PORT MILWAUKEE CAPITAL ASSET RENEWAL PLAN

Presentation to the Milwaukee Common Council



CONNECTING TO THE WORLD



SOUTH HARBOR TRACT

Asset Categories Present (All):

- Buildings
- Dockwalls
- Navigational Areas (Dredge Depths)
- Fencing
- Green Infrastructure & Public Spaces
- Lighting
- Pavement and Roads
- Rail
- Utilities (Water, Sanitary, & Stormwater)
- Vehicles, Vessels, Cranes, and Other Equipment



BOUNDARY OF SOUTH HARBOR TRACT LAND AREA





NORTH HARBOR TRACT

Asset Categories Present:

- Dockwalls
- Navigational Areas (Dredge Depths)
- Green Infrastructure & Public Spaces
- Utilities (Associated with Pier Wisconsin)



BOUNDARY OF NORTH HARBOR TRACT LAND AREA







- The CARP is to provide a high level, long-term action plan for asset renewal through the year 2070 and include considerations for several key factors influencing asset renewal planning at the port, including growth plans and long-term trends in coastal conditions and infrastructure resiliency.
- CARP is to address port assets within the boundaries of its South Harbor Tract and North Harbor Tract including navigational areas within adjacent waterways. Port infrastructure assets are organized into 10 primary categories.



RAMBOLI

Bright ideas. Sustainable change.



OVERVIEW OF PLAN DEVELOPMENT METHODOLOGY AND APPROACH

State of Port Infrastructure	Level of Service (LOS)	Identify Asset Renewal Strategies and Develop Plan
 Identify asset inventory to be included in the CARP Evaluate current asset condition and assign a standardized condition rating Identify repair and deferred maintenance needs Determine current asset replacement costs. 	 Define LOS for each asset type based on four (4) areas of consideration: Organizational Goals Stakeholder Needs and Expectations Legislative / Regulatory Requirements Financial Considerations In basic terms, Level of Service is the Port's required level of quality and performance of its assets. 	 Establish asset renewal strategies based on five (5) areas of consideration: LOS Risk New Technologies Growth Environmental Impact Develop renewal plan for maintenance and replacement work over the plan period (through year 2070).

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RENEWAL SUMMARY







TOTAL RENEWAL COSTS THROUGH 2070

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RENEWAL SUMMARY



CURRENT AND PROJECTED RENEWAL NEEDS



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BUILDINGS, TERMINALS, AND WAREHOUSES

INVENTORY

29 Structures

- Lease Buildings with Shared Renewal Responsibilities (13)
- Non-Leased Buildings with Full Renewal Responsibility (4)
- Bare Ground Lease Buildings with No Current Renewal Responsibilities (12)

REPLACEMENT VALUE 2021



CURRENT CONDITION

2021

- 17 Structures Assessed
- Condition Rating Based on Facility Condition Index (FCI)
- Average FCI = 0.11 (Fair) for Buildings Portfolio

RENEWAL NEED 50-Year



18%

Percent of Total

Asset Portfolio

RAMBOLL

KEY NOTES

Replacement value and renewal need cover the 17 buildings identified in the inventory with shared and full renewal responsibilities.

Bright ideas. Sustainable change.

28% Percent of Total Asset Portfolio



DOCKWALLS

INVENTORY

33 Segments

- Steel Sheet Pile Dockwalls and Bulkheads
- Stone Revetments and Rubble Mound Breakwater
- Piers





41% Percent of Total Asset Portfolio

CURRENT CONDITION

- Condition rating based on estimated remaining useful life.
- Most dockwall assets are in good or better condition (~70% or about 19,500 feet)
- Only 1 segment determined to be deficient (Grand Trunk Channel North Bank)

RENEWAL NEED

50-Year



37%

Percent of Total Asset Portfolio

KEY NOTES

Many dockwalls will be coming to end of useful life over the next 50-year planning period. Most dockwall renewals planned assumed full replacement of dockwall asset at end of UL. Some dockwalls may benefit from major rehabilitation at end of useful life to extend its service cost effectively. Evaluate major renewal requirements for dockwalls as they near end of UL to determine feasibility and cost-benefit of rehabbing a structure over replacement.



