CHAPTER SEVEN
PORT MANAGEMENT AND OPERATIONS

7.1 STATUTORY AUTHORITY

7.1.1 Scope of Responsibilities

The original Marshall Islands Ports Authority was authorized by the Marshall Islands Ports Authority Act of 1999. However, the assets and liabilities of the original Ports Authority were merged with the Marshall Islands Airports Authority in 2003 to create the present day Republic of the Marshall Islands Ports Authority (RMIPA). The merger of these authorities and the related transfer of assets and liabilities are stipulated in the Marshall Islands Ports Authority Act of 2003.

Title 22, Chapter 1 of the Revised Marshall Islands Code authorizes the Marshall Islands Ports Authority to establish, maintain, and operate Amata Kabua International Airport, all known ports at Majuro, Ebeye, and Jaluit, as well as any other publicly owned and operated port that may be designated by the Minister of Transportation and Communications. Part VIII of Chapter 1 further clarifies that the authority of the director of the Marshall Islands Ports Authority extends to all facilities and other structures that are situated within all public port and airport areas.

In terms of ports, Part II of Chapter 1 requires that RMIPA will also:

- Provide port facilities and services;
- Provide navigational aides and regulate the movement of ships in the vicinity of ports;
- Provide port security;
- Provide services and facilities to ships using its ports;
- Support overall governmental strategies for the development of shipping plans within the Republic; and,
- Other functions related to the use of ports.

RMIPA is also authorized to carry on commercial activities at, or in relation to, all public ports.

Part VI of Chapter 1 provides RMIPA with authority for the establishment of charges, rates and fees for services that it provides at all public ports. This authority extends to charges, rates and fees associated with port entry, pilotage, general navigation services, dockage, site occupation, wharfage, berthing, anchorage, storage, use of Authority equipment, and port access. Charges for these services may be calculated on the basis of the gross tonnage of vessels, the quantity of cargo and number of passengers on a vessel, the term of service, or other relevant considerations.

In the context of enforcement, the director of the Marshall Islands Ports Authority, or an authorized employee of RMIPA, may also give instructions to the master (captain) of any vessel or vessel owner regarding:

- vessel movements, berthing, or moorage at any established public port;
- the discharge and loading of passengers and cargo; and,
- the movement of vehicles or personnel within public port areas.
However, Part IX of the RMI Ports Authority Act of 2003 indicates that the Secretary of the Ministry of Transportation and Communications may establish regulations regarding:

- port security;
- the movement of people, vehicles, or vessels;
- the loading and unloading of passengers and cargo;
- the prevention and containment of fuel and other petroleum product spills;
- the erection of private wharves and docks;
- the use of anchorages, moorings, wharves and docks;
- the information to be provided to masters and owners of vessels arriving and departing from public ports, as well as the goods discharged or loaded at such ports;
- the amount of charges, rates or fees payable for services provided by the Authority;

Consequently, the development of appropriate port regulations would require a coordinated effort between RMIPA and the Secretary of the Ministry of Transportation and Communications.

### 7.1.2 RMI Ports Authority Fund

Part V of the RMI Ports Authority Act of 2003 authorizes the establishment of a RMI Ports Authority Fund. This is a separate fund apart from the Marshall Islands General Fund. This provision of the RMI Ports Authority Act enables RMIPA to operate as a corporation that generates and balances revenues and expenditures. At the same time, RMIPA is accountable and subject to review by the Secretary of Transportation and Communications whom is required to annually transmit his findings to the Nitijela (the National Parliament, or legislative body).

### 7.2 ORGANIZATIONAL STRUCTURE

The Republic of the Marshall Islands Ports Authority (RMIPA) is a public corporation established by the Marshall Islands Ports Authority Act of 2003. The corporation is governed by a seven member Board of Directors. The RMI Cabinet designates one member of the Board as Chairman of the RMI Ports Authority Board of Directors. The Board of Directors is required to meet, at least, once every two months.

The director of RMIPA serves at the pleasure of the Board of Directors. The director is responsible for the day-to-day administration of the Authority, carrying out the activities delegated by the Board of Directors, and performing the functions outlined in Title 22, Chapter One, of the Marshall Islands Ports Authority Act of 2003.

