing were removed and refitted with stronger connection plates. At this time the pier is in good condition and remains a popular facility.

North Parking Lot

The Waterfront Zones north parking lot of the Marina is the parking area north of the Harbormaster office to the north bulkhead of the Marina. This parking lot currently can hold up to 173 single vehicles. It is also available to rent for event purposes and regularly hold annual community events such as the Farmers Market, Fourth of July Show, and the Classic Car & Wooden Boat show.

North Parking Lot Restroom

As described in the Landside Facilities section. There is one restroom in the Waterfront Zone located by the public fishing pier. The current restroom was designed as a designated men's and women's brick block restroom. The facility was dedicated in 1980. It has stainless fixtures, no hot water and is open to the public 24 hours a day 7 days per week.

This facility is now past its useful service life.



Figure 2-16. Public Restroom in the Waterfront Zone

Redondo Zone

Similar to the Waterfront Zone, the Redondo Zone was created to differentiate and distinguish this area as separate from the Marina. Revenues and expenses from the Redondo Zone are part of the City's General Fund, and not part of the Marina Enterprise Fund. While Maria staff may provide operation and maintenance services in the Redondo Zone, those expenses are accounted for as a City general fund function.



Figure 2-17. Redondo Zone

Redondo Zone Facilities

Redondo Boat Ramp

The City of Des Moines assumed responsibility for the ramp at Redondo when that area was annexed in 1997. This area is classified and funded by the Redondo Zone revenues and expenditures. The Marina Master Plan adopted in 2001 recognized the need for extensive renovations at the Redondo facility with projects to increase capacity and make the launching ramp safer for boaters. Those projects were the first to be funded with the initial bond issue, along with grant funding from RCO.

- The parking lot was completely demolished and rebuilt with a new ramp entrance and queuing lane. A separate area was provided for single-vehicle parking. New landscaping and a new irrigation system were also installed.
- The storm drainage system was completely rebuilt and an oil-water separator was installed to bring the facility into compliance with the City's surface water codes.
- A new pay-station and the software for a parking management system were installed.
- New raised sidewalks were installed along with a concrete surfaced crosswalk area.
- A new 5 ft. wide by 180 ft. long heavy-duty timber boarding float string was installed on the south side of the ramp. It is held in place by six new galvanized steel pilings and a new concrete approach wedge.
- A 5 ft. wide by 72 ft. long extension was added to the existing timber boarding float string on the north side of the ramp.
- The existing concrete plank ramp extensions were removed and replaced by a concrete matt.

Future plans for the Redondo facility include upgrading the restrooms, rebuilding of the Fishing Pier and providing for more staffing by Marina personnel during the June through September boating season.

New boarding floats are to be constructed in late 2021-22 provided by a collaboration between RCO Grant funding and the City of Des Moines.



Figure 2-18. Redondo Boat Launch

Redondo Fishing Pier

The pier at Redondo serves as a popular gathering spot for experienced anglers as well as novices and families. Many "southsiders" have tall tales about their very first fishing pole being dipped into the waters at Redondo Beach, where salmon, sole and perch are known to inhabit the waters. Recreational crabbing is also prevalent here during crab season in the summer and autumn season. The Redondo Zones Fishing Pier and Public restroom are slated to be rebuilt in the near future.



Figure 2-19. Redondo Fishing Pier

Redondo Boardwalk



Figure 2-20. Redondo Board Walk

The Redondo boardwalk was reconstructed in 2017 after a severe weather storm. This board walk is used by the local residents and visitors regularly.

Redondo Parking Lot

Managed by the Des Moines Marina. This parking lot has 31 truck and trailer spaces and 32 single vehicle spaces. This will also be a part of the relocation of the Redondo Restroom replacement as depicted in the picture to the right.



Figure 2-21. Redondo Parking Lot

Existing Marina Operations & Services

Marina Operations

The Des Moines Marina is a full service marina. Even throughout the many difficulties related to the Covid-19 pandemic, Marina staff continued to offer superior customer service to visitors and long-term tenants. Our fuel dock offers gasoline, diesel, propane, marine engine products, potable water, and snacks. Staff maintain the entire Marina floor into the beach park to include the parking lots, restrooms and docks.

The Marina Office staff manages and maintains moorage agreements with permanent and temporary tenants. As well as maintains multiple lease agreements with several private businesses.

Existing Lease Agreements within Marina

- Care Free Boat Club
- Classic Yacht Sales
- CSR Marine
- Des Moines Yacht Club
- Ocean Quest Dive Charters
- Puget Sound Sailing Institute
- Quarterdeck Coffee, Beer & Wine Bar
- Ranger Tugs
- SR-3 Marine Sea Life Rescue and Rehabilitation

Redondo Operations

Marina staff have also managed and maintained the Redondo location since 1997. Staff perform daily cleaning of the restrooms, garbage cans, parking lot, boardwalk and launching areas.

Existing Lease Agreements at Redondo

- Salty's Coffee Shack at Redondo
- Olympic Outdoor Center (an occasional seasonal agreement)

3. FUTURE CONSIDERATIONS

The following section provides an overview of the boating trends currently affecting operations at the Des Moines Marina, as well as a demand forecast for in-water and upland facilities. The information was taken from the Des Moines Marina Master Plan Update Assessment, which was prepared by the Waggoner Group consultants. Along with this report, we will be working closely with our consultants Moffatt & Nichol to provide up to date statistical data on marina and boating trends. A complete copy of these reports are available online.

Trends in Recreational Boating

The boating trends summarized below are having a significant impact on operations at the Des Moines Marina, as well as other marinas throughout the region. Responding to these trends will play a major role in the future success of the Marina. This information will be provided throughout the upcoming work for the M & N dock replacement project by BST Associates.

Boat Size

The total number of registered boats in King and Pierce Counties grew from 87,834 in 2004 to (updated information will come from Scope of Work) boats in 2020 (includes boats of all lengths), for an annual growth rate of X.X percent. However, the trends in growth were substantially different for boats less than 30 feet in length compared to those over 30 feet, indicating that in general the average length of recreational boats is increasing. In 1987, 57 percent of all registered boats were less than 16 feet long. By 2010 that figure declined to 47 percent. Annual growth rates in King and Pierce Counties for boats of various lengths between 2004 and 2020 are summarized below.

Table 3-1. Annual Increases in Boat Length, 2004-2020

Length of Vessel	Annual Growth Rate	Total Boats 2004	Total Boats 2020
0' - 20'	X.X%	66,938	
21' - 30'	X.X%	14,483	
31 - 40'	X.X%	4,329	
41' - 50'	X.X%	1,599	
51' - 60'	X.X %	297	
Over 60'	X.X%	188	

Source: BST Associates, Washington State Department of Licensing

At the same time, the beam and height of recreational boats is also increasing, placing additional strain on marinas like Des Moines that were built 30+ years ago when boating vessels were smaller. These

fundamental changes in length, beam, and height have rendered some berths in older marinas unusable for the existing recreational fleet.

Boater Use Characteristics

Most of the major marinas on Puget Sound were built in the 1960's when salmon returns were strong and fishing was a popular recreational activity. Since that time the number of salmon returning to Puget Sound has fallen, leading to harvest restrictions, limited catch opportunities, and an overall decline in the popularity of fishing.

The marinas (and launch facilities) that catered to the recreational fishing fleet, such as the Des Moines Marina, were all designed with a large number of slips in the low 20 foot range since this was the typical size for recreational fishing boats. With the decline of fishing, the primary boating activity has shifted toward cruising, and with this shift the average boat has grown longer and wider. This fact, along with the declining number of saltwater-only fishing licenses, indicates that fishing boats are no longer a strong market for the Des Moines Marina.

Marina Facilities – What the Future Boater Wants

Boat owners are changing the way they use their boats, and they are demanding new services from marinas. The desire for safety, security, and a clean facility—the primary items desired by boaters—will increase in significance as the age of boat owners increases. Marinas must anticipate the needs of “active seniors” and provide assistance with the routine chores of boat ownership, such as dismounting and storing dinghies. Marinas must also accommodate vendors hired by boaters to perform maintenance, installations, and other services. Although transient moorage customers will have many of the same needs, they will also desire services such as transportation to shopping and having help with groceries and gear loaded onto their boats.

Trends in Marina Facilities

Many marinas in the Northwest are filling the void left by declining fishing opportunities by changing to meet the needs of the new “typical boater.” The most significant trends are the following:

- *Marinas are retrofitting existing slips to accommodate wider and longer boats.* The demand for moorage for small boats (less than 20 feet) will decrease. Small boat owners will store their boats out of the water. Dry sheds and boathouses may see increases in demand but will be impacted by increasing waterfront land values.
- *Marinas are upgrading utilities, especially electricity.* Some larger vessels will require 50 amp services or larger, but the norm will be 30 amp services, even for the smaller boats. The demand for “landline” telephone service is disappearing with the growing usage of cell phones. While the

demand for cable television has not materialized as expected, many marinas are installing wireless internet to serve their permanent tenants and guest moorage customers. The Marina was fortunate to receive a Boating Infrastructure Grant (BIG) allowing the Marina to start rebuilding all the Guest Moorage electrical service, including adding infrastructure for future charging stations for electric boats.

- *Marinas are expanding and retrofitting their facilities to meet the needs of the destination boater.* Fuel, clean and modern restrooms, a store for groceries and basic supplies, restaurants, and laundry facilities are common upgrades that many marinas are providing to their clients.

