

Port Infrastructure Maintenance & Engineering Guide and Toolkit



Port Everglades

Ft. Lauderdale, Fl.

Professional Port Manager (PPM) Project

Presented to: American Association of Port Authorities (AAPA)

Submitted by:

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2026 Charlie Cohort



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BIOGRAPHY

Harris Hamid, P.E. is a public-sector executive with many years of experience across State, County, City, and Tribal Governments.

His career spans a range of departments to include public infrastructure construction / maintenance and engineering, capital program delivery, community development planning and zoning, building and permitting, housing development, environmental resource management, and code enforcement.

Mr. Hamid currently serves as:

- Director of Seaport Facilities Maintenance at Port Everglades, Broward County, Fl., where he is responsible for the operation, maintenance, and capital renewal of complex maritime infrastructure, including cruise terminals, passenger loading bridges, underground utilities, roadways, and port facilities.

Earlier in his career, Mr. Hamid served as:

- Executive Director of Tribal Community Development for the Seminole Tribe of Florida. In this role, he managed a large operating/capital budget and supervision of multiple departments supporting \$3.5 billion in Hardrock casino gaming, hospitality, tribal housing and infrastructure development.
- Director of Engineering and Community Development / City Engineer for the City of Oakland Park, Fl.
- Assistant City Engineer for the City of Tamarac, Fl.
- Senior Project Engineer with Florida Department of Transportation (FDOT), District Six, Miami, delivering major roadways, bridges, and public works projects.

Mr. Hamid holds a Master of Science in Civil Engineering from Florida International University and a Bachelor of Science in Civil Engineering from the University of Florida, and is a licensed Florida Professional Engineer.

ABSTRACT

Topic

In many ways, seaports function like municipalities, counties, or state governments, requiring strategic planning, budgeting, service delivery, and long-term infrastructure maintenance. Successful ports typically begin with a shared vision or charter, developed collaboratively by port leadership, governing bodies, and industry stakeholders. This vision guides the creation of a strategic plan that establishes measurable goals, capital projects, and community services. Once infrastructure projects are completed, ports must ensure that robust and sustainable maintenance programs are in place. The process repeats with the fundamental priorities and core functions, i.e. maintenance of infrastructure, remaining consistent over time.

A thorough and detailed maintenance program is essential for a seaport because it ensures the longevity and reliability of critical infrastructure such as docks, seawalls, terminals, and utilities that support daily operations. By proactively addressing wear and deterioration, ports can prevent costly emergency repairs and minimize disruptions to cargo movement and passenger services. Strong maintenance practices also safeguard safety and environmental compliance, reducing risks to workers, vessels, and surrounding communities. Additionally, well maintained facilities enhance a port's competitiveness by attracting shipping lines, tenants, and investors who rely on dependable infrastructure. Ultimately, a comprehensive maintenance program protects the port's financial investments while supporting long-term growth and sustainability.

Objective

The goal of this project is to provide seaports, of any size or business model, with an adaptable toolkit and a comprehensive framework of exhibits, for establishing an effective maintenance program. By doing so, ports can enhance the reliability and resilience of their infrastructure, mitigate risks related to unexpected breakdowns, and support both daily operations and long-term growth objectives. This initiative will guide facility managers through the essential nine steps of building a proactive maintenance program, one that emphasizes systematic planning, ongoing evaluation, and continuous improvement; ensuring that the port's assets remain in optimal condition to meet current and future demands. The comprehensive maintenance framework and toolkit will provide insight into developing:

- Staff Task Responsibilities and Assignments
- Private Vendor Contracts
- Automated Work Order Management System
- Budget/Five-Year Operational & CIP Plan/Requisitions/Government Purchase Card

- Work Orders One-Stop Shop
- Port Inventory Management
- Maintenance of Leased Properties
- Auditing Reports
- Port Strategic Plan/KPI's/ Weekly FM Status Reports

Approach/Methodology

This project outlines the development and implementation of a comprehensive maintenance program designed to strengthen the long-term sustainability of port infrastructure. The project emphasizes the importance of a work order database to track and prioritize tasks, along with budget tracking to align financial resources with operational needs. These products provide leadership with the data and structure necessary to make informed decisions regarding staffing, contracts, and capital planning. Ultimately, this project serves as a roadmap for other ports to implement as a proactive, efficient, and scalable maintenance program.

Audience Identification and Implications for Practice

The intended audience for this capstone project includes seaport authorities, port leadership, and government agencies responsible for infrastructure management. The deliverables developed through this project provide these stakeholders with practical strategies to address maintenance needs while aligning with long-term strategic objectives. By applying this framework, ports can improve operational reliability, reduce costs associated with emergency repairs, and extend the useful life of critical assets.

Reflections on Learning

By completing this capstone project, the author learned that despite their differences, seaports face common maintenance challenges that can be addressed through standardized solutions. The development of this comprehensive maintenance program demonstrated how systematic approaches, supported by tools and processes, improve both efficiency and sustainability. Through this project, the author gained deeper insight into the interconnection between strategic planning, capital projects, and maintenance operations, while providing a model that can benefit other ports and government entities.

INTRODUCTION

The toolkit here within, involving a nine-step maintenance program (Figure A) and accompanying exhibits, may be applied to any port, and is not specific to just Port Everglades. The exhibits provide most of the information necessary to complete each of the individual steps. Each port, especially smaller ports, can cherry pick from the various tasks and items which pertain to them and remove what is not applicable by reviewing their own infrastructure, business lines, staffing, budget, and regulatory responsibilities. Tasks or items that do not apply should be removed, while port-specific assets, services, and maintenance obligations should be added, if not already present in the exhibit. Staffing assignments, vendor support, work order systems, budgets, CIP planning, and performance measures may then be scaled to match the port's size and operational complexity. This allows the framework to remain consistent while giving each port the flexibility to create a maintenance program that fits its specific needs.

The exhibits are designed to be adapted for ports of different sizes, locations, and operational needs. For example, a port which does not operate passenger loading bridges or does not maintain water and sewer main utilities may remove those tasks from the provided exhibits. The completed exhibits are provided as examples that capture a broad range of possible maintenance responsibilities. Each port may select the tasks that apply, retain relevant areas of responsibility, and remove items that are applicable.

In summary, each port, regardless of size or business model, may begin by reviewing the nine-step framework against its own infrastructure, staffing, business lines, and maintenance obligations. Tasks shown on the various exhibits that do not apply should be removed, while port-specific responsibilities should be added. The exhibits may then be adjusted to reflect local assets, available staff, vendor support, budget capacity, and regulatory requirements. In this way, the program remains consistent in structure but flexible in application, allowing large, medium, and small ports to build a maintenance program that fits their own operational needs.

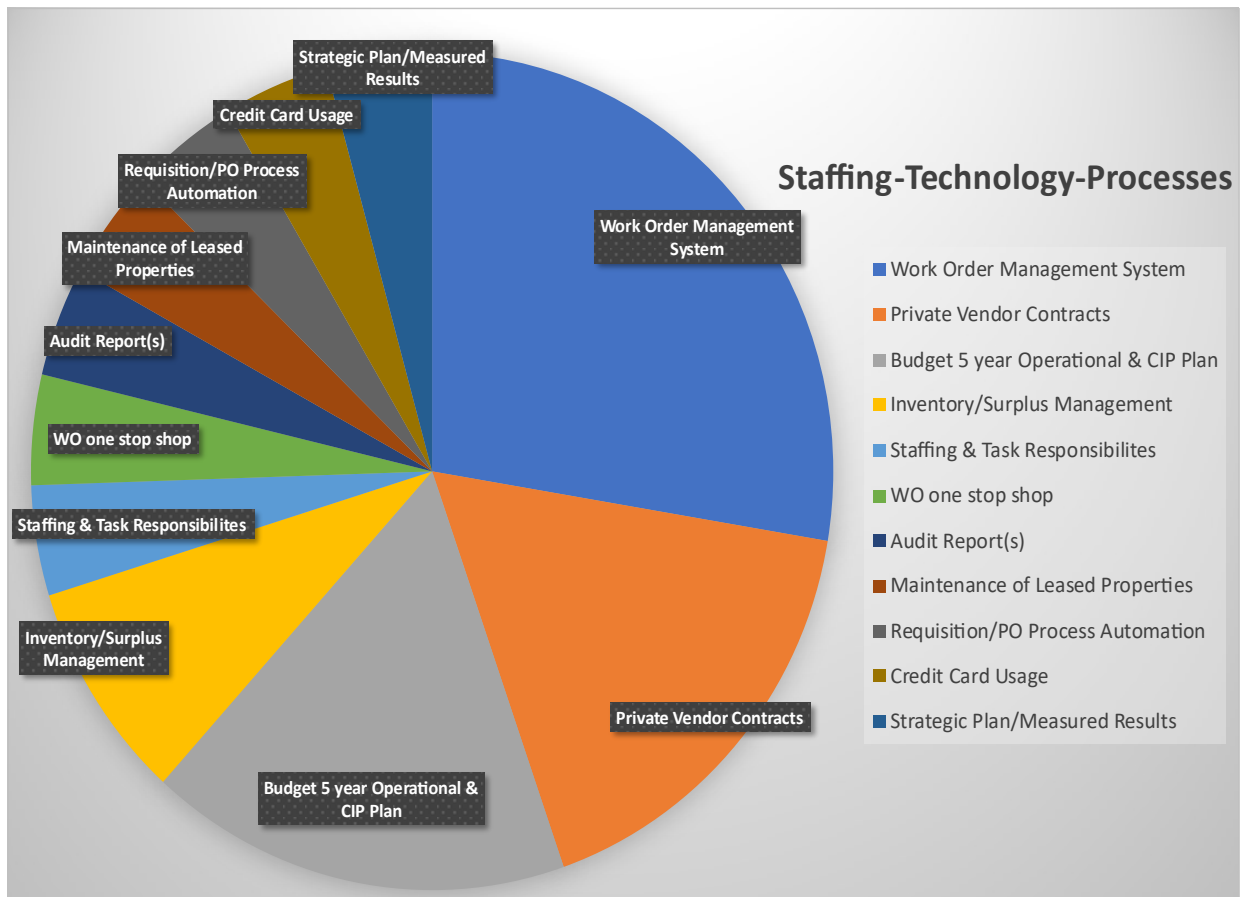


Figure A: Steps involved in an effective maintenance program

STEP 1A

LISTING OF TASKS AND RESPONSIBILITIES

The maintenance department carries out essential responsibilities that ensure safe, reliable, and efficient facility operations. Staff roles need to be clearly defined and aligned with individual skills, enabling effective performance of inspections, preventive maintenance, repairs, and accurate documentation. This structure strengthens accountability and maintains the overall reliability and safety of port facilities.

Listing all port maintenance staff task responsibilities (Exhibit 1A) provides clarity, structure, and accountability across the entire department. Clearly defined duties ensure that every team member understands their role in inspections, preventive maintenance, repairs, documentation, and customer service, which reduces confusion and overlap. This transparency also improves scheduling, training, and workload distribution, allowing supervisors to allocate resources where they are most needed. Additionally, clearly documented responsibilities make performance evaluation more objective and strengthen coordination with other port departments.

Exhibit 1A Sample Port Maintenance Tasks and Responsibilities may be modified to a specific port's requirements as such:

- **Start with the port's actual assets and services**
A cruise-heavy port may need tasks for passenger loading bridges, terminals, escalators, and baggage systems. A cargo-focused port may emphasize container yards, cranes, pavement, reefer plugs, lighting, stormwater systems, and tenant areas. A smaller marina or limited-service port may only need a simplified version of the same categories.
- **Remove tasks that do not apply**
If a port does not operate passenger loading bridges, cruise terminals, fuel facilities, or certain utility systems, those items can be deleted from the provided list of tasks.
- **Add local responsibilities that are unique to the port**
Some ports may maintain maintenance tasks associated with ferry terminals, fishing docks, rail connections, bulk cargo equipment, public boat ramps, ferry passenger areas, or security facilities. Those tasks and responsibilities should be added to the template.

