Des Moines Marina
Master Plan Update

Municipal Facilities Committee
February 25, 2021

Katy Bevegni, Assistant Harbor Master
Dan Brewer, Chief Operations Officer

Purpose and Objectives

- Review Zones:
  - Marina Zone
  - Waterfront Zone
  - Redondo Zone
- Review Condition Assessment Report – Reid Middleton Report
- Review Draft Marina Improvement Plan (MIP)
- Discuss and review Master Plan schedule and next steps

Marina Master Planning Work

Defining the Zones

Current Marina Overview & Assets
Water-side

- 730 in water slips ranging in size from 20’ – 50’, with a few larger end tie spaces
  - 2/3 of these slips are 28’ and smaller
  - ~2/3 of slips are covered
- 38 in water guest moorage slips and side tie spaces
- Fuel Dock: gas & diesel
- 25 ton haulout travelift near CSR Boatyard
- Current Water-side Leases:
  - Ranger Tugs
  - Ocean Quest
  - Puget Sound Sailing Institute
  - Classics Yachts
  - Care Free Boat Club (Pending)

Current Marina Overview & Assets
Land-side (Approx. 9 Acres)

- Tenant Parking (~300 spaces)
- Marina Office & Roundabout parking lot
- Dry Storage Lot
- Dry Sheds (72)
- Sidewalk/Promenade area
- 2 Marina tenant restrooms w/ showers
- Current Land-side Leases:
  - CSR Marine Boatyard
  - Quarter Deck Coffee, Beer, and Wine Bar
  - SR-3 Sea-Life Hospital and Recovery Center

Marina Master Plan
Work completed to date

- Meetings with DMMA Board Members
  (Todd Powell, Bill Linscott , Ken Rogers, and others)
- Mark Bunzel (Waggoner)
  - Phase 1 Report - The Future Vision and Boating Demand
    - DMMA Presentations
    - Presentation to Stakeholders at Senior Center
  - Phase 2 Report – Financial Analysis
    - Pending
- Makers – Waterfront Visioning
- Robert Holms – Marina Redevelopment (Land-side)
  - Community Outreach – Argosy Cruise Ship & Yacht Club
  - City Council Briefings
  - Coordinated and Integrated with Water-side
- Passenger Only Ferry Studies
  - diefrich*rpm (Jill & Kyle)
  - PSRC – kpff Study
  - Peter Phillips, Bruce Agnew, and others
- Geotechnical Report - kpff
- Condition Assessment Report – Reid Middleton

Changes Coming to the Marina
(out of necessity and opportunity)

- Reasons:
  - In-water and Marina Floor infrastructure are over 50 years old
  - Many elements are at, past, or reaching their end of useful service life
  - Existing systems do not meet present-day building codes
  - Existing in-water construction materials are environmentally unfriendly
  - Existing in-water storage configuration, with too many small slips and too few large slips, is not meeting existing demand, nor will it meet projected future demands.
- A Few Instances:
  - Current dry storage sheds are in need of repair and do not provide optimal use of the valuable marina floor.
  - Covered moorage system is in poor condition with failing timber support post showing camber from previous snow –load.
  - Corrosion of steel truss members on many uncovered docks.
  - Average monthly vacancy rate of smaller slips (20’-28’) continues to increase.

Marina Master Planning Work
Condition Assessment Report by Reid Middleton

- Excerpts:
  - A-1: Visual Assessment and Rating
  - A-2- A-5: Individual Dock Conditions
  - A-6: Estimated Service Life
  - A-7: Conclusion