Impacts on the Community

Insert updated information from BST.

Demand Forecasts

This section will provide demand forecasts for both in-water and upland facilities at the Marina.

Insert updated information from BST.

Waterside Facilities

Permanent Moorage

The primary and secondary markets at the Des Moines Marina fall primarily in Pierce and King Counties. Growth is expected to be fastest for larger boats, as is the case with current trends.

Determining the optimal future slip mix for the Marina is an ongoing process that matches the demand for slips with the best design for the marina. Based on existing data the optimal slip mix would provide more 32 foot and larger slips, and fewer slips under 28 feet. Table 3-2 below summarizes the Waggoner Group's recommendations for the future slip mix at Des Moines Marina.

See table on following page.

Table 3-2. Wet Moorage Slip Mix Forecast

Slip Length	Existing Slips	Existing Ratio	Future Slips (Optimal)	Future Ratio
20'	37	5%	0	0%
24'	188	25%	0	15%
28'	257	35%	0	23%
30'	8	1%	69	
32'	71	10%	75	11%
36'	70	10%	113	17%
40'	65	10%	210	16%
50' and Over	33	4%	65	15%
Total	729	100%	532	100%

**This table is a recommendation only by the Waggoner Report. This will be further refined through the continued studies to be performed by BST Associates.*

As described by the Waggoner Group, a better mix of slip sizes and configurations is needed to meet the needs of current tenants, the waitlist potential tenants, and future customers. Customers should be offered a range of different moorage and storage options for their boating needs, ideally creating a marina facility with sufficient appeal and demand to command self-sustaining operations and future replacement reserves.

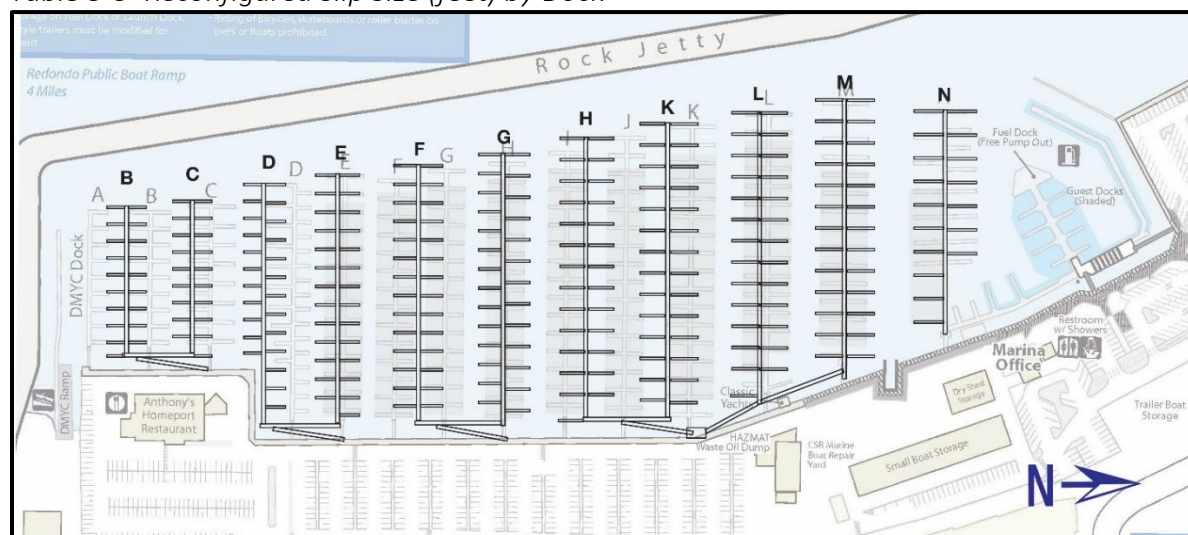
Doing this will create a destination with appeal that brings water and land-transport visitors to the Marina and to the Des Moines business district as well as address environmental pollution and contamination issues inherent with an aging in-water and foreshore facility.

Reconfiguring marina docks for larger slips and wider fairways in the same breakwater protected space requires eliminating two to three docks and their finger floats. The figure below shows a proposed reconfiguration with eleven docks replacing the existing fourteen docks. Slight adjustments in slip sizes and fairways may allow for twelve docks. This report and the associated revenue estimates are based upon a conservative eleven dock replacement configuration.

To summarize, boat ownership in the Marina's total market area has increased, with almost all of the growth in the secondary market area. This can be seen as a positive trend because a growing group of boat owners views the Des Moines Marina as an attractive moorage option. Further, the length distribution of the boats in the Marina's primary and secondary market areas is very similar to the length distribution of the slips in the Marina, illustrating that there is still a significant "small boat" component to the market area. In other words, most boats are currently less than 36 feet in length.

In the Marina staff's opinion, the updated market data and the demographics of the Marina's primary and secondary market areas still supports a moderate shift to larger slips. The 2021 Waggoner Group analysis of the Marina's vacancy data shows that the impact from vacancies in the smaller moorages has been managed through changes to the rate structure, such as seasonal and annual pricing. The point at which the moorage rates will start to drive the vacancy rate up in the smaller slips remains to be determined.

Table 3-3 Reconfigured Slip Size (feet) by Dock



North Side	30	30	34	34	38	42	42	46	46	50	50
Dock	B	C	D	E	F	G	H	K	L	M	N
South Side	30	30	30	34	38	38	42	42	46	46	50

**This table is a recommendation only by the Waggoner Report. This will be further refined through the continued studies to be performed by BST Associates.*

Guest Moorage

Among other factors, the forecast for guest moorage depends upon overall boating activity on Puget Sound, fishing opportunities for local boats, and the perceived attractiveness of the Des Moines Marina relative to competing facilities. As noted previously, the prospects for growth in fishing appear to be relatively limited and will likely limit Marina use by local boats. However, the increase in cruising is encouraging more marinas to become destination stopovers for non-local boats. Opportunities for attracting non-local boats appear favorable since Des Moines Marina is considered an attractive marina by boaters.

Although boating activity in Puget Sound is expected to remain steady, Des Moines will face strong competition from other area marinas, particularly those in Tacoma, Gig Harbor, and Seattle. To remain competitive, marina operators throughout the region are providing more guest services, supplies, dining, and other amenities. Fortunately, the Marina does have some advantages for attracting local and non-local boaters. These include:

- Fuel prices are favorable at Des Moines, which continues to attract boaters.
- Efforts to improve economic development in the downtown retail core along with the potential for additional marine retail on the Marina floor would help increase guest moorage.

The market opportunity for guest moorage has two distinct elements: the individual or family cruiser and organizations/clubs. Attracting these segments of the recreational boating industry presents the best opportunity for future revenue growth. Individual or family cruisers are looking for an available slip, fuel, restrooms with showers, laundry facilities, nearby supplies, restaurants, and activities. Clubs and organizations offer a second opportunity and tend to look for the same amenities the individual or family cruiser wants, but they also want a guaranteed group moorage. Occasionally they will need extra tables, chairs, or the use of a picnic/barbecue facility or dining hall. Even though they need more services, they are willing to make reservations well in advance. There are about 130 active boating organizations on Puget Sound.

Any marina that provides more than the basic level of services will get some individual or family cruise business. Getting the club business requires marketing and facility management. Clubs need to be contacted regularly so they know the marina wants their business. Marinas in Port Orchard, Oak Harbor, and Poulsbo are very successful at attracting and serving boating clubs, due largely to their successful marketing programs.

Landside Facilities

Dry Shed Storage

Utilization of the dry sheds is driven by small vessel use, rental rates, and the availability of launch facilities. At the moment the sheds are relatively occupied (4% vacancy rate including non-boat usage in 2019) even though the current rate structure is low compared to other area storage facilities.

The sheds have an expected life of 3 to 5 more years. It is therefore recommended that the City reevaluate the performance of the dry sheds within the next few years to determine if replacement of the dry storage as is, is optimal use for this location or modifying its use to better serve the boating and land use community.

Boat Yard

CSR Marine, the boat service yard, continues to be constrained by the size of the yard and launch pier they lease from the City. CSR has recently expanded their lease space, however they continue to request additional space due to the demand.

The boatbuilding and repair business is a target industry for economic development, generating approximately \$800 million in sales and 4,000 employees in King County and \$80 million in sales and 400 employees in Pierce County in 2015. Since CSR is currently the only boat yard between south Seattle and Tacoma, opportunities should be explored for expanding and/or reconfiguring the yard within the Des Moines Marina.



Figure 3-1. Des Moines Marina Site Plan (Long-Range Master Plan)

Passenger Only Ferry Service

The City of Des Moines has been working for years on the study and possibility of a Passenger Ferry Service option for the Marina. It was in the Fall of 2019 that the City engaged Diedrich RPM to generate a demand study to learn about community response to proposed fast ferry service from the Des Moines Marina to the downtown Seattle waterfront and from Des Moines to Downtown Tacoma and/or Point Ruston.

Concurrent to the demand study, the Puget Sound Regional Council delivered a regional study that looked at expanded passenger-only service around Puget Sound. Seattle to Tacoma ranked highest among the dozen routes studied, and Des Moines earned special mention as a desirable stop along the larger route—thanks in large part to our proximity to the airport and our large commuter population.