Facilities Maintenance Listing of Tasks							
Building Maintenance Trades	Docks Trades	Electrical Trades	Water/Sewer and Stormwater Utility Trades	Vehicle & Equipment Trades	Mechanical Trades	Warehouse/Parts	Roadways/Bridges/Signs Trades
Remediation & Abatement	Dockside Asphalt/Concrete Repairs including Pot Holes	Electrical	Watermain breaks/repairs	Vehicles, Forklifts, Cranes, Heavy Equipment Repairs	HVAC Maintenance/Repairs & Replacement	Material Purchase	Pot Holes Temporary Fill-in (Cold Patch)
Roof Leaks Inspection	Seawall Repairs and Maintenance	Electronics	Water Meters	Remove & Replace Batteries & Tires	Trane Software- Energy Management System	Material Storage and Inventory	Pot Holes (Gravel Fill-in)
Roof Repair & Replacement	Fenders and Roller Bumpers	Electronic Signs Repair	Water Boxes	Fuel Vehicles and Equipment	Refrigeration Equipment	Receiving of Parts	Steel plate removal & setup
Carpentry and Locks/Keys	Ships Water Hook-Ups	Building Lights	Wastewater (Sewermain) Repairs	Equipment Inspections (scissor lifts, Boom lift, etc.)	Baggage Handling System	Issuance of Parts	Barricades/Jersey barriers relocation
Detex Alarm Boxes	Painting Bollards and Repairing/replacing Sea Wall Chains	Street Light Poles	Forcemain/Sewermain Breaks & Accessories	Vehicle & Equipment Parts	Gate Arms & Operators System	Water meter rental	Paint Traffic Stripes, Crosswalks, and Curbs
Canopy & Awning Repairs	Bollards	High Mast Lights Repairs	Lift Stations	Monitor, service, and repairs Light Plant & Generators	Fencing & Gates	Surplus	Static Signs repairs & Repl.
Carpet & Tile replacement		Light Poles repairs & Maintenance	Fire Hydrants	Road Service Calls			Wayfinding signs Maintenance & Replacem.
Ceiling Tiles & Bldg. Flooring and Cone Setup		Sound Systems & Podium	Backflow Preventers	Vehicle cleaning voucher			Create Signs and Lamination
Dry Wall Repair & Fans Dryout		Generators Inspection/Monitoring/Repairs/Fueling	Backflow Preventors Certifications & BSI Online	Heavy Equipment Operation			Street Sweeper
Automatic Doors		Fiber Optic Cable	FDEP Regulatory Compliance				Fencing & Gates
Overhead Doors		Traffic Lights Outage Notifications	Drinking Water and Boil Water Notice Compliance				Guardrail Repairs
Gate Arms & Operator Systems		Electronic Signs	Bacteria and chlorine level Monitoring & Testing				
Checkpoint and Guard			Lead & Copper Compliance				
Windows & Doors Repair & Replacement Services			UDF / Flushing Fire Hydrants and dead ends				
Welding			Valve exercising and replacement program				
Metal Fabrication			Stormwater Drainage Systems				
Paint Buildings, Walls, Doors, Frames and			Swale cleaning & cutting				
Elevators			Stormwater Drainage structure Cleaning including swales				
Escalators			Water Pump System				
Fire Sprinklers			Stormwater SFWMD Permits Processing & Monitoring				
Fire Alarms			Drainage Regulatory Compliance				
Fire System Backflows							
Fire Extinguishers							
BDA-Public Safety Radio Enhancement Systems							
Tables & Chairs relocation, etc.							
Propane & Gas Cylinders Fill up							
Window Cleaning services							
Porta Potty rentals							
Emergency building exit signs and lights maintenance							
Loading Bridge Trades	Plumbing Trades	Sanitation/Custodial Services Trades	Landscaping				
Loading Bridges Maint. & Repair	Building Plumbing	Custodial Services	Lawn Care, Groundskeeping, Green Space & Tree Maintenance				
	Water Fountains, Eye Wash Stations	Garbage Pick-up	Tree Removal, Relocations and Trimming				
		Trash Collection System					

Exhibit 1A: Sample Port Maintenance Tasks and Responsibilities

STEP 1B

PRIOTIZING TASKS AND RESPONSIBILITIES

Each port should rank maintenance tasks priorities by weighing risk, urgency, operational impact, and available resources.

Levels of priority (top to bottom):

- A port may first identify tasks that affect life safety, security, regulatory compliance, environmental protection, and critical operations, because these items require immediate attention.
- A port should rank tasks that could disrupt cargo movement, cruise operations, tenant activity, utilities, access roads, or revenue-generating facilities.
- Lower-priority tasks, such as routine repairs, cosmetic improvements, or noncritical enhancements, can be scheduled after urgent and high-impact work is addressed.

This approach allows the maintenance department to focus limited staff, vendor support, and funding on the work that keeps the port operational and supports long-term asset reliability.

Figure 1B presents a sieve analysis that helps categorize the varying priorities of an individual port's operational needs. It visually separates these needs into distinct levels of importance. This breakdown allows port leadership to clearly understand which tasks require immediate attention. It also highlights areas that may need long-term planning or resource allocation. Overall, the analysis serves as a practical tool for aligning maintenance efforts with the port's strategic priorities.

Sieve Analysis of 80 Port Infrastructure Issues

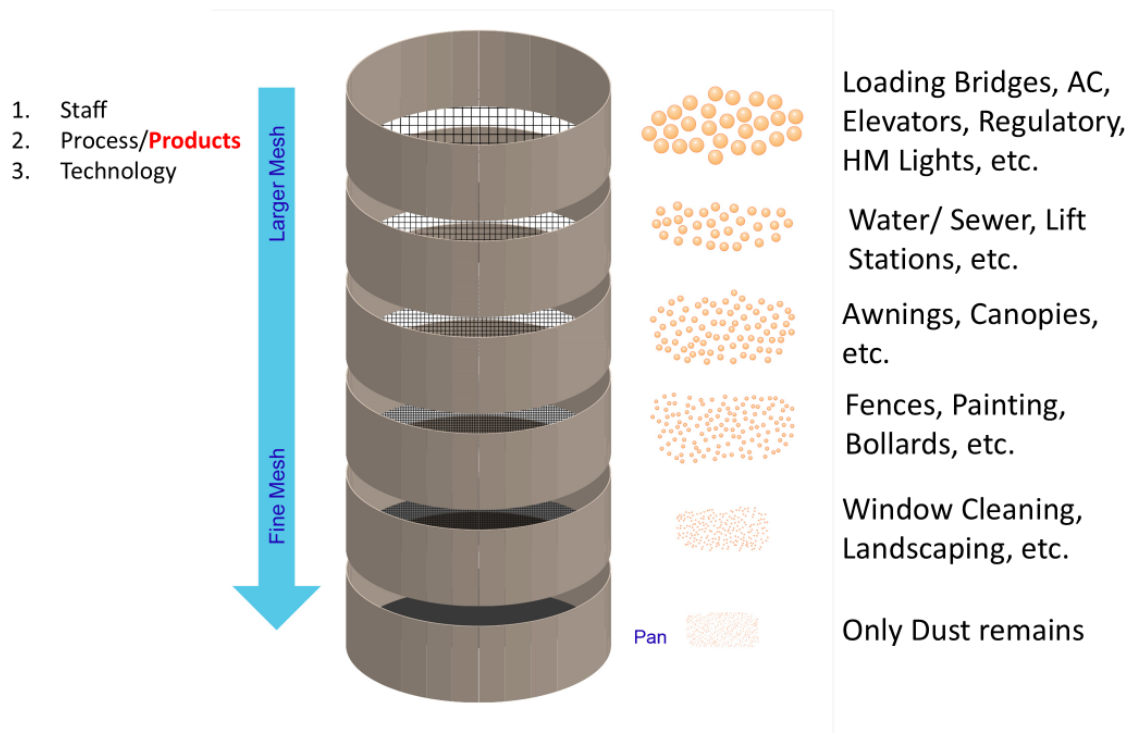


Figure 1B: Sample Task priorities based on operational needs

STEP 1C

ASSIGNING OF TASKS AND RESPONSIBILITIES

Exhibit 1C Sample Staff Assignment of Tasks and Responsibilities, provides a detailed breakdown of all port maintenance tasks assignments. It shows how responsibilities are distributed across facilities maintenance staff of appropriate skill sets and trade licenses, i.e. Supervisors and Project Managers. This distribution ensures that maintenance duties are clearly organized and effectively managed.

Exhibit 1C and Figure 1D may be modified and scaled to a specific port's requirements and size as such:

- **Smaller ports** may use a lean structure with a facilities or maintenance manager, one or more general maintenance technicians, an administrative or work order coordinator, and contracted vendors for specialized trades.
- **Medium size ports** may add maintenance supervisors, dedicated trade technicians, a project manager or contract administrator, inventory support, and customer service or work order coordination.
- **Large size ports or multi-business-line ports** may require dedicated teams for cruise, cargo, energy, utilities, terminals, roads, marine structures, buildings, and CIP planning to include a director-level maintenance leader, assistant directors or division managers, multiple supervisors, licensed trades staff, project managers, contract administrators, warehouse support, budget support, and administrative staff

Facilities Maintenance Points of Contact for Port Maintenance Issues/Work Orders							
Supervisor #1 Electrical Supervisor	Supervisor #2 Loading Bridge & Welding Supervisor	Supervisor #3 HVAC Supervisor	Supervisor #4 Plumbing & Carpenter Supervisor	Supervisor #5 Fendering & Painting Supervisor	Supervisor #6 Vehicles & Equipment Supervisor	Supervisor #7 Warehouse Supervisor	Supervisor #8 Building Supervisor
Electrical	Loading Bridges Maint. & Repair	HVAC Maintenance/Repairs & Replacement	Building Plumbing	Daily Building Maintenance	Vehicles, Forklifts, Cranes, Heavy Equipment Repairs	Material Purchase	Custodial Admin, ID Office, PW, HM, Crane, LH
Electronics	Welding	HVAC Software- Energy Management System	Water Fountains, Eye Wash Stations	Fenders and Roller Bumpers	Remove & Replace Batteries & Tires	Material Storage and Inventory	Ships Water Hook-Ups and Terminal Garbage Pick-up
Electronic Signs Repair	Metal Fabrication	Refrigeration Equipment	Watermain Repairs	Paint Buildings, Walls, Doors, Frames and hallways	Fuel Vehicles and Equipment	Receiving of Parts	Sweeper and Heavy Equipment Operation
Building Lights	Steel plate removal & setup	Admin/Port ID Bldg. Maintenance Mechanics	Water Meters	Paint Traffic Stripes, Crosswalks, and Curbs	Equipment Inspections, Vehicle & Equipment Parts	Issuance of Parts	Administration Building
Street Light Poles	Miscellaneous as needed	Miscellaneous as needed	Wastewater (Sewermain) Repairs	Tables & Chairs relocation, etc.	Monitor, service, and repairs Light Plant & Generators	Water meter rental	Building #2
High Mast Lights Repairs			Lift Stations	Create Signs and Lamination	Road Service Calls	Surplus	Miscellaneous as needed
Sound Systems & Podium			Fire Hydrants	Propone & Gas Cylinders Fill up	Lawn Care, Groundskeeping, Green Space & Tree Maintenance	Miscellaneous as needed	
Generators Inspection & Monitoring			Backflow Preventers	Painting Bollards and Repairing/replacing Sea Wall Chains	Swale cleaning & cutting		
Fiber Optic Cable			Stormwater Drainage Systems	Static Signs repairs & Repl.	Vehicle cleaning voucher		
Traffic Lights Outage Notifications			Roof Leaks Inspection	Miscellaneous as needed	Barricades/Jersey barriers relocation		
Electronic Signs			Carpentry and Locks/Keys		Porta Potty relocation		
Baggage Handling System			Detex Alarm Boxes		Pot Holes (Gravel Fill-in)		
Automatic Doors			Canopy & Awning Repairs		Miscellaneous as needed		
Overhead Doors			Ceiling Tiles & Bldg. Flooring and Cone Setup				
Checkpoint and Guard Booths			Dry Wall Repair & Fans Dryout				
Gate Arms & Operators System			Pot Holes Temporary Fill-in (Cold Patch)				
Fencing & Gates			Fire Extinguishers				
Miscellaneous as needed			Cone setup & Miscellaneous				
Construction P.M. #1 Water / Sewer / Stormwater	Construction P.M. #2 Electrical/HM Lights/Roadways/Roots	Construction P.M. #3 Loading Bridges/HVAC	Construction P.M. #4 Elevators/Escalators/Fire Prevention	Construction P.M. #5 Fendering/Signs/Painting	Construction P.M. #6 Permitting/Regulations		
Watermain Repairs & Accessories	Dockside, street, yard Asphalt/Concrete Repairs including Pot Holes	Loading Bridges repairs and maintenance	Elevators - Oracle Ph: 800-526-6115	Bond Report monitoring	FDEP Regulatory Compliance		
Forcemain/Sewermain Breaks & Accessories	High Mast Lights repairs & maintenance	HVAC Repairs & Replacement to include Cooling system treatment	Escalators - Oracle Ph: 800-526-6115	Fendering Repairs	Drinking Water and Boil Water Notice Compliance		
Backflow Preventors Certifications & BSI Online	Wayfinding signs Maintenance & Replacem.	Electrical/Fiber Optic Construction & Repairs	Fire Sprinklers - NFP Ph: 877-598-5824	Painting Services	Bacteria and chlorine level Monitoring & Testing		
Lift Station Repairs and Maintenance	Equipment inspections (scissor lifts, Boom lift, etc.)	Sound System Repair & Replacement	Fire Alarms	Window Cleaning services	Lead & Copper Compliance		
Water boxes and Meters Repairs & Replacement	Dockside, Street and Yard Striping	Seawall Repairs and Maintenance	Fire System Backflows	Electronic Signs Repairs and Maintenance	UDF / Flushing Fire Hydrants and dead ends		
Fire Hydrants Repairs and Replacement	Remediation & Abatement	Building/Garage Plumbing Repairs & Maintenance	Fire Extinguishers	Overhead doors, Metal & Automatic Doors Services, Gate Arms & Operator Systems	Valve exercising and replacement program		
Awning & Canopies repairs	Guardrail Repairs and Static sign repairs	Light Poles repairs & Maintenance	BDA-Public Safety Radio Enhancement Systems	Windows & Doors Repair & Replacement Services	Water Pump System		
Generators Repair & Replacement & Fueling	Baggage Handling System	Miscellaneous as needed	Miscellaneous as needed	Cleaning Services (Outside Bathroom)	Stormwater SFWMD Permits Processing & Monitoring		
Tree Removal, Relocations and Trimming	Roof Repair & Replacement			Fencing & Gates and Dockside Bollards.	Drainage Regulatory Compliance		
Trash Collection System	Miscellaneous as needed			Carpet & Tile replacement, and Rental of Porta Potty.	Watermain Breaks & Accessories		
Stormwater Drainage structure Cleaning including swales				Emergency building exit signs and lights maintenance	Miscellaneous as needed		
Sewage dumping, etc.				Miscellaneous as needed			