- Full report will be made available on the City's Web Site

Marina Master Planning Work

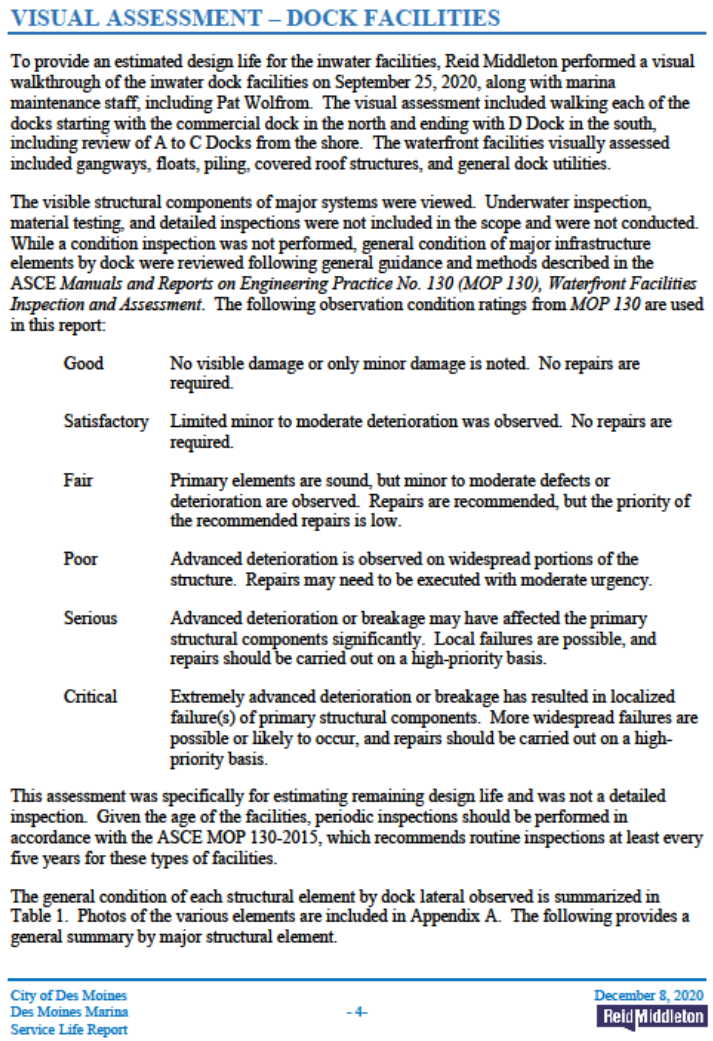
Condition Assessment Report by Reid Middleton

A-1: Visual Assessment and Rating

This assessment was specifically for estimating remaining design life for the in-water facilities.

- Good: No visible damage or only minor damage is noted. No repairs are required.
- Satisfactory: Limited minor to moderate deterioration was observed. No repairs are required.
- **Fair:** Primary elements are sound, but minor to moderate defects or deterioration are observed. Repairs are recommended, but the priority of the recommended repairs is low.
- **Poor:** Advanced deterioration is observed on widespread portions of the structure. Repairs may need to be executed with moderate urgency.
- Serious: Advanced deterioration or breakage may have affected the primary structural components significantly. Local failures are possible, and repairs should be carried out on a high-priority basis.
- Critical: Extremely advanced deterioration or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur, and repairs should be carried out on a high-priority basis.

A-1



VISUAL ASSESSMENT – DOCK FACILITIES

To provide an estimated design life for the inwater facilities, Reid Middleton performed a visual walkthrough of the inwater dock facilities on September 25, 2020, along with marina maintenance staff, including Pat Wolfrom. The visual assessment included walking each of the docks starting with the commercial dock in the north and ending with D Dock in the south, including review of A to C Docks from the shore. The waterfront facilities visually assessed included gangways, floats, piling, covered roof structures, and general dock utilities.

The visible structural components of major systems were viewed. Underwater inspection, material testing, and detailed inspections were not included in the scope and were not conducted. While a condition inspection was not performed, general condition of major infrastructure elements by dock were reviewed following general guidance and methods described in the ASCE *Manuals and Reports on Engineering Practice No. 130 (MOP 130), Waterfront Facilities Inspection and Assessment*. The following observation condition ratings from *MOP 130* are used in this report:

Good	No visible damage or only minor damage is noted. No repairs are required.
Satisfactory	Limited minor to moderate deterioration was observed. No repairs are required.
Fair	Primary elements are sound, but minor to moderate defects or deterioration are observed. Repairs are recommended, but the priority of the recommended repairs is low.
Poor	Advanced deterioration is observed on widespread portions of the structure. Repairs may need to be executed with moderate urgency.
Serious	Advanced deterioration or breakage may have affected the primary structural components significantly. Local failures are possible, and repairs should be carried out on a high-priority basis.
Critical	Extremely advanced deterioration or breakage has resulted in localized failure(s) of primary structural components. More widespread failures are possible or likely to occur, and repairs should be carried out on a high-priority basis.

This assessment was specifically for estimating remaining design life and was not a detailed inspection. Given the age of the facilities, periodic inspections should be performed in accordance with the ASCE MOP 130-2015, which recommends routine inspections at least every five years for these types of facilities.