Here in Des Moines, we are among the best suited of all these communities for our own fast ferry service. Located almost equidistant between Seattle and Tacoma, the Des Moines marina is the only flat parcel of land between those two cities on the waterfront.

A passenger ferry service would provides a welcome boon to our local retail business community. Coffee shops and restaurants will cater to passengers waiting to board the vessels or coming off a boat from Seattle and Tacoma. The short walk to our central downtown means opportunities for those businesses as well, especially when the Marina Steps have been constructed!



4. MASTER PLAN

Since completion of the previous Master Plan in 2007 economic conditions in the Des Moines and Puget Sound boating communities have changed, creating new opportunities for in-water and upland facilities at the Marina. In response to market projections, a series of recommendations have been developed as a means for the Marina to capitalize on these new opportunities. The sections that follow describe the Master Plan recommendations for the Marina's individual elements. Cost estimates for all recommended actions can be found in Chapter 5.

In-Water Recommendations

Bulkhead

The bulkhead is an essential part of the Marina infrastructure. Although the bulkhead's condition is moderate [Reid Middleton, Inc. Feb 2000 & 2020], its rate of deterioration is a point of concern and it requires replacement.

Recommendation

The Master Plan recommends that the existing bulkhead be replaced in six phases. The bulkhead will be replaced in its current alignment (see Figure 4-1).

- **Phase I (Complete):** Replace approximately 800 feet of the bulkhead from in front of M dock to the north end of where the old public launch structure was. Work included providing new ADA gangway access to the guest moorage basin. Work included removal of some dry sheds and reconfiguration of bulkhead for new travel lift pier. This phase was completed in 2010.
- **Phase II (Under Construction):** Replace approximately 420 linear feet of seawall along the north end of the Marina. Replace approximately 350 linear feet of wall in front of Guest Moorage side-tie dock around the west wing wall towards the north end, replace the timber inner breakwater structure, and remove the tide grid. This phase was originally set up as two phases but likely to be completed in 2021-23 as one phase.
- **Phase III:** Replace approximately 625 feet of bulkhead from L to G Dock.
- **Phase IV:** Replace approximately 270 linear feet of wall between Docks G thru D.
- **Phase V:** Replace approximately 560 linear feet of wall fronting docks D thru A.



Figure 4-1. Bulkhead Replacement Phasing

Permanent Moorage

The future of the fourteen floating docks is an important issue since in 2020 they generated \$3.1 million. The costs involved in their replacement will be a substantial investment. It appears that the floating docks can be kept in serviceable condition until 2025 or beyond, but with the recent Reid Middleton Condition report the anticipated future expenses and impacts are so significant that a discussion of the long-range replacement alternatives should be part of this process.

For their age, the floating docks and roof structures are in poor to fair condition. The major problems are loss of floatation in some areas and loss of structural integrity in a number of the guide pilings. Also, the electrical distribution system on the larger docks is not adequate to supply the service demand of newer boats.

Although current environmental regulations strongly discourage the construction of new covered moorage on Puget Sound, existing covered moorage can be maintained, reconstructed, and relocated within the Marina. The primary drawbacks to rebuilding covered moorage involve permitting, mitigation and cost. In order to minimize shadow impacts upon the water, environmental regulations will be required.

The Municipal Facilities Committee, consultants, and staff continue to examine several replacement alternatives for the permanent moorage docks to determine the potential slip mix and the construction and operating costs. Another constraint was the amount of debt that can be carried by the Marina. The Master Plan recommends that total debt be kept below \$10 million at any given time.

Reconfigured Marina Revenue Projections

Breakwater protected mooring space is a precious commodity. The Marina has a fixed amount of in-water boat moorage space protected by the fixed and permanent breakwater. One of the key elements in redeveloping the Marina with larger slips is ensuring that the Marina maintains or increases revenue and boat storage capacity.

Calculations based upon Marina in-water redesign guidelines and the configuration noted above show that a rebuilt Marina consisting of fewer small slips, and additional larger slips, along with more dry land storage of boats can produce more revenue and storage capacity for nearly as many boats. The following table shows recent past revenue and capacities, along with projected revenue and capacities when rebuilt. Revenue projections are based upon existing 2020 rates for in-water storage and today's market rates for dry-storage.

Table 4.1: Marina Moorage & Storage Revenue and Capacity

	2018	2019	2020	Rebuild Configuration
In-Water Permanent Moorage	\$2.221M	\$2.291M	\$3.052M	\$3.089M
Number of In-Water Slips	730	730	730	532
Covered/Open Percentage	63%/37%	63%/37%	63%/37%	40%/60%
Dry Storage	\$173K	\$183K	\$225K	\$1.205M
Number of Dry Storage Spaces	72	72	72	240
Guest Moorage Slips & Side-tie	\$130K	\$142K	\$144K	\$146K
Number of Guest Slips & Side-tie	38	38	38	38
Total Slips & Storage Spaces	840	840	840	810
Total Revenue	\$2.524M	\$2.616M	\$3.421M	\$4.440M

Covered vs. Open Moorage

As stated in the Waggoner Phase 2 report, deciding on the amount of covered moorage vs uncovered or open moorage will affect the cost of construction as well as returned revenue and ongoing maintenance expenses. The City will need to make a determination regarding what percentage of moorage slips in the new Marina configuration will be covered vs open. There are trade-offs to consider for both covered and open moorage slips when making this determination. Given today's tight governance and control of construction on or near water, there may not be an option for covered moorage.

Pros and Cons of Covered Moorage Slips.

Pros

- It may be possible to receive mitigation credits for the use of light-penetrating materials.
- Additionally, the removal of some existing covered moorage might earn mitigation credits towards the installation of new covered areas.
- Covered moorage is highly desirable by many boaters who want to protect the fit and finish of their boat from harsh weather conditions.
- Covered moorage can save the boater additional maintenance costs in the long-run, and many boaters are willing to pay the higher rate for covered moorage.
- Marinas charge more for covered moorage than open moorage, providing needed revenue for ongoing maintenance and replacement reserves.



Figure 4-2. Covered Moorage on J-Dock



Figure 4-3. Light-Penetrating Covered

Cons

- Construction costs are greater for covered moorage due to additional materials and labor and the need for additional floatation on the docks to support the overhead structure.
- New environmental concerns for fish may require overhead light-penetrating panels in order to meet permitting requirements.
- Permitting for covered moorage is an open question at this time.
- More importantly, covered moorage slips limit the type of boats that can be accommodated due to air-draft limitations.
- Sailboats with masts, and large power boats with tall superstructures, are not able to fit under a covered moorage facility.

- Covered moorage thus limits the marina's tenants in those spaces to boaters with smaller and medium-sized power vessels.

Covered moorage slips are normally configured with finger-floats on both sides of the slip, referred to as double-finger slips. The additional or second finger float is needed to provide the floatation support for the roof/covering. Double-finger slips cannot accommodate wide-beam boats, such as power and sail catamarans.

Pros and Cons of Open Moorage Slips.

Pros

- Open moorage slips are normally more economical to construct and install.
- The advantage is that open slips can accommodate a variety of different vessels, including sailboats, thus drawing in more tenants.
- Open slips are normally single-finger slips with no finger-float between two neighboring slips, allowing wide-beam boats to share two adjoining slips.

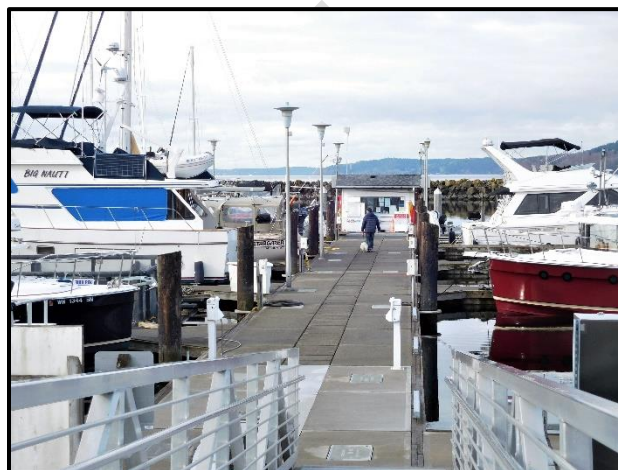


Figure 4-4. Open Moorage

Cons

- Dock decking material in open slips tend to wear and age sooner than docks that are covered. A larger maintenance expense for the boat owner.

Table 4-2. Comparison of Potential Type and Number of Slips

Slip Size (feet)	Covered Slips			Uncovered Slips		
	Current	Proposed	Difference	Current	Proposed	Difference
20	29	0	-29	8	0	-13
24	141	0	-141	47	0	-48
28	159	0	-159	98	0	-98
30	8	30	+22	0	39	+39
32	52	20	-2	19	51	+32
36	40	40	0	30	73	+43
40	26	50	+14	39	160	+129
50 and over	11	29	+18	22	40	+18
	466	169	-277	263	363	+102

**This table is a recommendation only by the Waggoner Report. This will be further refined through the continued studies to be performed by BST Associates.*

Recommendations

The Marina's current configuration has 63% of the permanent moorage slips covered and 37% are open. The consultants have recommended targeting a rebuild configuration with 40% of the slips covered and 60% open. This targeted ratio retains a meaningful portion of covered moorage while providing a better balance between covered and open. There is still no assurance that any covered moorage will be allowed by permitting agents and mitigation.