Exhibit 1C: Sample Staff Assignment of Tasks and Responsibilities

STEP 1D

DEVELOPMENT OF ORGANIZATION CHART

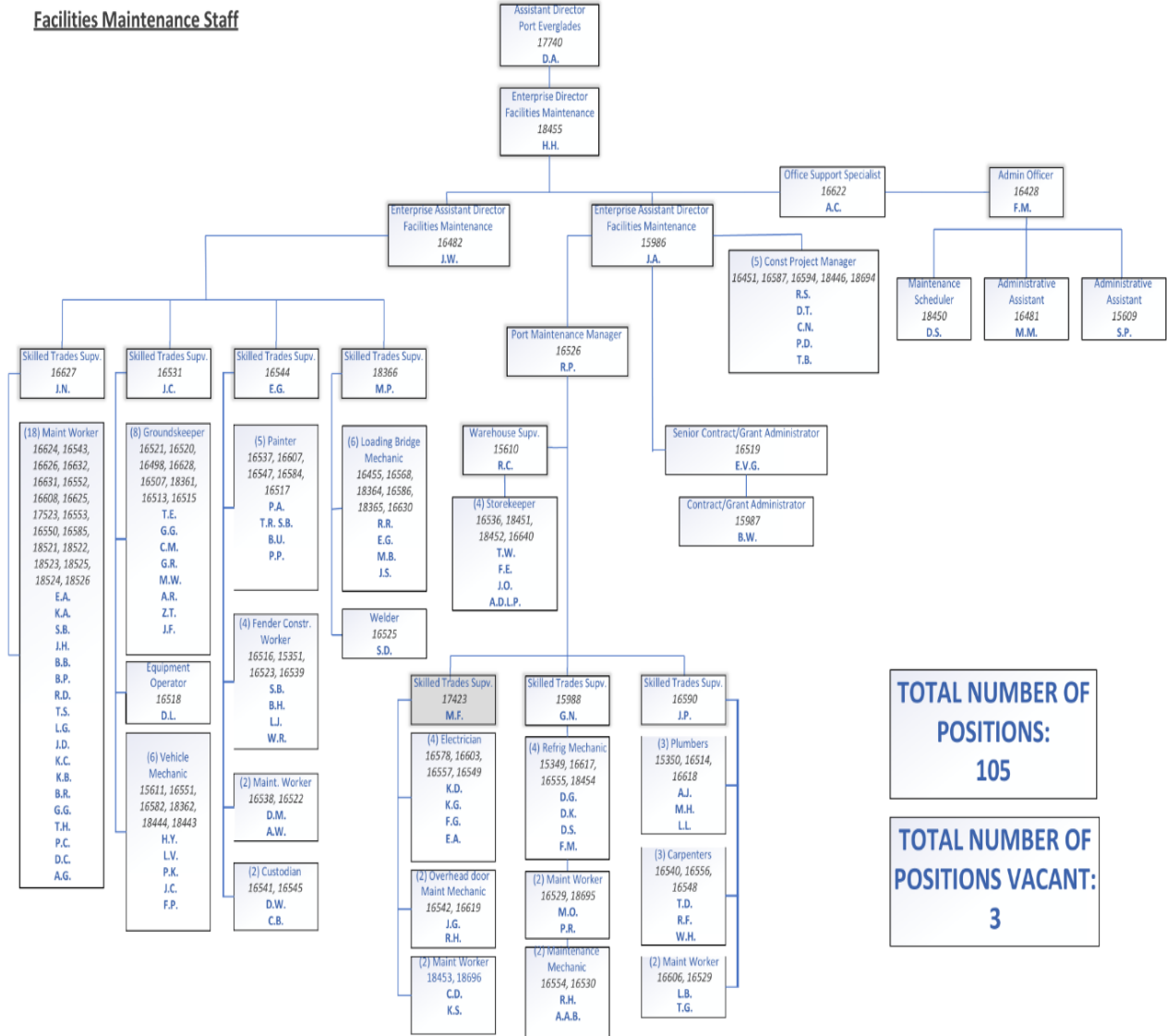


Figure 1D: Organization Chart

A Facilities Maintenance organizational chart (Figure 1D) should be created after a complete listing of tasks and responsibilities (Exhibit 1A) and initial assignments (Exhibit 1C) have been fully developed and prioritized. The organization chart may include all current as well as any vacant positions needed to ensure accuracy and alignment of tasks and responsibilities.

STEP 2

PRIVATE VENDOR CONTRACTS

A typical port maintenance work order (Figure 2) may be completed either by in-house facilities maintenance staff or by private contracted vendors, depending on the nature of the task. Routine repairs and preventive maintenance activities are often handled internally, allowing in-house staff to respond quickly and efficiently. More specialized or large-scale tasks, however, may require the expertise of contracted vendors who provide services beyond the department's technical capabilities or time. This combined approach ensures that all maintenance needs, whether simple or complex, are addressed promptly. Ultimately, leveraging both internal staff and private vendors creates a flexible, reliable, and cost-effective maintenance operation for any port.

Work Order Process

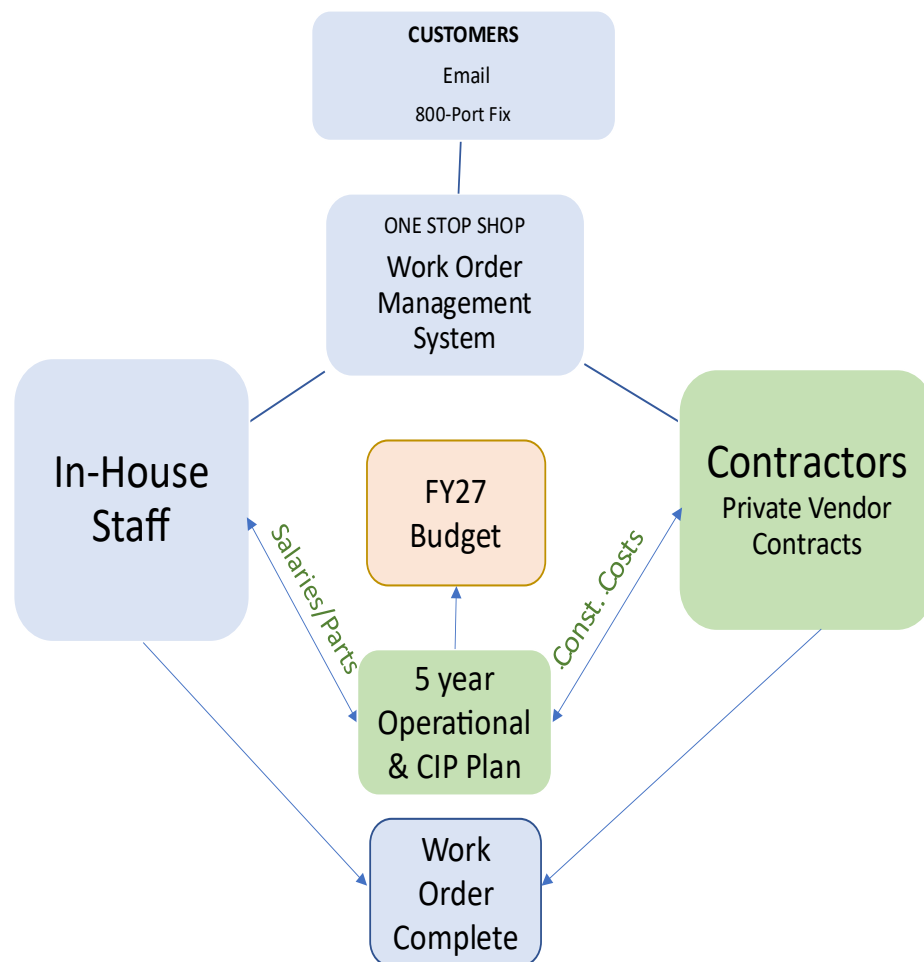


Figure 2: Flow of work orders from calling in a problem to completion

Vendor contract management supports specialized work beyond in-house capabilities. The department's project manager(s) will oversee contractor performance, ensure compliance with contract terms, schedule work effectively, and maintain cost control. Through regular coordination, vendor partnerships need to remain aligned with operational needs and requirements.

Vendor contract management includes establishing, overseeing, and evaluating agreements with third-party service providers (contractors) to supplement in-house maintenance capabilities. This task ensures that services such as specialized repairs, system inspections, and special projects are performed in compliance with contract terms and performance standards. The department must review vendor performance regularly, ensure timely contract renewal, procurement compliance, and alignment with organizational needs.

Listing all private contractors (Exhibit 2A), that support the port maintenance department, provide clarity and organization across the entire operation. A comprehensive contractor roster ensures that staff can quickly identify which vendor is responsible for specific systems, such as fire protection, elevators, HVAC, electrical, marine structures, etc., thus reducing delays and improving response times to complete work orders. Overall, documenting all private contractors supports smoother workflows and more reliable maintenance operations, especially in infrastructure failure emergencies.

Exhibit 2A Private Vendor Contracts may be modified to a specific port's requirements as such:

- **Vendor contracts based on in-house capability**

Ports with electricians, mechanics, plumbers, and equipment technicians may complete more work orders internally. Ports with limited staff should identify critical services that require standing vendor contracts, such as HVAC, elevators, fire protection, paving, marine structures, and emergency repairs.

