

PORT MILWAUKEE CAPITAL ASSET RENEWAL PLAN

Presentation to the Milwaukee Common Council



RAMBOLL

Bright ideas. Sustainable change.

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:

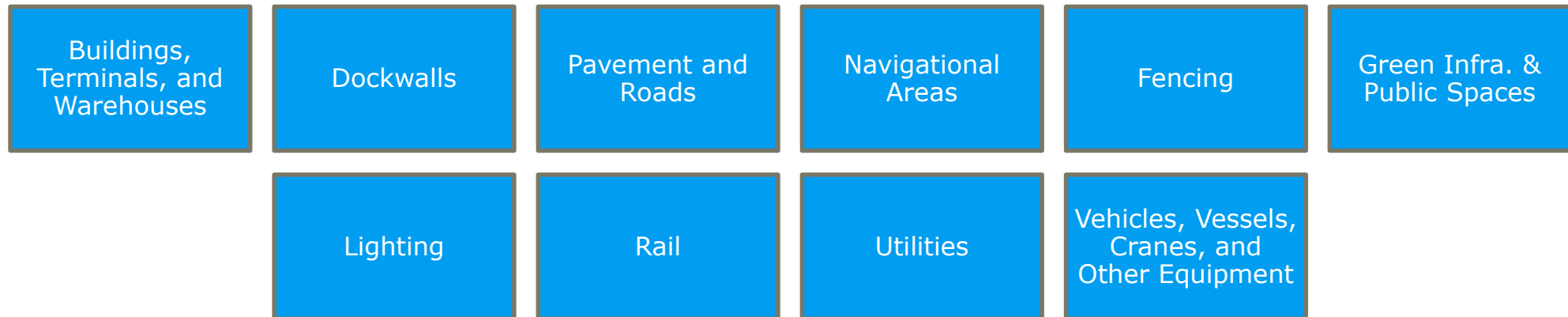
- Dockwalls
- Navigational Areas (Dredge Depths)
- Green Infrastructure & Public Spaces
- Utilities (Associated with Pier Wisconsin)



BOUNDARY OF NORTH HARBOR TRACT LAND AREA

SCOPE

- 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.