The reconfigured Marina should have fewer small slips and more medium to large-size slips. Slip sizes between 28 feet and 50 feet, with a few end-tie spaces for wider and longer boats up to 64 feet in length.

There should be a proportional and balanced distribution of covered vs open slips in each of the six slip sizes with a target of about 25% to 50% of the slips covered. The amount of covered moorage will be largely governed and controlled by state and federal permitting requirements. Achieving these percentages may be very challenging. Rental rates for covered slips will be quite a bit more expensive due to the approximately 80% to 100% higher cost of construction. Air draft on covered slips should also be increased from the current configuration to accommodate larger vessels.

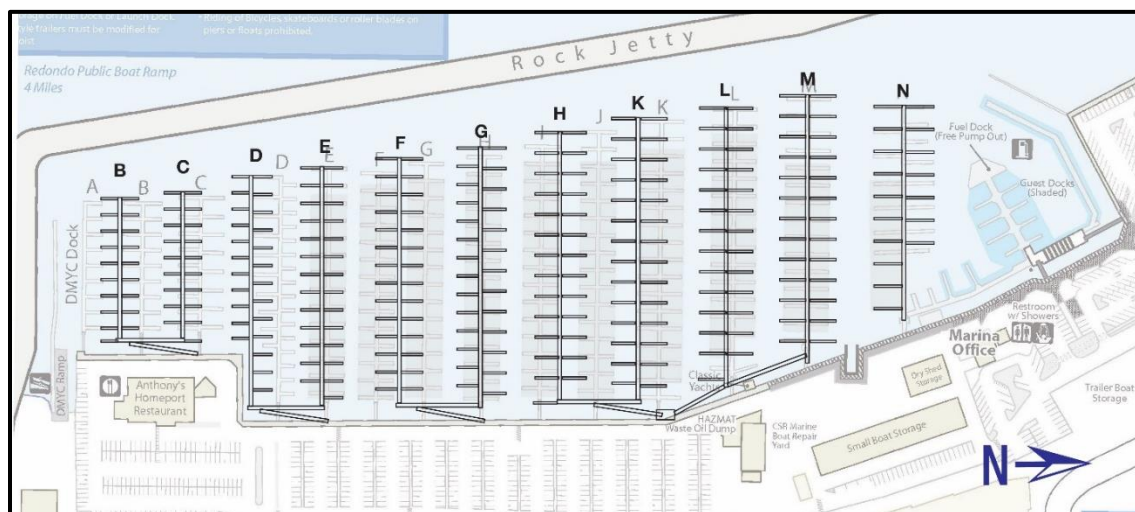
Access ramps that are at a parallel or shallow angle with shoreline will provide access to more than one dock/float, thereby reducing the number of ramps, minimizing low-tide ramp incline with longer ramps, and maximizing the number of slips on each dock. ADA access where practical.

Larger fairways should also be included in the planning. Having dock spacing will provide adequate and industry standard fairways for boats to safely and conveniently maneuver in and out of moorage slips. A minimum fairway width that is 1.5 times the length of the largest slip on either side of the fairway would be required. Fairway widths in the current configuration average 1.3 times the largest slip, with several barely more than 1.0 times. Due to boat overhang allowances up to 10%, the fairway can be even smaller/narrower than 1.0 times the slip size.

To move the docks, the existing creosote treated piling would be removed and new steel piling would be installed to keep the floating docks in their new locations. Also, the ramps would need to be moved or combined with "head docks" to provide access to the docks in their new locations.

To get to the final configuration called for in the Master Plan, all of E, F, and possibly G Dock would have to be removed to allow D Dock to be moved to the north (D Dock would be rebuilt with 40 to 50 foot open slips) and install a new dock in-between D and H allowing for more 40 to 50ft slips (see Figure 4-5 on next page).

Figure 4-5. Permanent Moorage Reconfiguration Alternative



Guest Moorage Facility

The 2007 Master Plan explored options for expanding the guest moorage program by converting existing uplands at the north end of the Marina into new in-water moorage space. Since that time guest moorage activity has declined drastically, falling from a high of 9,367 boat nights in 2001 to 5,789 boat nights in 2005 as reported in the 2007 Master Plan. We have seen these numbers drop even further by an additional 42 percent to approximately 3,414 boat nights in 2019. This is over a 60 percent decline in boat nights since 2001. Expansion options therefore require additional analysis to validate the economic benefits.

Boating trends in 2007 indicated that there would be increasing demand among boaters for larger and more comfortable guest moorage facilities, we have seen that trend come to fruition thru 2019. By adjusting internal operations and by expanding marketing efforts, the Marina found that it could attract more families and boating clubs to the guest moorage. To better take advantage of boating trends, the guest moorage area could be expanded to increase its capacity, convenience, and desirability.

Partial funding for guest moorage improvements may be available from the Interagency Committee for Outdoor Recreation (IAC) Boating Facilities Program. In addition, the expanded guest moorage project may be eligible for funds from the U.S. Department of Fish and Wildlife's Boating Infrastructure Grant Program. Marina staff would aggressively pursue all grant opportunities available as a way to effectively leverage Marina funds.

In addition to the annual revenues offered by an expanded guest moorage, popular boating destinations generate positive financial impacts for the community as a whole. Local shops, restaurants, service stations, and other businesses benefit from being close to a busy marina. Des Moines residents benefit from having local businesses that are successful.

Recommendations

Since completion of the 2007 Master Plan the guest moorage program has experienced a significant decrease in utilization and revenue due to the continued decline in recreational salmon fishing in the Puget Sound. Improving future utilization of the guest moorage will require the Marina to more aggressively target organizations/clubs, individual or family cruisers, and other similar groups, all of which have the potential to keep the guest moorage viable. Expansion of guest moorage into the north lot is no longer a viable option. As demand for guest moorage increases with the redevelopment of the Marina uplands, any expansion of guest moorage would need to be on N dock

Landside Facility Recommendations

Launching Facilities

There are currently two boat launching facilities maintained by the Marina, including the dry shed sling launcher and the boat yard travel lift launch. The travel lift launch was replaced in 2010 however the dry shed sling launcher is nearing the end of its useful life and requires significant repair or replacement.

Recommendations

The Master Plan recommends the following actions concerning launch facilities at the Marina:

- **Dry Shed Sling Launcher.** The dry shed sling launcher is greatly in need of repairs and has failed inspections consistently over the last few years. The load limit has been dropped multiple times from 5 tons to 1.5 tons. Our recommendation is to replace it completely with a structure to meet the needs of the APB.
- **Travel Lift Sling Launcher.** No recommendations at this time.

Harbormaster Building

The Harbormaster Building currently houses the Harbormaster offices, the Marina Maintenance Shop, and the Beach Park Event Center office. Given the building's location on the central waterfront it is an extremely valuable asset for the Marina.

Recommendation

The Master Plan recommends relocation of the Marina Office and Maintenance Shop to an alternate location, utilizing the Harbormaster offices for new development, and relocating public restroom facilities to the first floor. Laundry / shower facilities could also be incorporated.

Boat Yard

CSR Marine is constrained by the size of their boat yard and travel lift pier. They expanded their operation into the south lot to accommodate larger boats.

Recommendation

The Master Plan does not have any recommendations at this time for the boat yard as the current building and added lease space has already been adopted. As well as a 25 ton travel lift that was purchased in 2009. However, as plans for the APB continue to develop, the location of the boat yard could be adjusted to make more efficient use of the limited space on the Marina floor.

Marina Parking

The number of parking spaces within the Marina generally accommodates present demand. Existing on-site parking includes the following:

North Parking Lot	173	single vehicle spaces
Central Parking Lot	57	single vehicle spaces
Office Parking Lot	7	single vehicle spaces
Dry Shed – East Side	24	single vehicle spaces
South of Boat Yard & M Dock	307	single vehicle spaces
	22	vehicle-trailer spaces
Total Existing Parking	590	spaces

Recommendation

The Master Plan does not have any recommendations for parking changes at this time.

Restrooms

The tenant restroom is outdated and needs to be replaced. When making decisions about travel itineraries and moorage, boaters place high importance upon marina amenities such as restrooms and laundry facilities.

Recommendations

There are plans to demolish and rebuild the Waterfront Zone north restroom as part of replacement of the north parking lot seawall.

Additionally, there are preliminary plans to replace the south lot private tenant restrooms located in the Marina Zone that include a unisex restroom for use by the general public as well as restroom, shower, and laundry facilities reserved for Marina tenants. These plans will be refined as construction nears.

Renovation of the existing restrooms adjacent to the Harbormaster building is not an economically viable alternative due to the facility's age and condition.



PERSPECTIVE
SCALE: 1/4" = 1'-0"



ELEVATION
SCALE: 1/4" = 1'-0"



Figure 4-6. Proposed Site Plan for North Lot Restroom



Figure 4-7. Proposed Site Plan for Marina Steps

Development Site: Marina Steps

A critical piece to the City’s vision of the Marina as a vibrant, mixed-use area. As part of this vision, the City is committed to investing in significant public space and connections to Downtown Des Moines, including a dramatic series of steps (“Marina Steps”) adjacent to the development parcel.

Allowed uses include office, hotel, retail/ restaurants, and maker spaces.

The Marina Steps will be located at the foot of 223rd Street, which will be turned into an urban creek with bio swales, still providing vehicular access but also enhancing water quality from watershed that transports a significant amount of runoff from Sea-Tac Airport.