Facilities Maintenance Contractor Agreements							
Supervisor #1 Electrical Supervisor	Supervisor #2 Loading Bridge & Welding Supervisor	Supervisor #3 HVAC Supervisor	Supervisor #4 Plumbing & Carpenter Supervisor	Supervisor #5 Fendering & Painting Supervisor	Supervisor #6 Vehicles & Equipment Supervisor	Supervisor #7 Warehouse Supervisor	Supervisor #8 Building Supervisor
MSC Industrial (EXP. 12/5/25) \$300,155.83 avail Bal OPN2124942B1_2 (No Allowances)	Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail.Bal OPN2128638G1_1 (No Allowances)	Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail.Bal OPN2128638G1_1 (No Allowances)	World Petroleum Corp. (EXP. 8/29/25) \$317,277.94 avail Bal TRN2124225B1_1	Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail Bal OPN2128638G1_1 (No Allowances)	Tiresoles of Broward (TT&RS) (EXP. 7/1/2029) \$3,798,964.87 avail. Bal TRN2128832G1_1 (No Allowances)	IMPROVYZE LLC, (EXP. 8/8/26) \$162,710.4 GEN2128152B1_1 (No Allowances)	Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail.Bal OPN2128638G1_1 (No Allowances)
Graybar Electric(EXP. 12/5/25) \$659,652.87 avail bal OPN2124942B1_3 (No Allowances)	Hydraulic Supply Co. (EXP. 1/16/26) \$76,755.5 Avail. Bal OPN2123391B1_2 Allowances: Expedited/Rush Shipping	REXEL USA, INC. (Mayer) (EXP. 12/5/25) \$755,459.94 avail bal	Tom Evans (SLSP) (EXP. 2/20/26) \$1,548,228.5 avail Bal IND2123546B1_2 (No Allowances)	MSC Industrial (EXP. 12/5/25) \$300,155.83 avail Bal OPN2124942B1_2 (No Allowances)	Boulevard Tire Cent. (TT&RS) (EXP. 7/1/2029) \$4,353,127.66 avail. Bal TRN2128832G1_2 (No Allowances)	Sandra L Campbell (Chemical Products, wont renew in February) (EXP. 2/22/26) \$156,967.72 OPN2127611B1_1 (No Allowances)	Fastenal Company (MRO) (EXP. 11/08/26) Avail Bal \$918,922.15 OPN2128638G1_2 (No Allowances)
World Electric Supply, Inc. (EXP. 12/5/25) \$577,715.89 avail bal OPN2124942B1_7 (No Allowances)	Port Consolidated (EXP. 4/25/26) \$33,472,117.53 avail. Bal TRN2124222G1_1 (No Allowances)	MSC Industrial (EXP. 12/5/25) \$300,155.83 avail Bal OPN2124942B1_2 (No Allowances)	Plusco Supply (SPP) (EXP. 6/6/26) \$154,182.01 avail Bal OPN2127851B1_1 Allowances: Freight/Shipping: \$19,223.11	MSC Industrial (EXP. 1/16/26) \$56,814.24 avail Bal OPN2123391B1_3 Hoses, Assemblies and Fittings Allowances: Expedited/Rush Shipping Charges \$2,000	M & H AUTOMOTIVE INC (EXP. 5/19/2026) \$1,170,389.15 avail. Bal TRN2124902G1_4 (No Allowances)	Sandra L Campbell (EXP. 6/17/26) \$199,113.41 BLD2128060B1_1 (No Allowances)	MSC Industrial (EXP. 12/5/25) \$300,155.83 avail Bal OPN2124942B1_2 (No Allowances)
REXEL USA, INC. (Mayer) (EXP. 12/5/25) \$755,459.94 avail bal OPN2124942B1_8 (No Allowances)	Graybar Electric(EXP. 12/5/25) \$659,652.87 avail bal OPN2124942B1_3 (No Allowances)	Carrier Enterprise LLC (Exp. 5/22/26) \$857,977.47 avail Bal BLD2125268B1_1 (No Allowances)	Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail Bal OPN2128638G1_1 (No Allowances)	TEN-8 FIRE & SAFETY LLC (EXP. 1/16/26) \$16,687.42 avail Bal OPN2123391B1_4 Hoses, Assemblies and Fittings	MSC Industrial (EXP. 12/5/25) \$300,155.83 avail Bal OPN2124942B1_2 (No Allowances)	The Tools Man Industrial Supply (EXP. 6/17/26) \$39,817.50 BLD2128060B1_2 (No Allowances)	FORTILINE INC (EXP. 1/16/26) \$10,263 avail Bal OPN2123391B1_1 Hoses, Assemblies and Fittings Allowances: Expedited/Rush Shipping Charges \$4,000
Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail.Bal OPN2128638G1_1 (No Allowances)	PETROCHOICE LLC (EXP. 8/26/26) \$61,304.79 TRN2129700B1_1 (No Allowances)	Blizzard Air Conditioning LLC (Exp. 5/22/26) \$6,195,519.32 avail Bal BLD2125268B1_2 (No Allowances)	Peifer Safe & Lock (Cybl) (EXP. 5/06/27) \$1,203,635.2 avail. bal OPN2128693Q1_1 (No Allowances)	Hydraulic Supply Co. (EXP. 1/16/26) \$76,755.5 Avail. Bal OPN2123391B1_3 Hoses, Assemblies and Fittings Allowances: Expedited/Rush Shipping Charges \$3,750	Chin Diesel, INC (EXP. 9/4/2025) Avail Bal \$291,240 BLD2128370B1_1 (No Allowances)	Chin Diesel, INC (EXP. 9/4/2025) Avail Bal \$291,240 BLD2128370B1_1 (No Allowances)	H84 EXPORTS LLC Expires 02/06/26 \$45,000 BLD2128768B1_1 (No Allowances)
Fastenal Company (MRO) (EXP. 11/08/26) Avail Bal \$918,922.15 OPN2128638G1_2 (No Allowances)	Fluid Control Spec. (DeZ/A V&P) (EXP. 11/26/25) \$395,187.93 avail bal IND2125018Q1_1 (No Allowances)	Johnstone Supply (Exp. 5/22/26) \$1,675,866.93 avail Bal BLD2125268B1_3 (No Allowances)	FJ Nugent & Assoc. (SLSP/PR) (EXP. 2/20/26) \$443,118.95 avail. bal IND2123546B1_3 (No Allowances)	FORTILINE INC (EXP. 1/16/26) \$10,263 avail Bal OPN2123391B1_3 Hoses, Assemblies and Fittings Allowances: Expedited/Rush Shipping	Lawn Care, Groundskeeping, Green Space & Tree Maintenance	Fastenal Company (MRO) (EXP. 11/08/26) Avail Bal \$918,922.15 OPN2128638G1_2 (No Allowances)	Veer Industries and General Contracting LLC Expires 02/06/26 \$133,789.93 BLD2128768B1_2 (No Allowances)
	Adelte Technologies, Inc. 12/11/25 \$1,113,310.26 TRN2126799B1_1 Allowances: Miscellaneous Parts and Materials \$466,950.22	Fastenal Company (MRO) (EXP. 11/08/26) Avail Bal \$918,922.15 OPN2128638G1_2 (No Allowances)	Fastenal Company (MRO) (EXP. 11/08/26) Avail Bal \$918,922.15 OPN2128638G1_2 (No Allowances)	Fastenal Company (MRO) (EXP. 11/08/26) Avail Bal \$918,922.15 OPN2128638G1_2 (No Allowances)		Grainger (MRO) (EXP. 11/08/26) \$2,758,776.2 avail.Bal OPN2128638G1_1 (No Allowances)	
Construction P.M. #1 Water / Sewer / Stormwater	Construction P.M. #2 Electrical/HM Lights/Roadways/Roofs	Construction P.M. #3 Loading Bridges/HVAC	Construction P.M. #4 Elevators/Escalators/Fire Prevention	Construction P.M. #5 Fendering/Signs/Painting	Construction P.M. #6 Permitting/Regulations		
Madsen-Barr (eir) 03/12/25 \$2,130,228.68 PNC2122870B1_1	Miller Electric 12/31/25 \$1,876,654.66 BLD2126700B1_4 Misc. Parts, Materials and Equip. Rental \$163,512.37	ADELTE 12/11/25 \$1,113,310.26 TRN2126799B1_1 Allowances: Miscellaneous Parts and Materials \$466,950.22	Oracle Elevator 7/31/26 \$630,004.29 BLD2127645B1_1 Allowances: Parts and Materials \$80,500.3 Specialized Subcontractors \$65,617	COAST TO COAST GARAGE DOOR LLC 9/19/25 \$13,733,198.25 BLD2123798B1_1 Allowances:	Specialty / Environmental Designers		
WSD Contracting 10/7/25 \$19,788 PNC2127866B1_1 Non Broward County Permits and Fees 1,000 Landscape Restoration \$1,000	Graybar Electric 12/5/25 \$659,652.87 OPN2124942B1_3 (No Allowance)	Graybar Electric 12/5/25 \$659,652.87 OPN2124942B1_3 (No Allowance)	BROWARD FIRE EQUIPMENT & SERVICE INC 11/11/25 BLD2128306B1_1 \$129,398.74 Allowances:	Orato Corp 10/28/25 \$207,524.41 BLD2126559B1_1 (No Allowances)			
HANS JOHNSON 12/31/26 \$246,563.14 IND2126554B1_1 Allowance: Parts and Materials \$45,459.86 Permits, Fees and Licenses \$319.44	Rexel USA 12/5/25 \$1,045,474.03 OPN2124942B1_5 (No Allowance)	World Electric 12/5/25 \$577,715.89 OPN2124942B1_7 No Allowances	BLACK FIRE PROTECTION, INC. 12/9/25 BLD2128953B1_2 \$2,277,528.31	Properties of Elegant Distinction 9/13/25 \$303,354.7 BLD2126003B1_1 Allowances: Parts and Materials			
Trio Develop. 6/1/26 \$11,254,702.77 PNC2122386B1_1 Allowance: Permits: \$79,754.5 Parts and Materials: \$127,042.51 FPL: \$120,457.08	CONCRETE WORKS & PAVING, INC. 06/20/27 \$2,336,743.75 PNC2129632B1_1 Allowances: Parts and Materials \$60,000	Trane US, Inc. 5/1/26 BLD2125602B1_1 \$8,985,896 (Rental) Allowances: Permit Fees: \$45,000	Bass United 8/26/25 \$254,972.81 BLD2125598B1_2 Allowances: Permits & Fees, Engineering Drawings,	Over the top Window Cleaning Inc 10/10/25 \$252,279 BLD2124749B1_1 (No Allowances)			
Cliff Berry Inc. 8/23/25 \$80,605.4 OPN2127809B1_1 Allowance: Equipment and Material \$4,644	Safety Zone Specialists Inc. 12/15/25 \$213,618.5 OPN2125455B1_1 (No Allowances)	Trane US, Inc. 1/23/26 BLD2124845B1_1 \$7,059,545.77 Allowances: Parts: \$152,087.27	WSA Systems 9/30/25 \$683,070.73 BLD2122413B1_1 Allowances: Miscellaneous Parts and Materials \$190,346.73	Mannington Commercial 8/9/27 \$138,414.15 BLD2129059G1_3 (No Allowances)			
Hudson Pump 1/5/26 \$775,664.7 OPN2126358Q1_1 Allowance: Specialized Sub Contracting Services Unknown	Advanced Roof. (Maint) 7/7/26 \$651,255.27 BLD2121366B1_1 Allowances: Parts and Materials: \$55,327.35	Southwest Engineers 3/31/26 \$71,680 BLD2128352B1_1 Allowances: Parts: \$18,000	Johnson Controls 9/30/25 \$1,701,236.72 BLD2123500A1_1 (No Allowances)	Friendly John Inc. 3/11/26 \$211,447.48 OPN2125445B1_1 (No Allowances)			
Champion Controls 3/13/25 \$3,096,283.35 PNC2122960B1_1 Allowance: Materials and Equipment \$42,578.68	CONCRETE WORKS & PAVING, INC. 06/20/27 \$2,336,743.75 PNC2129632B1_1 Allowances: Parts and Materials \$60,000	Carrier Enterprise LLC, 5/22/26 \$857,977.47 BLD2125268B1_1 (No Allowances)	BDA-Public Safety Radio Enhancement Systems	MCJ PROFESSIONAL CLEANING SERVICES, CORP 2/28/26 \$947,279.59 2121632P1_13 Allowances: Parts and Materials \$2,411.62			
Fortiline Inc 11/11/25 \$124,919.68 BLD2128422B1_1 (No Allowances)		Blizzard Air Conditioning LLC 5/22/26 \$6,195,519.32 BLD2125268B1_2 (No Allowances)					

Exhibit 2A – Private Vendor Contracts

STEP 3

WORK ORDER MANAGEMENT SYSTEM

The work order management system provides a centralized platform for submitting, tracking, and completing maintenance work order tasks across all facilities. It ensures that work is prioritized based on urgency, safety, and operational impact while providing transparency for requesters and FM staff. The system documents labor hours, materials used, and completion timelines, which support analytical data and reporting for continuous improvement initiatives.

The selection of an appropriate seaport asset management software is a critical step in the effectiveness of a long-term sustainable port maintenance program. Each software platform offers distinct advantages, with capabilities ranging from simple work order processing to full enterprise asset lifecycle planning. The differences exist in system complexity, GIS integration, inventory controls, vendor management, and suitability for large infrastructure environments such as seaports.

The two types of facilities maintenance software are:

- CMMS (Computerized Maintenance Management System) - manages maintenance operations, work orders, preventive maintenance schedules, asset histories, spare parts inventory, and compliance documentation. (less expensive)
- EAM (Enterprise Asset Management) system - does everything a CMMS does, and extends to cover the full maintenance asset lifecycle, procurement, commissioning, depreciation, total cost of ownership, and surplus planning. (more expensive)

CMMS focuses on day-to-day maintenance operations, whereas EAM covers the full lifecycle and strategic management of assets, integrating maintenance with broader business processes

Ports should choose a work order management system based on size, budget, staffing, complexity, and future growth needs:

- **Smaller size ports** may not need to begin with an expensive (EAM) system. They can start with a lower-cost basic (CMMS) platform, such as MaintainX, UpKeep, FMX, etc., which will provide basic work order management and inventory control.
- **Medium size ports** may use a more formal CMMS version from the same above vendors to include additional capabilities for mobile work orders, preventive maintenance scheduling, asset records, parts inventory, vendor tracking, and basic reporting. This gives the port enough ability to move from reactive maintenance to planned maintenance without overbuilding the system.

- **Larger ports** may consider an (EAM) platform, which is more costly, such as IBM Maximo, Infor EAM, Cityworks, AssetWorks, etc. because it supports the full asset lifecycle planning, including capital planning, long-term asset performance and GIS integration.