NAVIGATIONAL AREAS

INVENTORY

11 Areas

- Slip 1
- Slip 2
- Slip 3
- Liquid Cargo Pier
- City Heavy Lift Dock
- Municipal Mooring Basin
- Greenfield Dock
- Pier Wisconsin
- Maritime Basin & Entrance
- South Shore Cruise Dock / Lake Express Car Ferry Dock
- Grand Trunk Slip



REPLACEMENT VALUE 2021

2021

Requires additional data

CURRENT CONDITION

2021

- Current hydrographic survey data for navigational areas not available at time of plan development.
- Historic dredge data indicates overall low sedimentation rates and dredge requirement.
- All navigational areas currently rated as functional.

RENEWAL NEED

50-Year

- Renewal planning for dredging navigational areas not included due to lack of data.
- Asset renewal plan workbook setup for future plan updates and inclusion of dredge planning.
- Factor long-term projections for lake levels in renewal planning.

KEY NOTES

 Long-term projections for low lake levels may be factored into dredge planning.



FENCING

INVENTORY

Includes:

- Fencing and Gates
- Inventory is made up of mostly 6 or 8 ft. chain link with 3-wire barb.
- Some decorative steel picket fence in inventory.
- Total quantity if fencing is about 44,950 lineal feet (8.5 miles)

REPLACEMENT

2021

\$2.62M

2% Percent of Total Asset Portfolio

CURRENT CONDITION

Condition rating based on estimated

2021

 Decorative steel picket fencing in good condition.

remaining useful life.

 Most security fencing in fair to good condition with about 10% considered deficient. **RENEWAL NEED** 50-Year

\$9.77M

5%

Percent of Total

Asset Portfolio

KEY NOTES

 Some fencing segments do not have well defined function while most may be considered critical assets. A method for prioritizing important fence segments based on function would be beneficial to renewal planning.



GREEN INFRASTRUCTURE AND PUBLIC SPACES

INVENTORY

Includes:

- North Urban Park
- Russell Avenue Pier and Walkway*
- Park space adjacent to Lake Express
- Pier Wisconsin*
- Area adjacent to dockwalls between CDF and Liquid Cargo Pier*
- Stormwater Pond (Parcel C)
- Grand Trunk Wetlands

REPLACEMENT VALUE 2021



<1% Percent of Total Asset Portfolio

CURRENT CONDITION

2021

- Condition assessment based on functional or nonfunctional determination in fulfilling provided service.
- Current condition ratings for green infrastructure and public space assets were all determined to be functional.

RENEWAL NEED 50-Year

\$1.64M

<1% Percent of Total Asset Portfolio

KEY NOTES

• Opportunities exist to expand green infrastructure facilities to meet community stakeholder expectations. [e.g. Harbor District Inc. study titled *Port Milwaukee Storm Water and Green Infrastructure Plan* (2020)]





LIGHTING

INVENTORY

Includes:

- Lighting in this category is primarily pole mounted flood lighting.
- Category does not include street lighting and building or parking area lighting.

REPLACEMENT VALUE

\$14k



CURRENT CONDITION

2021

- Condition rating based on estimated remaining useful life.
- Condition and age of lights estimated based on ground inspection. No asset records identified for make and age of lights.
- All poles and lights estimated to be in good condition.

RENEWAL NEED

50-Year



<1% Percent of Total Asset Portfolio

KEY NOTES

- An assumed RUL is provided as a placeholder in the renewal plan workbook to program replacement costs over the 50-year planning horizon for each light.
- Renewal plans for lights will need to be updated as more specific asset data is identified.



PAVEMENT AND ROADWAYS

INVENTORY

Includes:

• Roadways, pavement areas, and walkways in the South Harbor Tract.