Recommendation

This development opportunity is currently at the early stages of planning. A Request for Proposal was submitted in early August 2021.

Adaptive Purpose Building

Figure 4-8. Adaptive Purpose Building Renderings (for Example Purposes only).



Commercial Use

The approximately 1.5 acres of Marina grounds located between the existing Marina office and the CSR Marine boatyard is an important element of the Marina. This area should provide a key connection between the Marina tenant centric area to the south and the guest, visitor centric area to the north. This 1.5-acre property fronts onto the bulkhead seawall and backs to an embankment, and currently houses shed storage buildings and the associated access driveways.

Recommendation

A better use of this key location on the Marina grounds would be a new building designed to accommodate a number of known and yet-to-be-determined purposes, defined in this report as the Adaptive Purpose Building (APB). The building would extend parallel along the embankment and to a large grassy pedestrian area and promenade. Design of the building is envisioned to have a third-level story against the embankment, stepping down to a second level, and finally stepping down to a first floor that opens to the pedestrian area.

The single-story level fronting on the grassy pedestrian area could include space for specialty retail shops, food service, a convenience store, and yacht brokerage. This space is also a logical venue for a Farmers Market that could spill out into the pedestrian gathering outdoor spaces. The building could also provide space for group gatherings and special events. The second-story level could house light manufacturing businesses, and offices, while the three-story area could house a boat stacked storage facility.

The entire building would be designed for flexible and adaptive future use to generate ongoing revenue for the Marina. This Adaptive Purpose Building will provide better access and connection between the north and south ends of the Marina grounds.

- This building is titled *Adaptive* to underscore the flexibility of the structure to meet future needs. It is likely that the building's functional uses will change over time.
- Design and construction of the building, with large open spaces, will allow for different usage and configurations.
- Possible initial uses and future tenants for the building may include:
 - Stacked boat and boat trailer storage; marina workshop
 - Marina office, restrooms, showers, and laundry
 - Farmers markets, craft and art fairs
 - Special events such as auto shows, boat parts swap meets
 - Offices for boat insurance, boat brokers, boat detailing
 - Restaurant(s), food courts, retail spaces, specialty shops
- The Adaptive building should be marketplace driven with spaces that can be configured for tenants as needed.
- A tenanted Adaptive building would be a potential source of taxable sales revenue.

Marine Retail

Opportunities exist to open a small scale marine retail store to support Marina's boating community within the Adaptive Purpose Building.

Recommendation

Locating a marine retail business along the Marina waterfront would be a positive addition. The project includes parking lot improvements and landscaping.

Financing options for the new marine retail location require additional analysis to identify the best option for the City.

Marina Maintenance Shops

Marina maintenance shops are currently located on the ground floor of the Harbormaster building. This function does not need to be located on the central waterfront and is a poor use of this space.

Recommendation

The Master Plan recommends constructing a new Marina maintenance shop within the Adaptive Purpose Building. Relocation of the maintenance function will allow a more appropriate use to occupy the first floor of the Harbormaster building.

Dry Stack Storage

The Marina needs to reconfigure in-water moorage with fewer small slips and additional large slips. To accommodate the smaller boats, a dry stack storage building for 20- to 30-foot boats could be constructed or be housed in a portion of the Adaptive Purpose Building. An increasingly popular storage option for boats up to 34 feet in length has been shown to be dry stacked storage. Boats are stored in enclosed and heated buildings on racks stacked 2 or 3 boats high. The addition of a dry stacked storage facility at Des Moines will provide boat storage options for smaller boats that otherwise would occupy an in-water slip. Providing dry stacked storage spaces would allow smaller boats an option to the Marina's larger in-water moorage slips and provide a boat storage option still within the greater marina area.

Recommendation

The dry stack boat storage building could be located at the east side of the Marina grounds backed up to the hillside. The building code currently restricts the height to approximately 35 feet, which would allow a structure that accommodates racks for 2 to 3 boats high. A 145-foot-wide x 331-foot-long building, with two stacks and a central aisle, would allow for storage of about 240 boats from 20 to 30 feet.

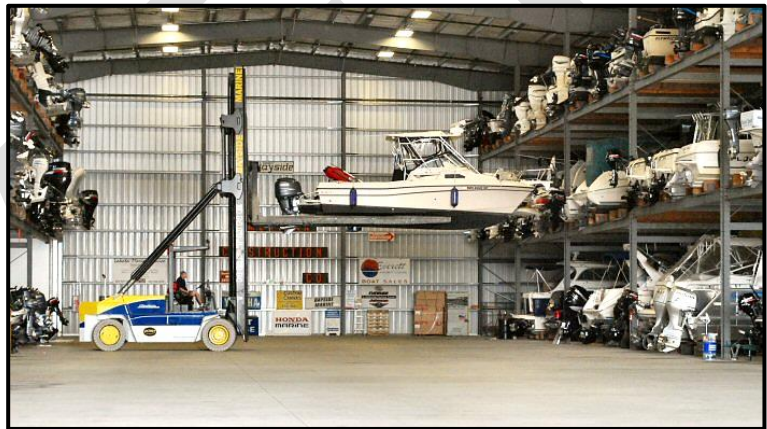


Figure 4-9. Dry Stacked Storage Example

Given the desirable option and interest in an Adaptive Purpose Building, this stacked-storage unit could be incorporated into this building space. A separate, adjacent storage building may be another viable option.

This provides an alternative to the single-story sheds and in-water storage of smaller boats and allows the Marina to reduce the number of smaller in-water slips. With dry stacked storage, customers call ahead to the Marina, and their boat is removed from the storage building by forklift and lowered to the water and placed at a staging dock for the customer's use when they arrive. Dry storage services add value by including such services as post-use wash-down, engine flush, and waste pump-out. The storage building(s) can be heated so boats do not need to be winterized. The new storage building revenue generating potential is about \$1.2 million per year and would replace the \$250,000 annual revenue from shed storage buildings that currently house small boats. A second dry stack storage building, phased in at a later point along the east side of the Marina grounds, could accommodate several hundred additional boats and would provide additional storage space to replace the reduced number of in-water small slips in the redeveloped Marina. If implemented, it is recommended that the initial building hold up to 200-248 boats. This project would have a budget of about \$4.1 million.

Dry Storage Building Estimated Budget

Base building construction	\$2,900K
Project Planning & Permits	225K
Water, Electrical, and Fire	300K
Boat Lift (1)	400K
Miscellaneous	250K
Total	\$4,075K

Thousands of dollars

Comparable Dry Stack Rental Rates

Foss Landing, Tacoma	\$340.20
Bayside, Everett	\$425.00
Twin Bridges, Anacortes	\$356.69
Rate per month, for a 24 ft. boat	

Redondo Zone Recommendations

As previously described in the Existing Conditions chapter (2), the Redondo facilities consist of a parking lot, launch ramp, boardwalk and one public restroom facility. At this time the only recommendation is for the Restroom Facility and Parking lot.

Restroom Facility

There is one restroom located in the Redondo Zone. This restroom is over 30 year old structure currently exceeding its expected services of life. It is used by 300+ users per hour on the waterfront during peak summer use. Users include but are not limited to: recreational fishing and crabbing users, diving groups, boat launch users, and the general public.



Figure 4-10. Proposed Site Plan for Redondo Restrooms.

Recommendation

These restrooms are currently undergoing the process of update by the City therefore at this time the Marina has no further recommendations.

Parking Lot

The Redondo parking lot is a paid lot that allows for single vehicle and truck/trailer combinations to park during the day time.

Recommendation

The recommendation for the parking lot will coincide with the Redondo restroom update.

5. DESIGN GUIDELINES

(THIS SECTION WILL CONTINUE TO BE UPDATED AS OUR CONSULTANTS MOVE FORWARD WITH THEIR WORK. All design guidelines are subject to change.)



Figure 5-1. Marina Office Building July 2021

Visual Image Waterfront Theme

The City of Des Moines has expressed a desire to develop a design theme connecting both the planned Marina improvements and the downtown business areas. The idea of creating a unified, thematic identity for the total community is a potentially valuable opportunity that is promoted by this plan.

There is limited original architectural character at the Marina to form the basis upon which a design theme may be developed. Because of this lack of historic background, it is recommended that a contemporary interpretation of traditional waterfront building forms and nautical themes be used to guide new construction and for the renovation of existing structures. The existing Marina office building is a good example of the desired architectural theme.

Building Siting (General)

All buildings are to be developed in accordance with the use, size, and height requirements as created by the City of Des Moines' shoreline master program zoning regulations and similar controls. These guidelines are intended to support and augment established codes and building standards required by the City.

Commercial and recreational buildings should be sited to promote public accessibility and to enhance their view orientation. Where practical, new buildings, structures, and landscaping should be sited and designed in a manner that minimizes view impacts on properties to the east. These buildings should also be set back from the shore a sufficient distance to allow the development of a landscaped, publicly accessible pathway, pedestrian promenade, or boardwalk at the water's edge.