Print Date: 3/2/2021 3:05:25PM

FM Work Orders Open More Than 0 days

Division: FM

Supervisor Name - Electrical Supervisor

Type of work order	Location	Work Order Description & Phase #	Work Order /	Date Created	Phase Status	Days Open	Est. Date to Complete	Notes Log
11 ELECTRICAL	KING OCEAN SERVICES LIMITED (CAYMAN ISLANDS), INC. LEASE - SOUTHPORT BERTHS 7-8	002 (TROUBLESHOOT A PROBLEM WITH AN UNDERGROUND SHORT FOR THE POWER FEED FOR HIGH MAST POLES HM093 AND HM094.)	21-015720 PE10	01/26/2021 11:27 am	W.O. Being Completed	35	On 3/2/2021 1:38:14PM	MFISHER : RESPLICED OLD SPLICES THAT WERE NO LONG GOOD.
12 ELECTRICAL	TERMINAL 21	001 (BERTH #7. REPLACE BROKEN ELECTRICAL PANEL ON THE SECOND LIGHT POLE FROM EAST TO WEST.)	21-018307 PE10	02/01/2021 11:49 am	PO Issued	29	On 3/1/2021 11:10:31AM	TWEBB : PO PARTIALLY RECEIVED.
13 ELECTRICAL	TERMINAL 18	001 (TERMINAL 21. REPAIR/REPLACE THE LIGHTS THAT ARE NOT WORKING BY THE ART WORK ON THE SECOND FLOOR.)	21-018318 PE10	02/01/2021 12:27 pm	W.O. Initial Review	29		
14 ELECTRICAL	TERMINAL 18	004 (LIFT STATION 13. CONNECT NEW PUMPS AND INSTALL NEW TVSS.)	21-009633 PE10	02/05/2021 7:15 am	W.O. Initial Review	25	On 2/22/2021 3:28:41PM	TWEBB : SE40000712 PLACED INTO PEOPLESOFT.
15 LIGHTING - BUILDING	TERMINAL 18	001 (TERMINAL 18. REPAIR/RETROFIT THE 4FT LIGHTS AROUND THE COUNTERS ON THE FIRST FLOOR, SOUTH SIDE.)	21-021605 PE10	02/25/2021 7:12 am	W.O. Initial Review	5	On 2/25/2021 2:34:17PM	KIDAVIS : REPLACE THREE DAMAGE 4' FLUORESCENT L/BALLAST AND 25 4' LED LAMPS.
16 ELECTRICAL	TERMINAL 26	001 (TERM 25 & 26 - BACK PARKING LOT AREA - THERE ARE NO LIGHTS- PLEASE BRING BACK LIGHTS)	21-021613 PE10	02/25/2021 7:51 am	W.O. in Queue	5		
17 ELECTRICAL	BERTH 6	001 (BERTH #6 BUILDING #6 - PLEASE REPAIR LIGHTS AROUND BUILDING #6)	21-021690 PE10	02/26/2021 8:13 am	W.O. in Queue	4		
18 LIGHTING - BUILDING	SOUTHPORT CRANE OFFICE & SHOP	001 (CRANE SHOP, OUTDOOR BATHROOMS, REPAIR LIGHTS OUT UNDER CANOPY ENTRANCE ON BOTH BATHROOMS.)	21-021692 PE10	02/26/2021 8:14 am	W.O. in Queue	4		
19 LOAD BRIDGE EQUIP MAINT	TERMINAL 2	001 (TERMINAL 2. PM THE SOUTH BRIDGE.)	21-021781 PE11	03/01/2021 7:22 am	W.O. Being Completed	1	On 3/2/2021 2:18:55PM	RCHANDAN : 2 MAR 2021 MOVED T19 WEST MTB

Total : 19 phases OPEN for Point of contact : "Rolando" P. - Electrical Supervisor

Figure 3: Typical Work Order Management System Report

STEP 4A

FACILITIES MAINTENANCE BUDGET

FIVE YEAR OPERATIONAL & CAPITAL IMPROVEMENT PLAN (CIP)

The maintenance department develops and maintains a 5-year Operational and Capital Improvement Plan (CIP) Plan to strategically forecast resource needs, infrastructure upgrades, and long-term investments. This plan outlines major facility priorities, anticipated equipment replacements, compliance-driven projects, and operational budget projections. This planning approach minimizes down time of equipment, supports growth, and maintains the long-term functionality of port assets.

A typical port budget sheet (Figure 4a1 & 4a2) can appear complex and often lacks the critical operational details needed for effective decision making and upkeep. To address this, the information can be reorganized into a comprehensive all-in-one spreadsheet (Exhibit 4a3) that consolidates the most essential data. This enhanced spreadsheet can include staff names, associated work orders, work order descriptions, and other key operational information. By integrating these elements into a single document, leadership staff gains a clearer understanding of workload distribution, resource needs, maintenance priorities and most importantly budget tracking of dollars spent, encumbered, and available. Ultimately, this approach transforms a confusing budget sheet into a practical management tool that strengthens planning, accountability, and operational efficiency.

A well-developed Facilities Maintenance Operational Plan (Exhibit 4a4 and 4a5) helps ensure that a port maintains safe, reliable, and efficient infrastructure on a day-to-day basis. It establishes clear processes for preventive maintenance, work order management, staffing, vendor oversight, inventory controls, and emergency response. By defining these procedures in advance, the port reduces downtime and creates a predictable workflow that supports all operational divisions. An operational plan also strengthens transparency and accountability, i.e. tasks are documented, priorities are defined, and performance can be measured through KPIs. Ultimately, this promotes a more resilient maintenance program capable of supporting the port's complex mechanical, electrical, structural, and marine systems.

A Capital Improvement Plan (CIP) Plan (Exhibit 4a4 and 4a5) serves as a long-range roadmap for major repairs, replacements, and infrastructure investments that extend beyond daily maintenance. Forecasting needs over a five-year horizon, the CIP ensures that funding, scheduling, and regulatory requirements are met before assets reach critical condition. Thorough

planning enables leadership to align capital projects with strategic goals, prioritize high risk or critical improvements, and coordinate work across various departments. When combined with a solid operational plan, the CIP provides an integrated view of the port's entire asset lifecycle resulting in better budgeting and a more sustainable infrastructure system.

The budget and capital planning figures and exhibits may be adjusted to fit the needs of different ports based on size, available funding, staffing levels, asset inventory, and business lines.

- **Smaller ports** budget may use a simplified plan focused on essential repairs, safety needs, regulatory compliance, and near-term equipment replacement
- **Larger or multi-business-line ports** budget may require a more detailed plan organized by cruise, cargo, energy, utilities, leased properties, roadways, marine structures, and major capital projects.

Account	Account Description	FY 2025 Actuals thru 9/30/25	FY 2026 Modified Budget	FY2026 January YTD Actuals	FY 2026 Indicated	FY 2027 Core Budget	FY 2027 Increase / (Decrease) from FY 2026 Budget	%
	PERSONNEL EXPENSES							
	Sal-Regular Salary and Wages							
510030	Sal-Regular Salary and Wages	6,011,040	6,051,330	2,055,074	6,051,330	6,137,600	86,270	1%
510060	Sal-wo Health Benefits	1,976	85,000	-	85,000	86,700	1,700	2%
	Sub-total Salary & Wages	6,013,016	6,136,330	2,055,074	6,136,330	6,224,300	87,970	1%
510070	Sal-Adjustment	-	148,570	-	148,570	148,230	(340)	0%
510100	Sal-Overtime- Straight Time	108,146	73,340	45,575	73,340	73,340	-	0%
510110	Sal-Overtime- Premium Dist	491,616	666,660	263,549	666,660	666,660	-	0%
510130	Disaster-Regular	3,913	-	-	-	-	-	-
	Total Salaries & Wages	603,675	888,570	309,124	888,570	888,230	(340)	0%
	Employee Benefits							
510510	Fm-Medicare	96,552	99,710	34,693	99,710	100,980	1,270	1%
510520	Fm-Retirement Contributions	934,866	992,250	337,333	992,250	995,600	3,350	0%
510525	Fm-County 457 Contribution	104,497	191,020	36,521	191,020	191,020	-	0%
510540	Fm-Group Insurance	1,372,645	1,564,530	483,258	1,564,530	1,913,530	348,970	22%
510550	Fm-Basic Life Insurance	11,896	14,060	2,786	14,060	9,260	(4,800)	-34%
510580	Fm-Unemployment Compensation	-	61,050	-	61,050	60,910	(140)	0%
510610	Fm-Uniform Allowance	20,550	23,100	9,450	23,100	23,100	-	0%
510640	Fm-Social Security Taxes	411,717	425,380	147,285	425,380	430,990	5,610	1%
	Total Employee Benefits	2,952,723	3,371,100	1,051,327	3,371,100	3,725,360	354,260	11%
	TOTAL PERSONNEL EXPENSES	9,569,414	10,396,000	3,415,524	10,396,000	10,837,890	441,890	4%
	NON-PERSONNEL OPERATING EXPENSES							
511040	Cty Svcs-Print Shop	450	200	-	-	200	-	0%
512120	Prof Svcs-Engineering	-	400,000	165,178	675,000	872,000	472,000	118%
512175	Prof Svcs - Financial Advisory	15,000	30,000	-	15,000	15,000	(15,000)	-50%
512670	Prof Svcs-Laboratory-Testing	-	3,000	-	-	3,000	-	0%
512780	Prof Svcs-Janitorial	871,673	1,000,000	291,736	900,000	950,000	(50,000)	-5%
519010	Tv-Airfare	1,068	2,000	-	-	2,000	-	0%
519020	Tv-Car Rentals	-	200	-	-	200	-	0%
519030	Tv-Hotels	1,120	1,500	-	-	1,500	-	0%
519050	Tv-Meals	174	500	-	-	500	-	0%
519060	Tv-Oth Allowbl Incidntl Csts	267	200	-	-	200	-	0%
519070	Tv-Conference Registration	2,500	2,000	-	-	2,000	-	0%
524020	Util Svcs-Gas-Propane	811	-	-	-	-	-	-
526020	Rntl-Lsg- Other Equipment	57,408	50,000	16,849	40,000	50,000	-	0%
526030	Rntl-Lsg- Copiers	7,911	9,000	2,320	9,000	8,000	(1,000)	-11%
540030	RM-Building Maint	8,667,508	6,347,640	1,152,281	6,347,640	6,247,118	(100,522)	-2%
540050	RM-Equipment Maint	1,849,618	1,950,200	433,857	1,950,200	1,950,200	-	0%
540075	RM-Grounds Maintenance	314,241	200,000	22,401	200,000	200,000	-	0%
540160	RM-Stormwater System Maint	747,481	1,150,000	-	500,000	700,000	(450,000)	-39%
540190	RM-Vehicle Repair and Maint	132,751	75,000	27,255	75,000	75,000	-	0%
540250	RM-Road Bridge Maint	1,452,055	700,000	288,293	700,000	700,000	-	0%
545010	Printing Services	-	500	-	100	250	(250)	-50%
547230	Chrg-Trash Collect	5,867	4,000	-	4,000	4,000	-	0%
547280	Chrg-License Fees	15,580	2,000	1,828	6,000	10,000	8,000	400%
552310	Office Supplies	23,250	30,000	6,236	30,000	30,000	-	0%
552320	Office Equip-Furnit LT \$5,000	45,691	100,000	255	40,000	50,000	(50,000)	-50%
552330	Tools and Small Implements	65,879	100,000	54,172	100,000	100,000	-	0%
555110	MS-Maint and Janitorial Sup	1,191,410	1,300,000	419,184	1,300,000	1,300,000	-	0%
555120	MS-Marine Equip and Suppl	198,356	400,000	289,915	800,000	800,000	400,000	100%
555150	MS-Security Suppl	1,435	1,500	712	1,000	1,500	-	0%
555160	MS-Signage	-	4,500	-	2,000	2,000	(2,500)	-56%
555190	MS-Safety Supplies	87,253	50,000	16,260	50,000	50,000	-	0%
555320	Fuel-Diesel	2,628	3,000	10,069	20,000	3,000	-	0%
555340	Fuel- Propane	-	1,000	301	900	1,000	-	0%
555410	Cloth-Unif-Other Apparel	39,450	50,000	50,769	100,000	50,000	-	0%
555999	Physical Inventory Adjustments	(191,100)	-	-	-	-	-	-
556110	Professional Dues-Memberships	49	300	-	100	300	-	0%
556120	Subscriptions	2,800	-	-	2,800	2,800	2,800	-
556310	Training	238	1,000	-	-	1,000	-	0%
	TOTAL NON-PERSONNEL OPERATING EXPENSES	15,610,820	13,969,240	3,249,873	13,868,740	14,182,768	213,528	1.53%
	TOTAL OPERATING EXPENSES	25,180,233	24,365,240	6,665,397	24,264,740	25,020,658	655,418	3%