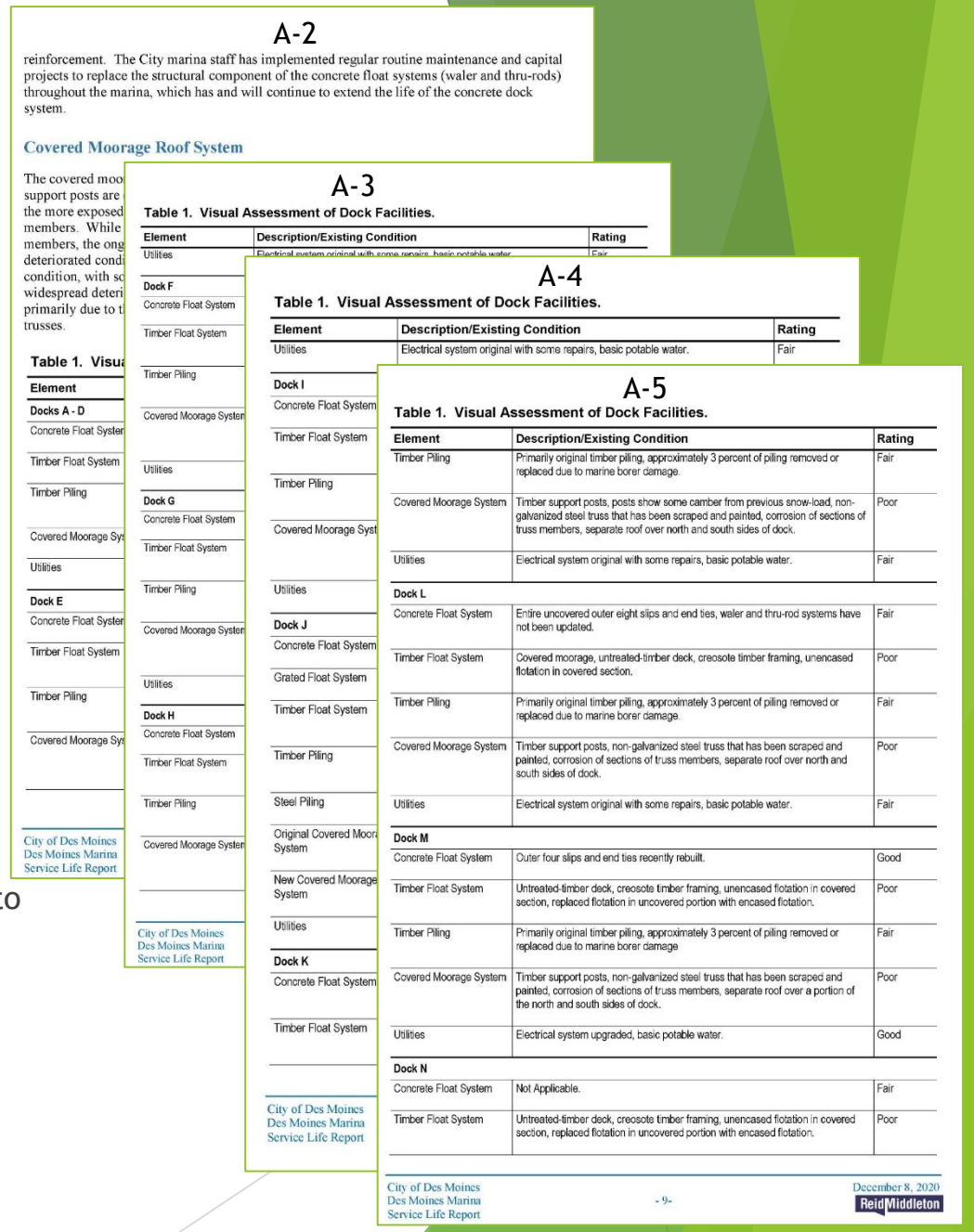
The general condition of each structural element by dock lateral observed is summarized in Table 1. Photos of the various elements are included in Appendix A. The following provides a general summary by major structural element.

Marina Master Planning Work

Condition Assessment Report by Reid Middleton

A-2 thru 5: Individual Dock Conditions

- A-D Docks: Are in Good to Fair condition
- E-N Docks:
  - Timber Float System = POOR
  - Covered Moorage Systems = POOR
    - Effects 410 slips in a 729 slip marina (over 50%)
  - Concrete Float Systems = FAIR
  - Timber Piling = FAIR
    - Primarily original timber piling, approx. 3% removed or replaced due to borer damage.
  - Utilities = FAIR
    - Still the original system with some repairs
    - M & N Docks in good condition due to upgrades



A-2

reinforcement. The City marina staff has implemented regular routine maintenance and capital projects to replace the structural component of the concrete float systems (waler and thru-rods) throughout the marina, which has and will continue to extend the life of the concrete dock system.