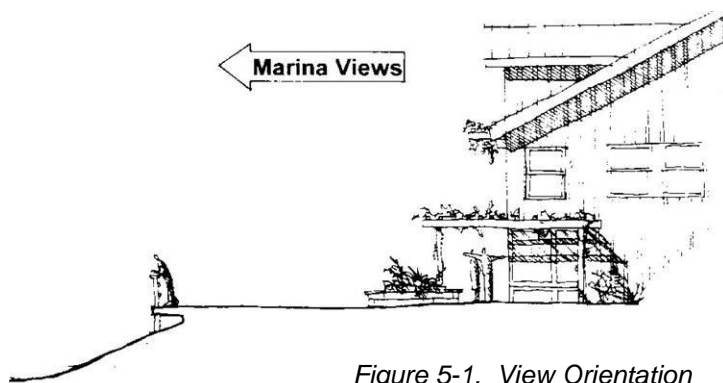


Figure 5-1. View Orientation

Design Guidelines

The purpose of these design guidelines is to indicate the type and character of design solutions desired at the Marina. Their function is to suggest design solutions that promote a consistent design image for the Marina. Consistent use of selected design features for Marina components—such as buildings, pathways, lighting, and landscaping—will establish a positive and recognizable visual image for the Marina. This plan's major guideline recommendations are outlined as follows:

Building Elements

1. Roofs (Derived from traditional waterfront building prototypes)

Preferred Forms. The preferred roof forms for the various building types are as follows:

- *Commercial.* Gabled roof with a metal standing seam or composition shingle (heavy-weight Class A) roof. The recommended minimum slope is 3 in 12. Flat roofs are recommended only where rooftop decks are provided.
- *Recreational.* (1) Gabled metal roof with standing seam, or (2) hipped metal roof with standing seam, as approved for special structures. The recommended minimum slope is 3 in 12. Flat roofs are recommended only where rooftop decks are provided.
- *Discouraged Roof Forms.* Low-slope metal, built-up, and mansard roofs are discouraged. Flat roofs are recommended only where rooftop decks are provided.

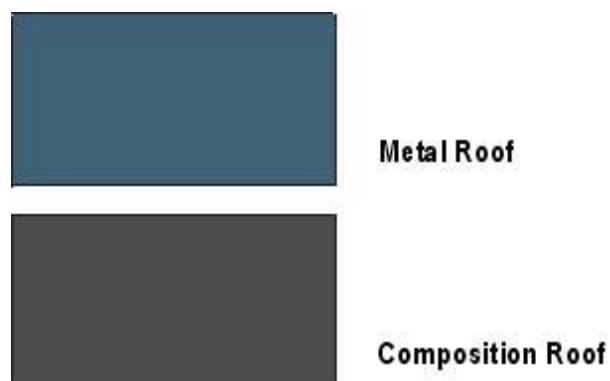


Figure 5-3. Roof Color Examples

- *Color.* The preferred color for metal roofs is blue (similar to Tahoe Blue [ASC Pacific]); composition roofs, dark gray (similar to Charcoal or Granite Gray [GAF Materials Corp.]).

2. Encouraged Roof Features

- *Dormers.* Gabled dormers are encouraged to lend variety to the dominant roof type and to provide potentially usable space in the buildings' attic spaces.
- *Decks.* Rooftop decks are encouraged where functional and inviting public open space can be provided. Rooftop decks should be no larger than necessary and may occupy only a portion of the building footprint. In such cases, the remaining roof area should be gabled.
- *Vents and Louvers.* The preferred vents and louvers are as follows:
 - Gabled roof ridge vents.
 - Turbine louvers on commercial buildings.
 - Gabled end vents at the point of the gable.
- *Roof Overhangs.* Eave overhangs are recommended for all roofs on recreational and commercial structures. The recommended minimum overhang is 6 inches, although a larger overhang would be appropriate for commercial structures and where weather protection is desired.

3. Exterior Walls and Enclosures

- *Commercial and Recreational.*
The recommended materials for commercial and recreational buildings are the following:
 - *Painted Wood.* Bevel siding or board-and-batten pattern.
 - *Prefinished Metal Siding.* Bevel siding or board-and-batten pattern.
- *Other.* Concrete unit masonry with a split face or ground-face block are acceptable for smaller support buildings, such as pump stations and public restrooms, with floor areas of less than 1,500 square feet, and for the base of support structures, such as storage sheds and dry boat storage facilities.

4. Building Color

- *Commercial.* For commercial structures, the recommended color scheme is medium gray with white trim.
- *Recreational.* For recreational structures, the following color schemes are recommended: (1) medium gray with white trim, or (2) natural stain on wood with dark gray and/or white trim.

5. Windows and Window Openings

- *Commercial and Recreational.* For commercial and recreational buildings, vinyl or vinyl-clad wood windows are recommended, either double-hinged, casement, or awning style. Projected and bay windows of similar construction type are also acceptable options.

Site Elements

1. Walkways

- *Sidewalks at Street Edge.* Broom-finished concrete with a standard 3'-0" screed pattern is the preferred option.
- *Interpretative Pathways and Informal Walkways.* An asphalt walkway is acceptable for these areas.
- *Special Paving Areas, Waterfront Pedestrian Promenade, Accent Paving, and Plazas.* For these special use areas, interlocking modular concrete pavers in a light brick red color are recommended.

2. Lighting

- *Street Lights.* A metal light standard with a color motif similar to that currently used in downtown Des Moines is the preferred option. Poles and fixtures similar to other city street fixtures in the downtown will reduce maintenance and operating costs and maintain visual consistency. Color: Deep blue. Light type: City standard.
- *Pathway Lighting.* For boardwalks, pedestrian promenades, and shoreline edge walkways, a simple single-globe fixture with a nautical thematic character is recommended. Color: Deep navy blue. Light type: Metal halide.
- *Informal Pathway Lighting.* The recommendation is for metal bollard fixtures with integral lighting. Special attention should be given to ensuring vandal resistance in the bollard's design. Integral post-mounted lights are also options for pier and boardwalk areas. Color: Deep navy blue.

3. Site Furniture and Fixtures

- *Clearance Bollards.* For clearance bollards and special separation or vehicular delineation bollards, use concrete or concrete-filled steel pipe, either embedded in concrete or with a bolt-down base. Color: Deep navy blue or clearance yellow, depending on use or location.
- *Benches and Sitting Areas.* Heavy-duty wood benches with concrete or heavy metal supports to promote durability are recommended. New designs using recycled plastic (HDPE) or other similar simulated wood product for seating material are also recommended. Simplicity of design and durability are desired characteristics.
- *Trash Receptacles and Support Features.* Use trash receptacles similar to the standard selected by the City of Des Moines for use in the park and downtown areas.
- *Railings and Handrails.* Although metal and pipe handrails are considered prototypical railing types for marine- and ship-related settings, the original handrails at Des Moines also included some wood designs. The recommended handrail type for such features as brow ramps, bridges, and building stairs is a galvanized metal pipe handrail. Metal handrails with metal mesh or closely spaced (about four-inch) vertically-oriented infill panels are recommended for boardwalks, walkways, and piers.

- Railings should create a safe environment while also maintaining a high level of visual transparency. Railings should not unnecessarily block views of boats and the water.

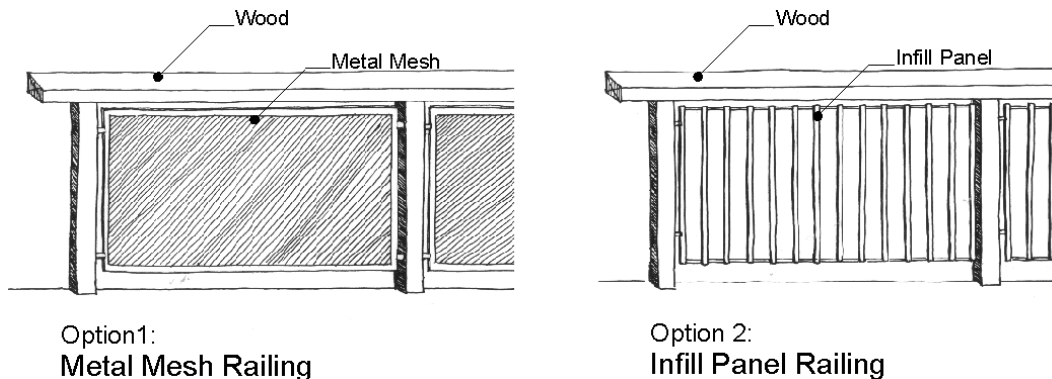


Figure 6-4. Examples of Panels with Wood Railing

4. Signage

- *Private Business Signs.* These guidelines do not define a specific signing program for the Marina. When private business signs are installed, they should reflect the Marina's waterfront theme in style and size. These signs should also be designed to limit any impact or glare intrusion on views from the adjacent residential areas. In terms of specific design requirements for size, placement, or other regulatory requirements, all private business signs shall be consistent with City of Des Moines policies.
- *Informational Signs.* The Marina Master Plan does not define an information signing program for the Marina. The public informational signing at the Marina should be part of a uniform signing program that includes the Marina, downtown Des Moines, and the adjacent park areas. The City of Des Moines should develop a palette of sign types, including colors, size, placement, and logo image, that will guide the installation of public informational signs for all three areas.

5. Landscape Plantings

The Marina Plant List lists specific recommendations for landscape materials at the Marina. This plan's major planting concepts include:

- *Vehicular Streets.*
 - *Street Trees.* Landscape street edges and median areas with deciduous trees with a round, branching pattern to promote visual appeal and allow views under the tree canopy.
 - *Ground Cover Plantings.* Use low-maintenance ground covers at street edges and medians. (Lawns are not recommended.)
- *Parking Areas.* Trees and ground cover plantings similar to those used for the vehicular streets are recommended. Care should be taken to select small to medium-sized trees for use throughout the Marina to avoid unnecessary view blockage.