Figure 4a1: Typical Facilities Maintenance (FM) Budget Sheet- Line Items

Maintenance - 75702000					
Account Description	FY 2025 Actuals thru 9/30/25	FY 2026 Indicated	FY 2027 Core Budget	Justification FY26	Justification FY27
Sal-Other Executive	-	-	-		
Sal-Regular Salary and Wages	6,011,040	6,051,330	6,137,600		
Capitalized Labor Reduction	-	-	-		
Sal-Other Salaries and Wages	-	-	-		
Sal-wo Health Benefits	1,976	85,000	86,700		
Sal-Adjustment	-	148,570	148,230		
Sal-Comp Abs Adj	-	-	-		
Sal-Overtime- Straight Time	108,146	73,340	73,340		
Sal-Overtime- Premium Dist	491,616	666,660	666,660	Overtime/standby	Overtime/standby
Disaster-Regular	3,913	-	-		
Disaster-Dir Adm-Comp @1.25	-	-	-		
Frm-Medicare	96,552	99,710	100,980		
Frm-Retirement Contributions	934,866	992,250	995,600		
Frm-County 457 Contribution	104,497	191,020	191,020		
Frm-OPEB Expense	-	-	-		
Frm-Group Insurance	1,372,645	1,564,530	1,913,500		
Frm-Basic Life Insurance	11,896	14,060	9,260		
Frm-Deferred Comp Benefit	-	-	-		
Frm-Workers Compensation	-	-	-		
Frm-Unemployment Compensation	-	61,050	60,910		
Frm-Auto Allowance	-	-	-		
Frm-Uniform Allowance	20,550	23,100	23,100		
Frm-Tool Allowance	-	-	-		
Frm-Social Security Taxes	411,717	425,380	430,990		
Frm-Pension Adj YE GASB68	-	-	-		
Personnel Services - Budget	-	-	-		
Fleet Svcs-Motor Pool Chrgbk	-	-	-		
City Svcs-Print Shop	450	-	200		Business cards for FM staff, as needed
City Svcs-Cty Auditor Chrgbk	-	-	-		
City Svcs-Cty Attorney Chrgbk	-	-	-		
City Svcs-BSO Fire	-	-	-		
City Svcs-BSO Law Enforcement	-	-	-		
City Svcs-Call Taking	-	-	-		
City Svcs-Purchasing Assistance	-	-	-		
Prof Svcs-Auto Sys-Doors	-	-	-		
Prof Svcs-Appraisals	-	-	-		
Prof Svcs-Architectrl Consultg	-	-	-		
Prof Svcs-Consult Planning	-	-	-		
Prof Svcs-Consult Environ	-	-	-		
Prof Svcs-Cnslt Rsrch-Studies	-	-	-		
Prof Svcs-DesignAndInspection	-	-	-		
Prof Svcs-Engineering	-	675,000	872,000	Future Moffatt Invoicing	Bond Report - Moffatt, remaining work to be completed per schedule
Prof Svcs-Gen Contractor Const	-	-	-		
Prof Svcs-Legal	-	-	-		
Prof Svcs-Lobbyist	-	-	-		
Prof Svcs- Federal Lobbyist	-	-	-		
Prof. Project/Program Mgr	-	-	-		
Prof Svcs - Financial Advisory	15,000	15,000	15,000	Improvzyze - End-of-year inventory count	Improvzyze - End-of-year inventory count
Prof Svcs-Laboratory-Testing	-	-	3,000		Lab testing for water quality, as needed
Prof Svcs-Janitorial	871,673	900,000	950,000	MCJ	MCJ contract - potential 3% increase
Tvl-Airfare	1,068	-	2,000	Airfare AAPA	Airfare AAPA
Tvl-Car Rentals	-	-	200		Car rental AAPA, if applicable
Tvl-Hotels	1,120	-	1,500		Hotel AAPA
Tvl-Meals	174	-	500		Meals AAPA
Tvl-Oth Allowbl Incidntl Csts	267	-	200		Incidentals AAPA
Tvl-Conference Registration	2,500	-	2,000		Conference registration AAPA
Rnti-Lsg- Other Equipment	57,408	40,000	50,000	Rental of portable toilets (Friendly John fixed), equipment such as forklifts, cranes, pressure washing machines, diesel pumps, as needed	Rental of portable toilets (Friendly John fixed), equipment such as forklifts, cranes, pressure washing machines, diesel pumps, as needed
Rnti-Lsg- Copiers	7,911	9,000	8,000	Toshiba copiers @ \$424.70 per quarter; copier @ \$90 per quarter	Facilities Maintenance - printers
RM-Building Maint	8,667,508	6,347,640	6,247,118	HVAC - Trane - continued services/repairs Water/Sewer breaks and repairs Electrical repairs - continued repairs Elevator/Escalator - Oracle - continued services/repairs/standby Fire Safety - Bass United/City Fire/Black Fire - cont'd services/repairs Fence/Gates/Doors - continued repairs Roof repairs - continued repairs Window cleaning - cont'd services Remediation - as needed Canopies - as needed Elec/Static Signs - as needed Baggage Handling System - cont'd services	HVAC - Trane - \$1.5M fixed cost - monthly preventative maintenance HVAC - Trane - \$270,000 repairs - corrective maintenance Sewer - Intercounty - \$135,000 fixed cost - bi-monthly maintenance of lift stations Water/Sewer breaks and repairs - \$1M Electrical repairs - \$500,000 Elevator/Escalator - Oracle - \$436,000 fixed cost - preventative maintenance Elevator/Escalator - Oracle - \$600,000 repairs and standby Fire Safety - Bass United/City Fire/Black Fire fixed costs - \$170,000 Fire Safety - Repairs are needed - \$100,000 Fence/Gates/Doors - \$300,000 Roof repairs - \$500,000 Window cleaning - Over The Top - \$136,000 fixed cost Remediation - \$100,000, as needed Canopies - \$150,000, as needed Elec/Static Signs - \$200,000 Emergency exit signs - \$130,000 fixed Baggage Handling System - \$20,118
RM-Equipment Maint	1,849,618	1,950,200	1,950,200	Loading Bridges - Adette - cont'd repairs/standby Generators - cont'd repairs	Loading Bridges - Adette - \$855,200 fixed cost - monthly PM Loading Bridges Repairs & Standby - \$1,250,000 Generators - quarterly preventative maint. / load test yearly - \$35,000
RM-Stormwater System Maint	747,481	500,000	700,000	Ditch/Permit cleaning	Ditch repairs, vac truck, stormwater license regulatory cleaning
RM-Vehicle Repair and Maint	132,751	75,000	75,000	Auto Parts - NAPA, Tiresoles	Auto Parts - NAPA, Tiresoles
RM-Road Bridge Maint	1,452,055	700,000	700,000	Roadway Maintenance/asphalt/pot holes/docks	Roadway Maintenance/asphalt/pot holes/docks
Printing Services	-	100	250	Printing of poster boards, as needed	Printing of poster boards, as needed
Chrg-Trash Collect	5,867	4,000	4,000	Trash collections/disposal, as needed	Trash collections/disposal, as needed
Chrg-License Fees	15,580	6,000	10,000	Inspection fees for elevators	Inspection fees for elevators/yearly
Office Supplies	23,250	30,000	30,000	Office supplies, includes Ready Refresh (water)	Office supplies, includes Ready Refresh (water)
Office Equip-Furnit LT \$5,000	45,691	40,000	50,000	Purchase of microphones for the terminals, ice machine, TVs, cabinets	Purchase of microphones for the terminals, ice machine, TVs, cabinets, etc
Tools and Small Implements	65,879	100,000	100,000	Purchase of tools such as drills, compressors, cleaning	Purchase of tools such as drills, compressors, cleaning machines, etc
MS-Maint and Janitorial Sup	1,191,410	1,300,000	1,300,000	Warehouse parts/supplies (includes janitorial)	Warehouse parts/supplies (includes janitorial)
MS-Marine Equip and Suppl	198,356	800,000	800,000	Additional parts for loading bridges - MTBs	Additional parts (cylinders) for loading bridges MEGs
MS-Security Suppl	1,435	1,000	1,500	TWIC cards (includes renewals) for FM Staff	TWIC cards (includes renewals) for FM Staff
MS-Signage	-	2,000	2,000	Printing of signs, as needed	Printing of signs, as needed
MS-Safety Supplies	87,253	50,000	50,000	Safety supplies such as disposable gloves, hard hats, traffic	Safety supplies such as disposable gloves, hard hats, traffic cones, masks, PPE
Fuel-Diesel	2,628	20,000	3,000	Diesel for generators	Diesel for generators
Fuel- Propane	-	900	1,000	Propane as needed	Propane as needed
Cloth-Unif-Other Apparel	39,450	100,000	50,000	Extra order - uniforms	Uniforms
Professional Dues-Memberships	49	100	300	PE license renewal, Notary renewal for Admin Staff	PE license renewal, Notary renewal for Admin Staff
Subscriptions	2,800	2,800	2,800	Dun & Bradstreet yearly membership	Dun & Bradstreet yearly membership
Training	238	-	1,000	Continuing education	Continuing education
TOTAL	25,180,233	24,264,740	25,020,658		

Figure 4a2: Typical Facilities Maintenance (FM) Budget Sheet- Line Item Descriptions

Exhibit 4a3: FM Budget All in One Spreadsheet

Date				FY27			FY28			FY29			FY30			FY31		
				IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT
Berths	Fenders Qty	Cost per unit	Comments	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$
1	10		w/new sea wall												thd			
2	10	\$60,000.00				600,000												
3	7	\$60,000.00				420,000												
4	12		ok			0												
5	12		ok			0												
6	8	\$60,000.00				480,000												
7	10	\$60,000.00	ok															600,000
8	10					0												
9	9					0												
10	12					0												
11	10					0												
12	12					0												
13	9					0												
14	10					0												
15	11					0												
16	10					0												
17 & 18	11	\$60,000.00	hardware FY22	100,000								660,000						
19	10	\$60,000.00				600,000												
20	9	\$60,000.00				540,000												
21	13	\$60,000.00				780,000												
22	9	\$60,000.00				540,000												
23	0																	
24	10		ok			0												
25	14		Moss			0												
26	12		Moss			0												
27	11		Moss			0												
28	0		USCG															
29	15		ok			0						900,000						
30	0		Moss															
31	17	\$60,000.00				1,020,000												
32	16	\$60,000.00				960,000												
33a	13	\$60,000.00				780,000												
33b	6	\$60,000.00				360,000												
33c	6	\$60,000.00				360,000												
	112		Totals	\$100,000	\$0	\$7,440,000	\$0	\$0	\$0	\$0	\$0	\$1,560,000	\$0	\$0	\$0	\$0	\$0	\$600,000

Exhibit 4a4: Facilities Maintenance (FM) 5 year Operational / Capital Plan for Infrastructure

High Mast Lights - FM 5 year Operational / Capital Plan																	
Date			FY27			FY28			FY29			FY30			FY31		
			IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT	IN_HOUSE	PRIVATE VENDOR	CAPITAL PROJECT
High Mast Light #	Location	Comments	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$	Prev.Maint. & Repair \$	Estimated Cost \$	Estimated Cost \$
HM001	Hyde Shipping				60,000	56			63			70			79		
HM002	Hyde Shipping	Scheduled for FY21	50			56			63			70			79		
HM003	Hyde Shipping	2015 LEDs	50			56			63			70					94,411
HM004	King Ocean Midport		50			56			33,869			70					51,926
HM005	T-19 Parking Lot		50			56			63					84,296	79		
HM006	Sol Shipping		50					67,200	63			70			79		
HM007	T-19 Parking Lot		50			56			63					84,296	79		
HM008	Sol Shipping		50					67,200	63			70			79		
HM009	Grid #1		50					67,200	63			70			79		
HM010	Sol Shipping		50			56					75,264	70			79		
HM011	Corner of Eller Drive	Retrofitted-FY21	50			56			63			70			79		
HM012	Horizon		50			30,240			63			70					51,926
HM093	Steel Yard		50			56			41,395			70					51,926
HM094	King Ocean South		50			56			41,395			70					51,926
HM095	King Ocean South		50			30,240			63			70					51,926
HM096	CROWLEY	maintained by Tenant															
HM097	King Ocean South		50			30,240			63			70					51,926
HM098	King Ocean South		50			30,240			63			70					51,926
HM099	CROWLEY	maintained by Tenant															
HM100	CROWLEY	maintained by Tenant															
HM101	CROWLEY	maintained by Tenant															
HM102	CROWLEY	maintained by Tenant															
HM103	King Ocean South	Pole Missing															
HM116	Horizon	Retrofitted-FY21	50			56			63			70			79		
HM-P1	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P2	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P3	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P4	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P5	King Ocean West	Musco to repair			3,700												
HM-P6	King Ocean West	Musco to repair			3,700												
HM-P7	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P8	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P9	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P10	King Ocean West	New Musco Pole (10 Year Warranty)															
HM-P11	King Ocean West	Musco to repair			3,700												
HM-P12	King Ocean West	New Musco Pole (10 Year Warranty)															
		Totals	\$2,400	\$0	\$251,100	\$364,616	\$0	\$537,600	\$284,822	\$0	\$225,792	\$3,290	\$0	\$337,184	\$2,449	\$0	\$1,081,005

Exhibit 4a5: Facilities Maintenance (FM) 5 year Operational / Capital Plan for Infrastructure

STEP 4B

REQUISITION PROCESS AUTOMATION

Automating the requisition and purchase order process speeds up work order completion times and enhances procurement efficiency by reducing manual entry of various forms. Through system automation, the maintenance department can ensure faster purchasing of parts and services, improved accuracy, and consistent compliance with Port finance policies.