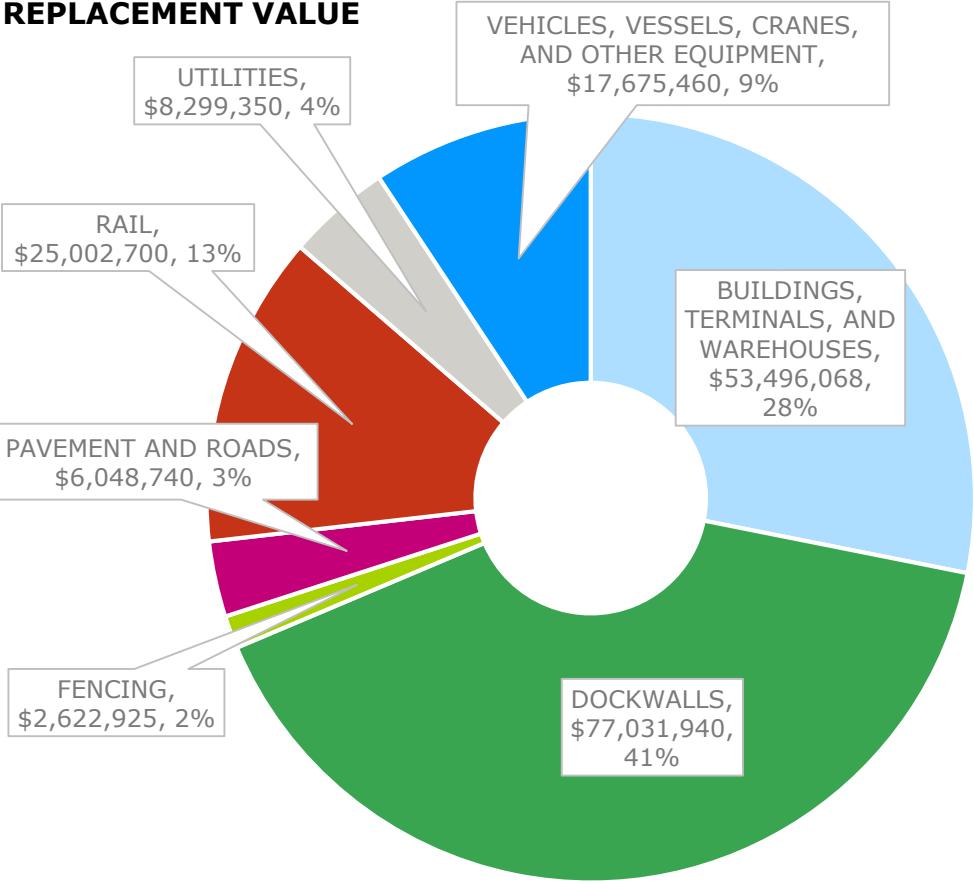


OVERVIEW OF PLAN DEVELOPMENT METHODOLOGY AND APPROACH

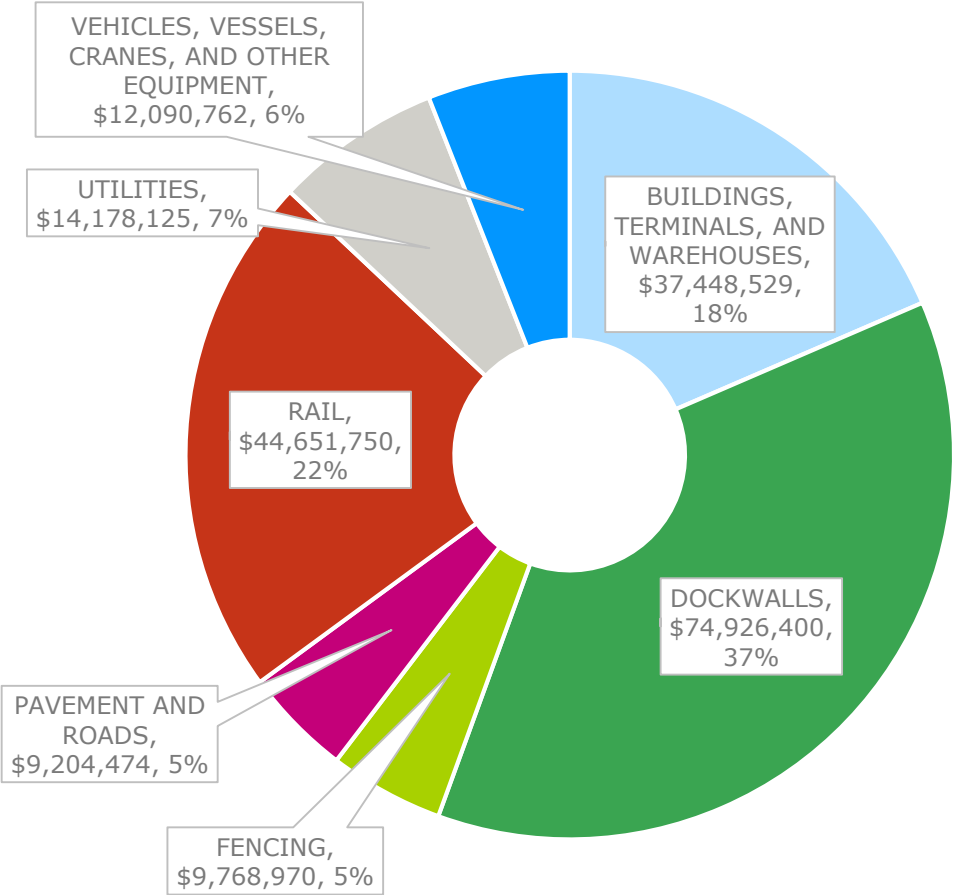


RENEWAL SUMMARY

REPLACEMENT VALUE

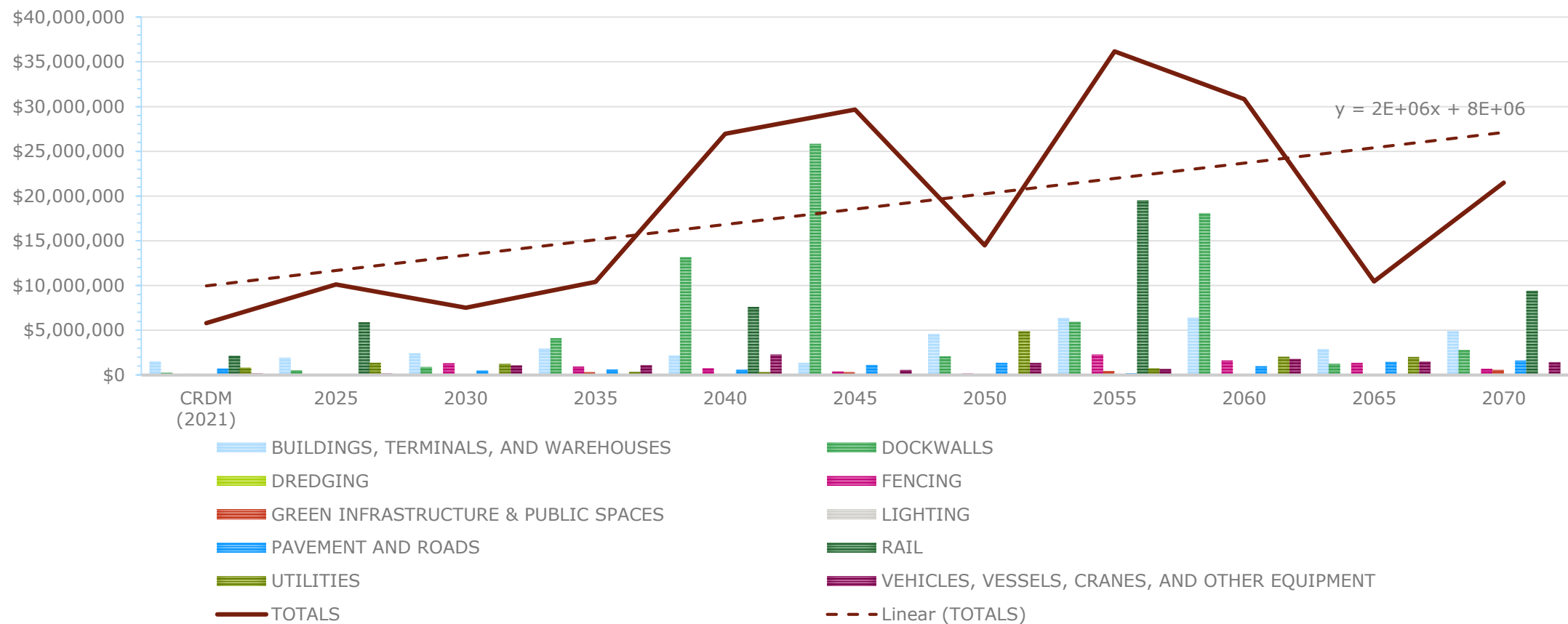


TOTAL RENEWAL COSTS THROUGH 2070



RENEWAL SUMMARY

CURRENT AND PROJECTED RENEWAL NEEDS



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



28%
Percent of Total
Asset Portfolio

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

KEY NOTES

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

DOCKWALLS

INVENTORY

33 Segments

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

REPLACEMENT VALUE

2021



41%

Percent of Total
Asset Portfolio

CURRENT CONDITION

2021

- 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.

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 VALUE

2021



2%
Percent of Total
Asset Portfolio

CURRENT CONDITION

2021

- Condition rating based on estimated remaining useful life.
- Decorative steel picket fencing in good condition.
- Most security fencing in fair to good condition with about 10% considered deficient.

RENEWAL NEED

50-Year



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

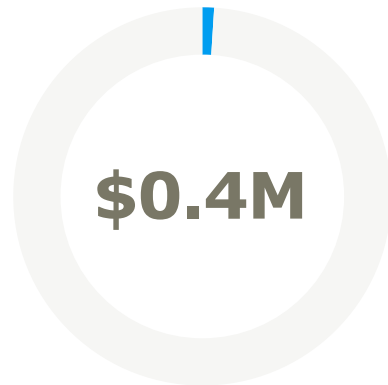
INVENTORY

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%

**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

2021



<1%

Percent of Total
Asset Portfolio

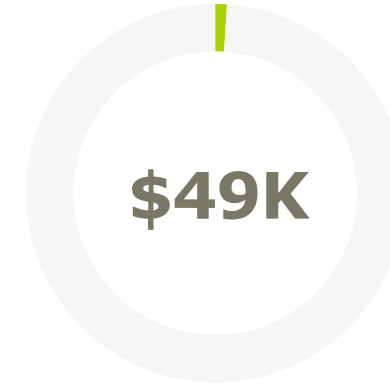
CURRENT CONDITION

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

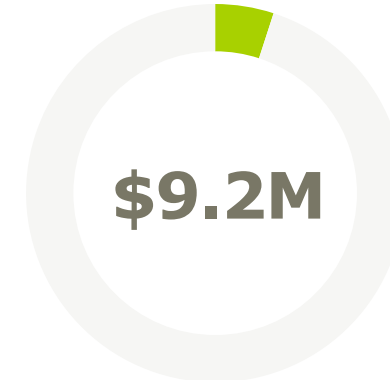
CURRENT CONDITION

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



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.

RAIL

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

REPLACEMENT VALUE

2021



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



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