- *Pedestrian Pathway at the Water's Edge.* Landscaping in these areas should be primarily shrubs, groundcovers, and flowers. Planting areas may include planting beds at grade and those in pots, planters, and hanging baskets.

Gateway Entry

The Marina entry at 227th Street is the area's main access point and most identifiable gateway. The thematic character established by this gateway will define the Marina's public image.

This plan recommends the future development of a nautical feature at the Marina's 227th Street entrance that would incorporate South Marina Park and provide the Marina's gateway theme. A potential gateway feature could incorporate traditional lighthouse components to provide both day and night visibility. A version of this feature could be repeated as a logo element at all Marina entrances to help create a sense of identity for the Marina. A potential gateway feature design illustrating this concept is shown below.

Landscaping

The predominant visual images within the Marina are large expanses of asphalt and dissimilar building types and styles. Upland areas not protected by the jetty from wave action are subjected to saltwater spray and a limited number of plant species can thrive in the environment.

Master Plan Recommendations

Appropriate landscaping can improve the visual appearance of the Marina, identify and delineate pedestrian areas, enhance views, and minimize the visual impact of the automobile. The Master Plan calls for additional landscaped islands within the parking areas, along the pedestrian paths, and along the east property line. All landscaping recommendations reflect the intent to beautify the Marina without blocking views. A list of recommended plants appropriate for use within the Marina is included in Appendix C.





6. SCHEDULE AND FINANCING (UPDATE)




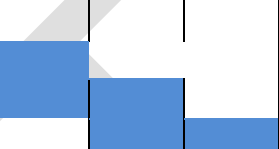
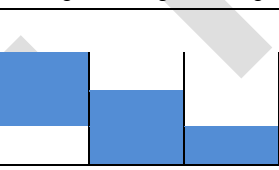
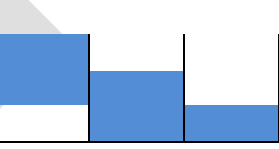
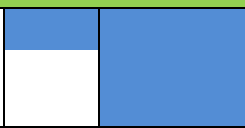


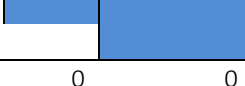
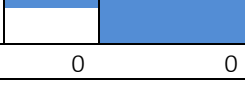
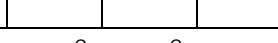
The primary goal of this planning process is to focus on the core business activities of the Marina and develop strategies that will maintain Marina facilities and keep services in high demand. This Master Plan contains business strategies that require both capital and service improvements.

THIS SECTION WILL CONTINUE TO BE UPDATED AS OUR CONSULTANTS MOVE FORWARD WITH THEIR WORK.

Proposed MIP Work Schedule

The following project list reflects the tiered priority of capital projects. This list is subject to change.

City of Des Moines, WA		From:	2022	To:	
Proposed Priority No.	Project Identification	Local Agency Expenditure Schedule (Year)			
		2022	2023	2024	2025-2027
Tier 1 Projects					
1	Tenant Restrooms (Marina) Replace existing tenant restroom. Construct new building with four uni-sex restrooms/showers. Facility will also include a tenant portta-potty dump station and a laundry facility.				
		0	0	0	0
2	Dock Replacement (N) (Marina) Replace N dock with 50' slips. Provide covered moorage as permitted, and upgrade waterside utilities. Coordinate with E, F, and G Dock removals and re-adjust remaining dock spacing for wider fairways.				
		0	0	0	0
3	Dock Replacement (M) (Marina) Replace M dock with 50' slips. Provide covered moorage as permitted, and upgrade waterside utilities. Coordinate with E, F, and G Dock removals and re-adjust remaining dock spacing for wider fairways.				
		0	0	0	0
4	Dry Sheds (Marina Redevelopment - Phase 1) (Marina) Replace existing dry shed facilities by incorporating them into a new structure. New structure to facilitate water-side year round farmers market and other leasable areas for retail, office, restaurants, and marine				

	manufacturing. Building to incorporate ramp from overlook park to marina floor.	
		0 0 0 0
5	Storage Lot (Marina Redevelopment - Phase 2) Marina (Property) / Waterfront (Development) Coordinate with City's Redevelopment project and marina steps.	
		0 0 0 0
6	D Dock Finger Extensions Extend north side Dock fingers to accommodate 50 foot boats. Coordinate the removal of E, F, and/or G Docks as necessary, in order to provide wider fairways.	
		0 0 0 0
7	Dock Replacement/Removal (E) Coordinate the removal of E, F, and/or G Docks as necessary with the replacements of M and N docks, in order to provide wider fairways. If space allows, replace one of these Docks with 50 foot slips. Provide covered moorage as permitted, and upgrade waterside utilities.	
		0 0 0 0
8	Dock Replacement/Removal (F) Coordinate the removal of E, F, and/or G Docks as necessary with the replacements of M and N docks, in order to provide wider fairways. If space allows, replace one of these Docks with 50 foot slips. Provide covered moorage as permitted, and upgrade waterside utilities.	
		0 0 0 0
9	Dock Replacement/Removal (G) Coordinate the removal of E, F, and/or G Docks as necessary with the replacements of M and N docks, in order to provide wider fairways. If space allows, replace one of these Docks with 50 foot slips. Provide covered moorage as permitted, and upgrade waterside utilities.	
		0 0 0 0
Tier 2 Projects		
10	Electrical System Upgrades South of CSR (Marina S.Lot) from: "A" Dock to: "L" Dock Replacement of electrical systems through the south lot of the Marina. Coordinate with South Bulkhead Replacement and parking lot lighting.	
		0 0 0 0
11	South Parking Lot Lighting (Marina South Lot) Replacement south parking lot lighting. Upgrade to energy efficient LED lighting.	
		0 0 0 0
12	Des Moines South Marina Bulkhead Replacement from: "A" Dock to: "L" Dock Replace the un-finished portion of the Bulkhead L Dock to A dock.	
		0 0 0 0
13	Fuel Tank Upgrade (Marina) Due to the age of the fuel tanks insurance is extremely expensive and a new upgraded fuel system is required to lower those long term costs.	
		0 0 0 0
14	Tenant Hoist Replace failing original Tenant Hoist.	
		0 0 0 0
15	Marina Master Plan "Tune up" Tune up master Plan assumptions. Update and revise as necessary.	
		0 0 0 0

16	Dock Replacement/Removal (L) Replace L dock with 40-50' slips. Provide covered moorage as permitted, and upgrade waterside utilities.				
		0	0	0	0
17	Dock Replacement/Removal (K) Replace L dock with 40-50' slips. Provide covered moorage as permitted, and upgrade waterside utilities.				
		0	0	0	0
18	Dock Replacement/Removal (H) Replace L dock with 40-50' slips. Provide covered moorage as permitted, and upgrade waterside utilities.				
		0	0	0	0
19	Dock Replacement/Removal (I) Replace L dock with 40-50' slips. Provide covered moorage as permitted, and upgrade waterside utilities.				
		0	0	0	0
20	Dock Replacement/Removal (J) Replace L dock with 40-50' slips. Provide covered moorage as permitted, and upgrade waterside utilities.				
		0	0	0	0
Tier 3 Projects					
21	Travel Lift Replacement (Marina) Replace current Travel-lift with new, Possibly a larger machine.				
		0	0	0	0
22	Dock Replacement/Removal (A) (Marina) Replace existing dock.				
		0	0	0	0
23	Dock Replacement/Removal (B) (Marina) Replace existing dock.				
		0	0	0	0
24	Dock Replacement/Removal © (Marina) Replace existing dock.				
		0	0	0	0
25	Dock Replacement/Removal (D) Replace existing dock.				
		0	0	0	0
26	Guest Moorage Restrooms Rebuild current Restroom. Rebuild Guest moorage restrooms and separate public from Tenants.				
		0	0	0	0
27	Marina Office Replacement				
		0	0	0	0

7. GLOSSARY OF TERMS

Adaptive Purpose Building (APB): A structure located on the Marina floor intended for a mixture of potential uses including but not limited to office, boat storage, retail, year-round farmers market, and other businesses associated with complimenting the Marina activities and waterfront experience. The APB will be integrated into the Marina steps and facilitate pedestrian access from Overlook Park to the promenade.

Breakwater: The large rock barrier built to shelter and protect the Marina from the force of waves. The breakwater is partially located on property owned by the Department of Natural Resources.

Bulkhead: A bulkhead, or seawall, is a vertical structure or embankment to protect and retain land from the erosion effects of the ocean. Also see north bulkhead and south bulkhead.

Covered Moorage: In water docks and/or slips with a roof structure.

CSR Marine: A private full service boat yard located south of the Marina office. CSR Marine leases property from the Marina.

Des Moines Marina Association (DMMA): Is a non-profit organization serving Marina moorage tenants and other stakeholder interested in improving the quality of the Des Moines Marina. The DMMA web site address is: <https://www.dmmaonline.org/>

Des Moines Yacht Club (DMYC): Is a boating club established in 1957, and promotes boating in the Puget Sound. The DMYC web site address is: <https://desmoinesyachtclub.com/>

Dock: Is typically a floating structure in a protected area for boats to moor, or provide access to waterfront activities.