The first step in creating a financial purchase order to address the completion of an outstanding work order is the creation of a requisition document (Figure 4b). Automating this government requisition process is vitally important and provides significant advantages over a traditional hand-delivered system by eliminating delays caused by physical routing and manual signatures. Automated workflows ensure that work order requests move instantly to the correct approvers, reducing turnaround times, especially for critical maintenance needs. Digital systems also improve accuracy by enforcing standardized forms and complete backup documentation, which are often inconsistent in paper-based processes. Unlike manual methods that can lead to lost packets, duplicate requests, or incomplete financial records, an automated system creates a full audit trail that strengthens compliance. Linking requisitions directly to work orders and budget lines enhances financial tracking and prevents overspending, which is essential for auditing purposes. Automation further reduces operational disruptions by ensuring maintenance staff receive materials and project managers receive approval for vendor services promptly without waiting for physical paperwork to circulate.

TOTAL ESTIMATED COST \$ 215.00		FY 2023		PURCHASING DIVISION		Internal Tracking FMIA-23-0061 HERON GARAGE LOW PRESSURE Requisition Number:							
Facilities Maintenance				INTERNAL PURCHASE REQUISITION FORM									
PeopleSoft Chartfields				Is this requisition tied to an action item listed on the Bond Report? YES ☐ NO ☒ If yes, then use the following chartfields: 42100-42100-75703000-540030									
LINE ITEM	Business Unit	FUND	PROGRAM CODE	DEPARTMENT ID	ACCOUNT	PROJECT	SPECIFICATIONS/ DESCRIPTION	SERVICE DATES (IF SERVICE)	QUANTITY	UNITS	UNIT COST	TOTAL COST	
	PFM01	42100	42100	75702000	540030		GENERATE A PURCHASE ORDER PER ESTIMATE FOR					\$ 0.00	
							LOW PRESSURE AT THE HERON GARAGE 5TH FLOOR					\$ 0.00	
							TO DETERMINE IF THIS IS THE CAUSE					\$ 0.00	
							PER CONTRACT OPN2121456B1_1					\$ 0.00	
							_001 BACKFLOW PREVENTER CERTIFICATION TEST ANNUAL		1	EA	\$ 55.00	\$ 55.00	
							_017 REPAIR SERVICES, LABOR RATES, AFTER HOURS		2	HR	\$ 80.00	\$ 160.00	
												\$ 0.00	
							THIS IS AN URGENT REQUEST					\$ 0.00	
												\$ 0.00	
												\$ 0.00	
												\$ 0.00	
												\$ 0.00	
												\$ 0.00	
												\$ 0.00	
												\$ 0.00	
Total Estimated Cost: \$ 215.00													
Authorized Signature (Division Director or Authorized Agent)				Suggested Vendor HANS JOHNSON PLUMBING & AIR				For Delegated Purchase Agency Contact Person and Phone #				Ship To Code PT002	
Submit Form				Vendor # VC00022650									
I HEREBY AUTHORIZE THIS PURCHASE AND CERTIFY THAT SUFFICIENT FUNDS ARE AVAILABLE AND SET ASIDE FOR PAYMENT.				APC Receiving Quote				Date					
Person Receiving Quote (if it CAs)				Vendor Contact HANSJOHNSONPLBG@GMAIL.COM				Customer Account #					
Assigned Vendor HANS JOHNSON PLUMBING & AIR				Vendor # VC00022650				Vendor Address 11230 NW 27TH STREET, PLANTATION FL 33323				Vendor Phone # (954) 764-8451	
Delivery Date				F.O.B.				Requisition By (Agency Contact)					
Master Agreement # and Title OPN2121456B1_1 BACKFLOW PREVENTER CERTIFICATION				Requestor Email 				Date Requested 02/07/2023		Date Needed 02/07/2023		Date Ordered	
Port Finance Department: Expense account approved by Port Finance													
Submit Form				Attach Documents				Chief Executive/Port Director or Authorized Agent					
Level 1 Approver				Level 2 Approver				I HEREBY AUTHORIZE THIS PURCHASE AND CERTIFY THAT SUFFICIENT FUNDS ARE AVAILABLE AND SET ASIDE FOR PAYMENT.					
Submit Form				Submit Form				Submit Form					

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STEP 4C

GOVERNMENT CREDIT (PURCHASING) CARD

The government credit (purchasing) card program enables maintenance staff to quickly acquire approved materials, tools, and emergency supplies needed for daily operations. Proper card management includes adhering to spending limits, documenting purchases, and following established guidelines to ensure accountability. This flexibility reduces delays, minimizes downtime, and supports timely completion of maintenance tasks while maintaining full financial compliance.

Minimizing government credit (purchasing) card (Figure 4c) use and emphasizing formal contract agreements is vital for maintaining financial discipline and operational consistency within a port maintenance department. Credit (purchasing) card purchases often lead to variable pricing and inconsistent documentation, making it difficult to manage budgets or audit expenditures. The use of a port credit (purchasing) card should be limited to urgent purchases that directly support daily operations, such as minor repair materials, tools, or emergency work/supplies needed to avoid delays. The credit (purchasing) cards usually have limits of \$3,500 to \$7,500 unless higher limits are approved by the finance department.

Contract agreements, on the other hand, lock in predictable pricing and defined scopes of work. Instead of paying fluctuating rates for emergency mechanical, electrical or plumbing repairs, a standing trades services contract can ensure standardized labor/parts rates and predetermined response times. This structure reduces unexpected costs and simplifies financial tracking and strengthens vendor reliability.

FACILITIES MAINTENANCE CREDIT (PURCHASING) CARD REQUEST FORM	Date:		Amount:	
	Fund/Program		Dept	Account
Vendor Name:		Vendor Address:		
Vendor Phone:				
Contact Person:				
Trade Person:				
Supervisor:		Purchaser:		
Manager:		Director:		
Does Private Vendor Agreement Exist:		☐ No ☐ Yes, Explain		
Work Order #:		Counter Release:		
Description of items:				

Figure 4c: Typical Government Credit (Purchasing) Card Request Form

STEP 5

WORK ORDERS ONE-STOP SHOP PHONE CENTER

A centralized “one stop shop” phone number and email (Figure 5) for a port facilities maintenance department streamlines how service requests are received and managed. With a single point of contact, employees, tenants, and stakeholders no longer need to guess which division handles which type of issue; all requests flow through one consistent channel. Operationally, a centralized routing system strengthens accountability and improves data tracking. When all requests come through the same contact points, the FM Department gains better knowledge of recurring problems, workload distribution, and response times. For example, trends may reveal repeated chiller alarms at a specific terminal, prompting proactive maintenance that reduces equipment downtime. Ultimately, centralizing communication reduces response times and enhances the overall quality of maintenance service across port facilities.

WORK ORDER REQUESTS

- Email the Call Center (24 hours, 7 days per week): PEVWO@broward.org
Email should contain a detailed work order request, point of contact name, email, and phone number.

OR

- Call in your Work Order Request (8am to 4:30pm M-F): **954-690-WORK (9675)**
The requestor will receive an email (next regular workday) with the work order number for their record.

EMERGENCY WORK ORDER REQUESTS (24 hours, 7 days per week)

- Call the same above work order center number: **954-690-WORK (9675)**
The requestor will be connected to either the Call Center Staff (regular hours and workdays) OR a Standby Supervisor (non-regular hours, weekends, holidays)*

*Emergency Request Calls received between 8:00 am to 4:30 pm M-F - Work Order Call Center will contact the responsible supervisor for that area to dispatch the appropriate individual(s) to respond to the request.

*Emergency Request Calls received between 4:30 pm and 8:00 am, Weekends & Holidays - The Work Order Call Center phone number will be forwarded to the Standby Supervisor, who will be handling Emergency after hours and weekend calls then dispatching the appropriate individual(s).

Figure 5: Typical One-Stop-Shop memo for receiving work orders

STEP 6

PORT INVENTORY MANAGEMENT

Inventory management ensures that maintenance supplies, parts, and equipment are tracked, stored, and distributed efficiently and precisely. The department maintains accurate inventory levels to minimize waste, reduce costs, and prevent delays caused by stock shortages. Surplus items are cataloged, repurposed when possible, or disposed of in accordance with finance policy.

Consolidating all parts and equipment into a single warehouse significantly improves inventory accuracy by eliminating inconsistencies that arise when stock is spread across multiple locations. A centralized warehouse allows for:

- standardized receiving of parts
- uniform counting procedures
- consistent use of inventory management systems
- reduction in the likelihood of duplicate entries and misplaced items

When all materials flow through the same warehouse, staff can follow consistent procedures for receiving, labeling, and data entry. A centralized location also allows warehouse personnel to perform regular cycle counts more efficiently and monitor stock levels in real time. As a result, teams have more reliable inventory information, which supports faster part retrieval, reduces emergency purchases, and ensures maintenance staff always know what supplies are available.

Typical procedures for a warehouse supervisor and storekeepers for all types of ports to follow:

- Receive all incoming parts at the designated central warehouse. This ensures every item passes through the same location, reducing confusion about where materials are stored.
- Follow standardized receiving procedures. Warehouse staff should label, log, and inspect all items using the same process each time, which helps prevent duplicate entries or missed items.
- Store all parts using consistent bin locations and labeling systems. Having one organized storage method makes items easier to find and reduces the risk of misplacement.
- Update the inventory system immediately after receiving or issuing any part. Real-time data entry ensures the system always reflects current stock levels.
- Perform regular cycle counts in the centralized warehouse. Because all inventory is stored in one place, counts are faster, more accurate, and easier to reconcile.
- Investigate and resolve discrepancies promptly. With everything stored in a single location, staff can quickly retrace steps and identify root causes.
- Use accurate inventory data to support maintenance teams. Reliable stock information helps avoid delays, reduces emergency purchases, and ensures materials are available when needed.

STEP 7

MAINTENANCE OF LEASED PROPERTIES

As a landlord port, the Port Facilities Maintenance Department is responsible for ensuring that all common-use infrastructure remains functional and aligned with regulatory and operational requirements. These responsibilities include maintaining core assets such as roadways, utility systems, fencing, seawalls, berths, stormwater infrastructure, and security systems. Within these responsibilities, the maintenance tasks include pavement repairs, utility line replacements, seawall inspections, lighting upgrades, dredging related support activities, and upkeep of shared operational areas used by multiple tenants.

Disadvantages of the port maintaining leased properties (Figure 7)

- Carrying out these responsibilities is often challenged by the complexity of a 24/7 port environment.
- Maintenance schedules frequently require coordination around vessel movements, tenant operations, and security-restricted zones, limiting access for repairs.
- Aging infrastructure, exposure to harsh marine conditions, and the need for specialized materials or contractors can further extend repair timelines.
- Regulatory requirements such as environmental permitting also add difficulty to executing timely maintenance.

Advantages of the tenant maintaining leased properties (Figure 7)

- Allowing tenants to maintain their own terminals provides significant operational and financial advantages for a landlord port.
- When tenants assume responsibility for the upkeep of their leased facilities, maintenance can be tailored directly to their operational needs, ensuring faster response times, and reduced downtime of critical infrastructure.
- Relieves the port of the substantial cost and resource burden associated with maintaining tenant exclusive assets, allowing the Port Facilities Maintenance Department to focus its efforts on shared and critical infrastructure.
- Port benefits from improved efficiency, accountability, and better alignment between asset condition, tenant expectations, and long-term operational performance.

The tenant maintenance responsibilities matrix for leased properties (Figure 7) may be adjusted to fit different ports based on size, tenant structure, and business lines.

- **A smaller port** with limited leased areas may use a simple responsibility matrix that identifies whether the port or tenant maintains basic items such as fencing, lighting, pavement, utilities, and landscaping
- **Larger or multi-business-line ports** with cruise terminals, cargo yards, warehouses, and multiple tenants may require more detailed lease exhibits that clearly separate port-owned common infrastructure from tenant-specific improvements and operational assets

This allows each port to apply the same general framework while tailoring the level of detail to match its lease agreements and infrastructure

Tenant Maintenance Responsibilities

	Port	Tenant
Exterior Site Improvements:		
Fencing		X
Gates		X
Lighting (light fixtures, junction box & poles)		X
Highmast Lights Maintenance	X	
Obstruction Lights	X	
Lane Markings		X
Traffic Signage		X
Electrical Outlets		X
Underground Fuel Tanks		X
Underground Waste Oil Tanks		X
Reefer Plugs		X
Fire Protection		X
Safety Equipment		X
Landscaping		X
Trash/Debris Collection		X
Irrigation		X
Pest Control		X
Pavement - Normal Wear & Tear		X
Potholes		X
Drainage (i.e. standing water)		X
Manholes (includes cover & box)		X
Electrical Boxes		X
Stormwater System (includes jetting per SWPPP)	X	
Drainage Inlets (Includes grate, top slab & box)		X
Lift Stations		X
Backflow Preventers		X
Bollards		X
All Improvements		X
(Tenant's sole responsibility)		
Underground Utilities up to Premises	X	
Underground Utilities on Premises		X
Above ground Utilities up to Premises	X	
Above ground Utilities on Premises		X

Figure 7: Typical Tenant Lease Agreement - Maintenance Responsibilities by the Tenant

STEP 8

AUDITING REPORTS

External oversight of a Port Facilities Maintenance Department commonly includes a range of audits (Figure 8) conducted by state, county, and independent regulatory bodies. These may include financial compliance audits to verify proper use of funds and procurement and contracting audits to assess adherence to purchasing regulations. These audits have a meaningful impact on departmental operations and often prompt targeted operational improvements.