9%

**Percent of Total
Asset Portfolio**

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



6%

**Percent of Total
Asset Portfolio**

KEY NOTES

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

KEY NOTES BY ASSET CATEGORY

Buildings, Terminals, & Warehouses

- 17 structures with shared and full renewal responsibilities.
- Includes pavement, lighting and green space in functional footprint of structure.

Dockwalls

- Many dockwalls coming to end of useful life over the next 50-years.
- Some may benefit from major rehabilitation at end of useful life to extend service.

Navigational Areas

- 11 areas to be monitored for dredging.
- Limited data available.
- Routine surveying recommended.

Fencing

- 8.5 miles of chain link and steel picket fencing.
- Prioritize fencing renewals based on function/purpose.

Green Infra. & Public Spaces

- 4 areas assessed independent of other assets.
- Land value not included in CRV.

Lighting

- Pole-mounted flood lighting, independent of street lighting.
- Limited asset data available.

Pavement & Roads

- Current conditions generally spread across lifecycle.
- Most pavement area rated as good to fair.
- About 17% in poor condition.

Rail

- 10 miles of rail and switches.
- Current rail mapping is dated and pending rail improvements for ag export project will require updates to inventory and renewal plan.

Utilities

- Includes water, storm sewer, sanitary sewer, dry fire line
- Current conditions show replacement of most of utility system over next 50-year is needed.
- Additional visual and electronic inspections required to refine RUL.

Vehicles, Vessels, Cranes, & Equipment

- 80% of equipment items in excellent or good condition.
- Plan for transition to electric vehicle fleet within the current 50-year renewal planning period.

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