Covered Moorage Roof System

A-3

Table 1. Visual Assessment of Dock Facilities.

Element	Description/Existing Condition	Rating
Utilities		
Dock F		
Concrete Float System		
Timber Float System		
Timber Piling		
Covered Moorage System		
Utilities		
Dock G		
Concrete Float System		
Timber Float System		
Timber Piling		
Covered Moorage System		
Utilities		
Dock H		
Concrete Float System		
Timber Float System		
Timber Piling		
Covered Moorage System		

City of Des Moines
Des Moines Marina
Service Life Report

A-4

Table 1. Visual Assessment of Dock Facilities.

Element	Description/Existing Condition	Rating
Utilities	Electrical system original with some repairs, basic potable water.	Fair
Dock I		
Concrete Float System		
Timber Float System		
Timber Piling		
Covered Moorage System		
Utilities		
Dock J		
Concrete Float System		
Grated Float System		
Timber Float System		
Timber Piling		
Steel Piling		
Original Covered Moorage System		
New Covered Moorage System		
Utilities		
Dock K		
Concrete Float System		
Timber Float System		

City of Des Moines
Des Moines Marina
Service Life Report

A-5

Table 1. Visual Assessment of Dock Facilities.

Element	Description/Existing Condition	Rating
Timber Piling	Primarily original timber piling, approximately 3 percent of piling removed or replaced due to marine borer damage.	Fair
Covered Moorage System	Timber support posts, posts show some camber from previous snow-load, non-galvanized steel truss that has been scraped and painted, corrosion of sections of truss members, separate roof over north and south sides of dock.	Poor
Utilities	Electrical system original with some repairs, basic potable water.	Fair
Dock L		
Concrete Float System	Entire uncovered outer eight slips and end ties, waler and thru-rod systems have not been updated.	Fair
Timber Float System	Covered moorage, untreated-timber deck, creosote timber framing, unencased flotation in covered section.	Poor
Timber Piling	Primarily original timber piling, approximately 3 percent of piling removed or replaced due to marine borer damage.	Fair
Covered Moorage System	Timber support posts, non-galvanized steel truss that has been scraped and painted, corrosion of sections of truss members, separate roof over north and south sides of dock.	Poor
Utilities	Electrical system original with some repairs, basic potable water.	Fair
Dock M		
Concrete Float System	Outer four slips and end ties recently rebuilt.	Good
Timber Float System	Untreated-timber deck, creosote timber framing, unencased flotation in covered section, replaced flotation in uncovered portion with encased flotation.	Poor
Timber Piling	Primarily original timber piling, approximately 3 percent of piling removed or replaced due to marine borer damage	Fair
Covered Moorage System	Timber support posts, non-galvanized steel truss that has been scraped and painted, corrosion of sections of truss members, separate roof over a portion of the north and south sides of dock.	Poor
Utilities	Electrical system upgraded, basic potable water.	Good
Dock N		
Concrete Float System	Not Applicable.	Fair
Timber Float System	Untreated-timber deck, creosote timber framing, unencased flotation in covered section, replaced flotation in uncovered portion with encased flotation.	Poor

City of Des Moines
Des Moines Marina
Service Life Report
- 9-
December 8, 2020
Reid Middleton

Marina Master Planning Work

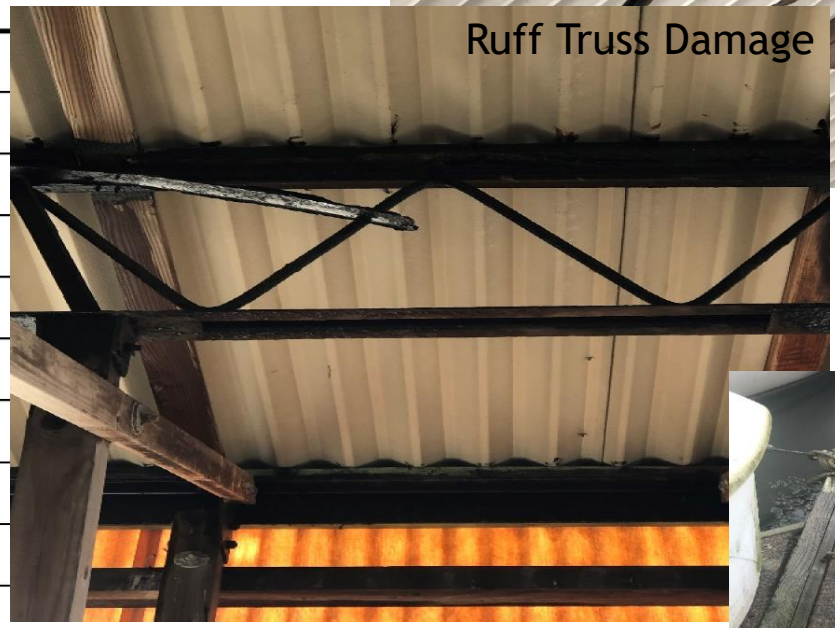
Condition Assessment Report by Reid Middleton

A-6: Estimated Service Life

Table 2. Dock Facilities – Estimated Service Life Remaining.