REPLACEMENT VALUE 2021



3% Percent of Total Asset Portfolio

CURRENT CONDITION

2021

- Condition rating based on estimated PASER rating system.
- Current pavement conditions are generally spread across the lifecycle, with most of the pavement area rated as good to fair.
- About 188k SF of pavement is considered in poor condition (~17%).

RENEWAL NEED 50-Year



\$9.2M

5% Percent of Total

Asset Portfolio

KEY NOTES

- ~70% of total pavement area replacement value is comprised of Terminal 1 (~\$1.5M) and City Heavy Lift Dock (~2.8M) pavement areas.
- High interest poor condition areas identified as Harbor-Lincoln Dr North Access Road, South Slip 1 West Apron and Terminal 1 Pavement area.





INVENTORY

Includes:

- 10 miles of rail and switches
- ~1/3 of rail under leased service

REPLACEMENT VALUE 2021



13% Percent of Total Asset Portfolio

CURRENT CONDITION

- 2021
- Condition rating based on estimated remaining useful life.
- About half of rail rated as good or better condition.
- Some poor and deficient track segments are identified (about 27%)

RENEWAL NEED 50-Year



22%

Percent of Total

Asset Portfolio

KEY NOTES

 Current rail mapping is dated and pending rail improvements for ag export project will require sizable update to inventory and renewal planning for next update.



UTILITIES

INVENTORY

Includes:

- South Harbor Track:
- Water, ~6.8 miles
- Sanitary ~3 miles
- Storm ~2.6 miles
- North Harbor Track: Municipal Pier utility assets,
- Water, ~ 0.2 miles
- Sanitary ~0.2 miles
- Dry Fire Line, ~0.2 miles

Y REPLACEMENT VALUE



4% Percent of Total Asset Portfolio

CURRENT CONDITION

2021

- Condition rating based on estimated remaining useful life.
- SHT Water distribution system average age 52 years
- SHT Sanitary sewer average age 54 years
- SHT Storm sewer average age 56 years
- NHT Water, sewer and fire line average age 17 years

RENEWAL NEED

50-Year



\$14.2M

7%

Percent of Total Asset Portfolio

KEY NOTES

- Current conditions of utility systems show the majority are well into their remaining useful life – replacement of most of utility system over next 50-year is planned.
- Additional visual and electronic inspections will be required to refine RUL estimate and determine the system conditions, maintenance plans, future replacement budget and scheduling needs.





VEHICLES, VESSELS, CRANES, AND EQUIPMENT

INVENTORY

Includes:

- Fleet vehicles (9)
- Vessels (3)
- Cranes (6)
- Forklifts (3)
- Tractors (3)
- Power & Compressed Air (6)
- Boom Lifts (2)
- Emergency Response & Security Equipment.

REPLACEMENT VALUE 2021



\$17.7M



CURRENT CONDITION

2021

- Condition rating based on percent remaining useful life to normalize assets category with different ULs.
- 80% of the equipment items are in either excellent or good condition.
- 9 Items identified as poor or deficient condition.

RENEWAL NEED 50-Year



KEY NOTES

 Plan for transition to electric vehicle fleet within the current 50-year renewal planning period. Estimated time horizon is by 2030/2040.

Percent of Total Asset Portfolio

6%





KEY NOTES BY ASSET CATEGORY



COASTAL MANAGEMENT FRAMEWORK

Purpose: Identify current and projected coastal processes affecting Port assets and provide framework for long term planning and mitigation of risks to vulnerable waterfront assets

Coastal Factor	Considerations for 50-year Planning Period
Lake Levels	 Long term lake levels to remain relatively stationary - potential to trend downward due to change in climate conditions Plan for monthly average lake levels 576 to 582 IGLD 85
IGLD Adjustment	Effect of isostatic rebound negligible over next 50 years
Precipitation	 Total averaged annual rainfall likely to remain stable Intensity of precipitation during rainfall events likely to increase
Storm Surge	Plan for 2-foot surges
Wave Height and Runup	 Plan for wave heights at least 590 IGLD 85 on eastern dockwalls Runup and overtopping of dockwalls will occur during storm events





WATER LEVELS