Dry Sheds: There are currently 2 dry sheds structures located on the Marina floor. These buildings consist of 77 individual storage garages that are 25' x 8'11" x 8'5" and about 40 lockers that are 4' x 2'10" x 8'5". The existing dry sheds are envisioned to be replaced by the adaptive purpose building.

Dry Stack Storage: A method for storing boats that involves the vertical storage of boats in rack systems with the same density-storage philosophy used in the warehouse industry. Boats are moved to and from the dry stack storage area to the water via a fork lift or trailer system.

Dry Storage: Storage for a vessel and/or related items on land.

Enterprise Fund: The Marina is an enterprise fund in the City's accounting system, meaning that all marina revenues and expenses are supported by its direct use customers and not the general public. No general fund tax revenues of the City directly support the Marina, and no Marina revenues directly support the City. (See also Indirect Cost Allocation and Inter-fund General Fund Charge Back.)

Finger Pier: The gangway/walkway extending from a dock, that facilitates access to vessels moored on either side of the pier.

Frequent User Card: These are the access devices that residents and non-residents can purchase for day use (5am-10pm) to access to the 3 parking lots surrounding the Marina floor (beach park lot, north lot, and south lot). These passes operate on an annual basis from January 1st thru December 31st.

Guest/transient moorage: An area of the Marina set aside for visiting or traveling boaters. Vessels may be moored on our guest docks for up to 2 weeks maximum unless otherwise authorized by the Harbormaster.

General Fund: The General Fund (or current expense) is the City's operating fund. It accounts for all financial resources of the general government, except those required or elected to be accounted for in another fund. (See also Enterprise Fund)

Harbor: A manmade or naturally occurring place in the sea near land that is generally protected from the effects of the weather on the open water.

Harbormaster: The Department Director for the Marina who reports to the City Manager or his designee. The Harbormaster is responsible for all of the operations of the Marina.

Hot-Berthing: When a permanent tenant authorizes the Marina to utilize their slip space for a short period of time (less than a month) while it is vacant. Provided that the Marina was able to lease the slip to a guest, the tenant would receive a credit against their normal daily rate. The guest pays the normal guest moorage daily rate.

Indirect Cost Allocation: The Marina pays its proportional share of the City's overhead, including departments as finance, legal, and administration. (See also Enterprise Fund and Inter-fund General Fund Charge Back)

Inter-Fund General Fund Charge Back: This is when the Marina is reimbursed by the general fund for direct costs related to Marina staff operating outside normal Marina functions. (See also Enterprise Fund and Indirect Cost Allocation)

Liveaboard: Tenants who have signed Lease agreements with the Marina to live on their boat more than 7 nights/month. A maximum of 10 liveaboards are permitted in the Marina.

Marina: A port located on a body of water that provides dockage, moorings, storage, fuel docks, supplies and maintenance services for boats. The Des Moines Marina include both water side and land side functions.

Marina staff: Consists of office, service, maintenance, and security personnel as employed by the City of Des Moines. These employees are paid from the Marina's enterprise fund for all services related to the Marina.

Marina Redevelopment: The construction and reconstruction of marina assets, both water side and land side. Waterside redevelopment includes reconstruction of docks and bulkheads. Landside redevelopment includes construction of facilities that integrate the Marina to the downtown core, including the Marina steps, possibly including a small boutique hotel with other amenities, and the adaptive purpose building.

Marina Zone: An enterprise funded zone where revenue and expenses are retained for Marina operations. The marina Zone is separate and distinct from the City's Waterfront and Redondo Zones, which are supported by the City's general fund.

Mitigation: The action required by various regulatory agencies charged with oversight of the Puget Sound and our marine habitat, to offset the impacts of a project on the marine environment.

Municipal Facilities Committee: A Committee comprised of three City Council Members. City staff presents and receives feedback from the committee members on various capital projects and other operational issues. The Committee members provide consensus direction on information, which staff brings forward to the full City Council for further policy decisions.

Open Moorage: In water docks and/or slips without a roof structure.

Pile/Piling: These are heavy stakes, posts, or columns installed into the ground or seafloor to support the foundations of a superstructure, like the Marina, holding the docks in place.

Public Access: The public is generally permitted to access the Marina, within the designated operating hours. The general public is not permitted to access docks leased by permanent tenants. The Marina facilitates public access and enjoyment of the marine environment via the promenade, access to small businesses (like the Quarterdeck), parking in the north lot, and the public fishing pier.

Pump out station: A sanitation facility used for draining holding tanks on a boat. The Marina's pump out station is located at the tenant restroom facility in the south lot.

Redondo Zone: Is a City of Des Moines General fund operation. Revenues and expenditures from the Redondo Zone are part of the City's general fund. Marina staff time for the support of the Redondo Zone is compensated from the General fund.

Resident (vs. Tenant): A resident is a person who lives within City of Des Moines boundaries. A resident may or may not be a Marina tenant. Approximately 25% of the marina tenants are Des Moines residents. The vast majority of marina tenants are not residents of Des Moines.

Seasonality (*as it relates to boating, fishing, etc.*): Washington weather and fishing opportunities/regulations dictate the boating season and its uses. History reflects the high use boating months as late spring to early fall.

Slip: A docking space or berth for the accommodation of a marine craft.

Slip Mix: The range of sizes of slips in the Marina to accommodate various sizes of boats moored in the Marina.

Small Boat: Vessels that are generally under 30 feet and more frequently trailer-able. Can be either a power boat or a sail boat.

Subleasing: Similar to "hot-berthing" only for period of a minimum 1 month. Tenants are able to sublease their slip up to 6 months in a 12 month period. Unless they have sold their boat, they have the option to allow the new buyer to sublease the slip for a maximum 4 months.

Tenant (vs resident): A Marina customer who has signed a lease agreement with the Marina to store a vessel or related item (trailer/kayak) on Marina property. A tenant may or may not be a Des Moines resident. Approximately 25% of the marina tenants are Des Moines residents. The vast majority of marina tenants are not residents of Des Moines.

Tenant Access: Tenants are granted access to all parking gates in the south lot and their individual docks, as well as the dedicated restrooms in the south lot. Tenants are not granted access to the Beach Park unless they purchase a Frequent User card. See Frequent User Card defined above.

Tenant Hoist: This is the stationary 2 sling hoist for specialized lifting small boats (less than 21') out of the water and placed to a trailer. It is located just north of N-dock. Current load capacity is 3,000 LBS for the northern sling. The southern sling is out of order until repairs can be made.

Tenant parking: Current customers paying for moorage/storage for a vessel are provided special parking permits to park a vehicle in tenant restricted parking areas and afterhours. It is provided as a part of the moorage fee for their vessel storage. Tenant parking is generally provided in the south lot.

Travel Lift: Also called a boat hoist or boat crane, is a specialized type of crane used for lifting boats out of the water and transporting them around the Marina or to a trailer. The Marina owns a 25 ton travel lift which is a mobile sling hoist that can hoist up to about 50' boats. This hoist is leased to CSR primarily Monday thru Friday and Marina staff have the ability to schedule launches and haul outs for tenants with boats up to 27'.

Waterfront Zone: Is a City of Des Moines General fund operation. Revenues and expenditures from the Waterfront Zone are part of the City's general fund. Marina staff time for the support of the Waterfront Zone is compensated from the General fund.

Winter Moorage Program (guest dock): a monthly moorage program provided on our guest moorage dock for vessels 32' and larger between the months of November and April.

Working Marina: An active marina with waterfront amenities and activities for the general public and for boaters. This can include boat repair and marine services.

8. STUDIES & DOCUMENT LIST

The following documents and studies mentioned throughout the Comprehensive Marina Master Plan, along with this document, are available on the Marina's website under the Master Plan section. Visit our website www.desmoinesmarina.com.

Current Marina Project List

Describe in Chapter 6. A full list will be available on the Marina's website.

Des Moines Marina Service Life Report.

The Service Life Report provides a detailed analysis of the condition of the Marina docks and boat use areas. The draft report was completed in December 2020 by Reid Middleton.

City of Des Moines Marina Electrical Upgrade Study

Wood/Harbinger, Inc. provided engineering and design services for the Marina's Upgrades to the Power Distribution System Project (Phase 1). Phase 1 was the Northern upgrades.

Des Moines Marina Master Plan Update Demand Assessment

Waggoner Marina Survey

This report summarizes the results of the Waggoner Marine Consulting project to evaluate the Marina. Completed in March 2019 by Waggoner Marine Services.

Waggoner Marina Phase 2 Study

This report summarizes the results of the Waggoner Marine Consulting project to evaluate the Marina. Completed in March 2021 by Waggoner Marine Services.

Passenger Ferry Study Conducted by Diedrich rpm

The City of Des Moines has been working for years on the possibility of Passenger Ferry service. The route considered would be a mid-stop between Tacoma and Seattle. The City collaborated with Diedrich*rpm on a demand study, along with participating in the PSRC-kpff study.

The City continues to stay closely involved with personnel within the Ferry industry.

BST Associates Report

This report is currently in production by our current consultant team Moffatt and Nichol.

Tenant Q & A Document

This document was created to help streamline communications between the Marina and the Marina tenants. The goal is to have questions answered that many people may have on their minds and having the answers, may spark other pertinent questions.

Tax General Obligation Bonds, 2022 option.

This is a summary of the current Debt profile and debt capacity completed January 2021 by Key Bank for new bond scenarios