Audit findings may lead to:

- Creation of formalized preventive maintenance schedules
- Restructuring inventory management procedures
- Adoption of new digital work-order tracking systems to ensure better accuracy and accountability.
- Procurement-related audits may result in standardized contract oversight checklists or more stringent documentation requirements for vendor selection.

While these adjustments may require short-term operational shifts, they ultimately strengthen the department's ability to deliver reliable, compliant, and efficient maintenance services across all port facilities.

Auditing Reports may differ by port size and business lines as such:

- **Smaller ports** may receive simpler audits focused on financial controls, procurement, work orders, safety, and preventive maintenance
- **Medium and large ports** may face broader audits covering contracts, assets, environmental compliance, inventory, and capital spending

Audit reports will most likely require corrective action plans with timelines and follow-up reporting.

order of priority of recommended implementation.

Rec. No.	Recommendation	Priority	Timeframe	Cost/ (Savings)
Chapter 2 – Analysis of Planning and Management				
1	The Port should commit to the development of an asset inventory as a first step toward a structured asset management program.	High	Begin immediately.	\$100,000 for the development of the "horizontal" assets and approximately \$800,000 for the facilities asset inventory.
2	In preparation for the installation of the AiM computerized maintenance management system, the PW/M Section should begin requiring all crew members to report elements of their work each day.	Medium	Immediate	Approximately \$38,500 for 110 tablets for data entry in the field
3	The PW/M Section should begin to define work activities that are commonly performed.	Medium	Begin immediately. Complete Fall, 2017	NA
4	The PW/M Section should begin to define service levels for each of its major work activities.	Low	Begin immediately. Complete Fall, 2017	NA
5	The PW/M Section should develop and implement a formal plan and schedule for all major maintenance events for the year.	Medium	Commence FY 2018	NA
6	The Facilities Maintenance Superintendent should generate a monthly performance report on the accomplishment of projected work, and discuss the work accomplished with the Seaport Maintenance Manager, who should brief the Enterprise Director and Assistant Director of Operations on accomplishment of work and any deficits.	Medium	Commence FY 2018	NA

Figure 8: Typical Audit Report Recommendations

STEP 9

PORT STRATEGIC PLAN/KPI'S/WEEKLY REPORTS

The maintenance department contributes to the Port's strategic plan by aligning operational activities with long-term organizational goals and performance measures. Key Performance Indicators (KPIs) are developed and tracked to gauge efficiency, asset reliability, and cost effectiveness. These metrics should support data driven decision making and ensure maintenance operations advance the Port's mission and strategic goals.

KEY PERFORMANCE INDICATORS (KPI's)

The following are commonly used KPI's for a Port Facilities Maintenance Department. These work well for mechanical, electrical, plumbing, structural, and waterfront assets in a port environment:

1. Preventive Maintenance (PM) Compliance Rate

Percentage of scheduled PM tasks completed on time. Indicates how effectively the team is managing routine maintenance to prevent breakdowns.

$$\text{PM Compliance Rate} = (\text{Number of PM tasks completed on time} \div \text{Number of PM tasks scheduled}) \times 100$$

2. Corrective vs. Preventive Maintenance Ratio

Tracks how much work is reactive (breakdowns) versus planned. Lower reactive work means better reliability and cost control.

$$\text{Corrective-to-Preventive Ratio} = \text{Number of corrective maintenance tasks} \div \text{Number of preventive maintenance tasks} \times 100$$

3. Asset Downtime (Critical Equipment)

Measures hours key assets such as cranes, fenders, pumps, generators, lighting, berth equipment, etc. are out of service. Helps monitor operational impact and identify chronic problem equipment.

$$\text{Asset Downtime} = \text{Total hours asset is unavailable due to failure or repair}$$

$$\text{Downtime \%} = \text{Downtime hours} \div \text{Total available hours} \times 100$$

4. Work Order Backlog (Aging)

Shows the volume and age of outstanding maintenance tasks. Helps ensure the backlog remains manageable and prioritized.

$$\text{Work Order Backlog} = \text{Total number of open work orders}$$

$$\text{Backlog Aging (days)} = \text{Sum of days each open work order has been outstanding} \div \text{Number of open work orders}$$

5. Safety Incidents Related to Maintenance Activities

Tracks incidents or near-misses associated with maintenance tasks. Supports a strong safety culture.

Safety Incident Rate = (Number of maintenance-related incidents ÷ Total maintenance labor hours) × 200,000

(200,000 is the OSHA standard benchmark)

Key Performance Indicators (KPI's) may be scaled by port size as follows:

- **Smaller ports** just may track basic measures such as open work orders, emergency repairs, and completed preventive maintenance.
- **Larger ports** may track downtime, preventive maintenance compliance, asset lifecycle cost, backlog aging, and response times.

FM WEEKLY STATUS REPORTS

An established principle in government is that it is not enough to perform quality work, it is equally important to communicate that work effectively; in other words, not only do you have to do a good job, but you have to tell people that you're doing a good job.

Providing regular port facilities maintenance updates (Figures 9a,9b,9c) is essential for ensuring informed decision-making and resource allocation. These updates highlight emerging risks, equipment performance issues, and operational impacts that leadership must be aware of to maintain safe and efficient port operations. Consistent reporting also supports transparency and accountability within the maintenance program. Additionally, updates allow management to prioritize funding and capital improvements based on real-time conditions. Ultimately, keeping management informed helps protect port assets, minimize downtime, and strengthen long-term operational reliability.

The FM weekly status reports should include:

- Updates of Port's highest priority tasks and equipment
- Number of pieces of equipment
- Include capital needs (equipment replacement needs)
- Be location based

Exhibits 9a, 9b, 9c FM Weekly Reports may be modified to a specific port's requirements based on size and business lines as such:

- **A smaller port** may use a simplified weekly update focused on critical work orders, safety issues, and major maintenance needs,
- **Larger or multi-business-line ports** may require more detailed reporting by terminal, asset type, operational division, and capital priorities.

The objective of these exhibits is to provide a flexible format that an individual port can scale to match its infrastructure, operations, and leadership needs.

Your Port Logo Here

SAMPLE

FM STATUS REPORT

03/12/2026

CRUISE TERMINALS

TERMINAL – 2

Loading Bridges - North Bridge – Operational
South Bridge – Operational

HVAC - Not Operational; Unit #4A down; coils ordered; ETC Sep. 2026

Elevators (3) - Operational

Escalators (3) - Operational

CAPITAL FUNDING - ENGINEERING

HVAC - FY29. Replacement of 1 out of 3 Chillers, 20 package units (20-40 tons). Chiller 1 needs to be replaced (300-ton, 2006-2009) - \$3,100,000.

Fenders – FY29 Part of 16-18 bulkhead replacement. Trelleborg bumpers (Cruise, King Ocean, Hyde)

Seawall and Bollard Pilings (Double-bitt) – FY29 Part of 16-18 bulkhead replacement.

Roof – FY30

TERMINAL – 4

Loading Bridges - East Bridge – Operational
West Bridge – Not Operational; cylinders ordered; ETC Aug. 2026

HVAC - Operational

Elevators (2) - Operational

Escalators (2) - Operational

CAPITAL FUNDING - ENGINEERING

Roof - FY30

PORT BUILDINGS - TENANTS

ADMINISTRATION BUILDING

HVAC - Operational

Elevators (3) - Operational

CAPITAL FUNDING - ENGINEERING

HVAC - FY26/27 - Full replacement of 23 split units (15-20 tons, 2000-2009) - \$3,500,000

MIDPORT GARAGE – HARBOR MASTER TOWER

HVAC - Operational

Elevators (4) - Operational

Tower Elevator (1) - Operational

HERON GARAGE

HVAC - Operational

Elevators (6) - Operational

Skybridge Elevators (3) - Elevator #B2 is down. Drive unit shipped out for repair. ETC 03/27/26

Skybridge Walkways (4) - Operational

CROWLEY

High Mast Lights - Crowley maintains its own lights.

- Removal and demolition of existing steel canopy – Contractor addressed comments by the City (zoning and planning section). Final review being performed by permitting agency.
- Removal of two 5000-gal underground fuel tanks – Signed contract with Lee Construction. County Resilient Environment Department permit applied for.

FUEL BERTHS

CAPITAL FUNDING - ENGINEERING

Fenders (panels) – Part of Slip 1 project (FY29)

- (Berth 6-10) - FY28 - \$4,000,000
- (Berth 11-13) - FY28 - \$3,300,000
- (Berth 14-15) - FY28 - \$2,700,000

Seawall and Bollard Pilings (Double-bitt) - FY29 To be accomplished as a part of Slip 1 Project

GRID 1. PARKING LOT-A

CAPITAL FUNDING - ENGINEERING

High Mast Lights - FY27 - HM009

CEMEX

CAPITAL FUNDING - ENGINEERING

Fenders (Berth 14-15) - FY29 - \$2,700,000 To be accomplished as a part of Berth16-18 Replacement

Seawall and Bollard Pilings (Double-bitt) - FY29 To be accomplished as a part of Berth16-18 Replacement

FIT

CAPITAL FUNDING - ENGINEERING

High Mast Lights - FY27 – HM043, HM044, HM045, HM048

Seawall and Bollard Pilings (Double-bitt) - FY30

VEHICLES & EQUIPMENT

- 78/81 vehicles delivered.

PORT EVERGLADES BACKGROUND

Located in South Florida, Port Everglades is approximately four square miles and one of the busiest cruise ports in the world. It is a leading container port in Florida and among the most active cargo ports in the United States. Port Everglades is South Florida's main seaport for receiving petroleum products including gasoline and jet fuel. Its Foreign-Trade Zone No. 25, office space inside the port's secure area and neighboring logistical warehouses make Port Everglades a highly desirable business center.

The port also maintains complex systems such as loading bridges, elevators, escalators, lighting systems, HVAC, docks, seawalls, and underground water/sewer infrastructure, etc., all of which require careful coordination and upkeep. Port Everglades is one of Broward County's strongest economic engines. The total value of economic activity at Port Everglades is almost \$28.1 billion annually. The port supports 204,385 Florida statewide jobs and 12,272 direct local jobs. Port Everglades is a self-supporting enterprise fund of Broward County government. It does not rely on local tax dollars for operations or capital improvements.



CRUISING



CARGO



ENERGY

CONCLUSION

Value of the Nine-Step Framework and Risks of Noncompliance

The value of the nine-step maintenance framework is that it turns port facilities maintenance from a reactive function into a structured program. By identifying tasks, assigning responsibilities, establishing vendor support, using a work order system, planning budgets, managing procurement, centralizing requests, controlling inventory, clarifying leased-property obligations, reviewing audits, and tracking KPIs, a port creates a complete operating system for protecting its assets. For example, clearly assigned responsibilities help ensure that life-safety systems and other major infrastructure are inspected and repaired by the appropriate staff or vendors. A centralized work order and reporting process also gives leadership visibility into recurring problems, backlogs, and capital needs before they become emergencies. When followed together, the steps support safer operations, better financial control, improved tenant and customer service, and longer useful life of critical port infrastructure.

If the maintenance steps are not completely followed, the port may increase its exposure to operational, financial, safety, and regulatory risks. For example, failure to list and assign tasks can result in missed inspections or duplicated work. Ineffective vendor contracts can delay emergency repairs to elevators, fire systems, HVAC equipment, seawalls, or utilities. Without a reliable work order system, unresolved problems may remain hidden until they disrupt cruise operations, cargo movement, or tenant activity. Poor budget planning, uncontrolled purchasing card use, inaccurate inventory, or unclear lease maintenance responsibilities can lead to overspending, audit findings, disputed tenant obligations, and delayed capital replacements. Finally, without KPIs and weekly reports, leadership may not become aware of declining infrastructure needs early, resulting in service delays, higher repair costs, safety issues, environmental violations, and loss of trust from port users and stakeholders.

Ultimately, this guide and toolkit is intended to give ports of any size a practical starting point for building, evaluating, and improving a sustainable maintenance program. The nine-step framework does not require every port to look the same or be of same size, but it does guide each port in better understanding its assets, assigning responsibility, documenting work, controlling costs, establishing priorities, and measuring performance in a consistent manner. When adapted to local port conditions, this framework helps maintenance departments move beyond day-to-day repairs and become highly effective in protecting public infrastructure, supporting port operations, and advancing long-term capital planning. It also helps leadership, staff, tenants, and stakeholders discuss clearly maintenance priorities, risks, funding needs, and service expectations. The toolkit supports not only better maintenance practices, but also stronger organizational accountability, improved resilience, and more reliable service to the maritime community.

BIBLIOGRAPHY

The sections in steps 1 through 9, including the exhibits and figures and definitions therein, were developed by the author based on past experiences and lessons learned from his 30 years of maintenance, engineering, project management, and maritime experience.

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