Item	Estimated Service Life Remaining
Docks A - D	15-25 years
Docks E to I	10-15 years
Dock J	10-15 years, 30 years for newer section
Docks K and L	10-15 years
Dock M	10 years
Dock N	10 years
Guest Party Docks	25-30 years
Fuel Float	20-25 years
Commercial Dock	25 years
Seawall	5-15 years
Gangways	10-15 years


Ruff Truss Corrosion


Ruff Truss Damage


Deteriorating Concrete Float

Marina Master Planning Work

Condition Assessment Report by Reid Middleton

A-7: Conclusion

- Due to the age of the Marina
  - Timber floats and covered roof structures nearing end of life.
  - Covered areas expected to have 10-15 years (at best)
  - Deterioration expected to accelerate.
  - Estimated service of life does not include extreme events and potential changing environmental regulations.

CONCLUSION

The City of Des Moines Marina was constructed in the late 1960s and early 1970s, with some minor expansion in the 1980s. The inwater facility consists of a variety of concrete and timber floating dock structures anchored primarily with timber piling. Six of the dock laterals at the marina are uncovered concrete pontoon with wood waler dock structures. The remaining ten dock laterals are primarily timber docks with unencased flotation and timber and steel truss covered moorage roofs.

The City is in the process of an assessment for determining how to proceed with continued stewardship of the marina. As part of that process, the City requested Reid Middleton perform a visual assessment and provide estimated remaining service life for the major inwater elements at the marina. While some of the inwater elements such as the concrete dock structures and piling have significant remaining life with routine maintenance, other marina elements, in particular the timber floats with covered roof structures, are nearing the end of their service life.

The timber floats and covered roof structures are 50 years old and approaching the end of their useful service life. Overall deterioration is expected to accelerate given the age of the systems. The covered moorage and timber float systems are estimated to have approximately 10 to 15 years of useful service life remaining. The concrete floats have approximately 15 to 25 years of useful service life remaining. These estimates assume that the continued proper repairs and maintenance of all system components will be performed and that some interim improvements such as ADA accessibility, service, and amenity upgrades may be implemented.

The estimated remaining service life does not consider extreme events and potential changing environmental regulations. Extreme events may include fire, heavy snow and windstorms, and other catastrophic events. An extreme event may result in the need for immediate replacement of infrastructure at the marina. Changing regulations and environmental considerations may make earlier replacement for portions of the inwater infrastructure at the marina more desirable or cost effective.

Marina Master Planning Work
Draft Marina Improvement Plan (MIP) – Staff Recommendation

Tier 1 (5-10 years)

- Tenant Restroom
- Dock Replacements/Removals: E,F, G, M, & N
- Dry Sheds / Storage Lot (Marina Redevelopment)
- Electrical System upgrade south of CSR
  - South Lot Parking lighting would coincide.

Tier 2 (10-20 years)

- Bulkhead south of CSR (early T2)
  - Extension of Pedestrian Walkway
- Fuel Tank upgrade *
- Tenant Hoist
- Dock Replacements: H, I, J, K, & L

Tier 3 (20-30 years or opportunity)

- Dock Replacements: A, B, C, & D
- Travel-Lift
- Utilities
- Marina Office
- Guest Moorage Restrooms

Marina Master Planning Work

Draft Marina Improvement Plan (MIP) - Docks E, F, G, M, & N

Marina Master Planning Work
Schedule and Next Steps

2021	March/April	May/June	July/August	Sept/Oct
	• Mark Bunzel Report • Reid Middleton Assessment Report • Staff Recommendations • Condition by Marina Assets • Policy Questions	• Community Meetings • DMMA/Tenant Comment Committee review/ recommendations • Council decisions on MIP • Preliminary Engineering	• City Staff edit/Review • Permitting and logistics • Funding options	• Final Marina Master Plan reviews • 2021 Master Plan adopted by City Council (Nov.) • Update City's Comprehensive Plan (Dec.)