Part IV of Chapter 1 also authorizes the Board of Directors to employ other technical and professional staff to carry out the various functions of the Authority. In 2013, the RMIPA staff associated with its Ports Division included approximately 28 management and staff that comprised the Assistant Director who is concurrently serving as the acting Seaport Division Manager, the operations manager and technical assistant, 20 security personnel, as well as two pilot boat operators, one mechanic, one electrician, and one boat operator helper (Figure 7-1).
RMIPA is functionally organized into two operating divisions: the Seaport Division and Airports Division. This structure enables RMIPA to effectively plan, budget, expend funds, and monitor the performance of both public ports and airports.

7.3 ROLES AND RESPONSIBILITIES FOR PORT DIVISION PERSONNEL

7.3.1 Director and Deputy Director

Overall direction for the operation of RMIPA's Seaport Division (Figure 7-1) comes from the director of RMIPA, Jack Chong-Gum. His directions are supplemented with the insights and experience of RMIPA's Assistant Director Captain Joe Tiobech.

7.3.2 Middle Management

Middle management of the Seaport Division includes a Seaport Manager and Operations Manager. In recent years, RMIPA incurred the loss of two valuable middle managers who previously served as Seaport Manager and Operations Manager (Chong-Gum and Tiobech, 2013). In response, Assistant Director, Captain Joe Tiobech, concurrently serves as Seaport Manager.

The Operations Manager position was capably filled by Robert Heine. The Operations Manager is assisted by Statistician, Carrie Junior. The Operations Manager and his staff authorize and monitor incoming vessel traffic by international vessels, coordinate vessel calls and departures with local shipping agents, authorize and document vessel movements within the Port of Majuro, coordinate requests for pilotage services, and document relevant data concerning inbound cargo and ship particulars for vessels calling on the Port of Majuro.

Day-to-day responsibilities for financial management lie with Rowena Manalo, a Certified Public Accountant. The Accountant is responsible for the Authority's disbursements for employee payroll, the management of accounts receivable and accounts payable, and preparation of all financial statements for the organization. Off-island contractors are used for the preparation of all financial audits (Manalo, 2013).

7.3.3 Operations Personnel

Operations personnel carry out port security, operations, and maintenance tasks that are requested by the seaport manager. Informal observations of their activities in January 2013 suggest that their primary activities involve the manning of the security gates at Uliga Dock, as well as two entrances to Delap Dock. Secondarily, other operations personnel are associated with the operation and maintenance of pilot boats that transport pilots to incoming and outgoing international vessels.
7.4 PORT SECURITY

7.4.1 Introduction

The Republic of the Marshall Islands is a member state of the International Maritime Organization (IMO). Since its formation in 1948, the IMO has established a variety of conventions related to the safety of merchant ships, the prevention of oil pollution from ships, maritime search and rescue, and a host of international marine transportation issues.

One of the more prominent conventions of the IMO is the International Convention for Safety of Life at Sea (SOLAS) which was adopted by IMO in 1974 and put into force in 1980. The 1974 Convention has been amended on numerous occasions. For example, the International Maritime Organization adopted the International Ship and Port Facility Security Code (ISPS Code) in December 2002; the ISPS Code became Chapter XI-2 of the International Convention for Safety of Life at Sea.

7.4.1 International Ship and Port Facility Security Code

7.4.1.1 General

The ISPS Code, which came into force in July 2004, establishes an international framework of measures that are intended to enhance maritime security through cooperative efforts by port facilities and marine transportation companies. Part A of the ISPS Code includes mandatory requirements for governments, port authorities and shipping companies that establish a process for evaluating port security threats and establishing appropriate security measures. Part B provides guidelines concerning how to meet the mandatory requirements presented in Part A (International Maritime Organization, 2013).

7.4.1.2 Responsibilities of Contracting Governments

Section Four of Part A outlines the responsibilities for contracting governments which represent member states such as the Republic of the Marshall Islands. These responsibilities require the national government to:

- set applicable security levels;
- approve a Port Facility Security Assessment and any subsequent amendments to an approved assessment;
- determine the port facilities that will be required to designate a Port Facility Security Officer;
- approve a Port Facility Security Plan and subsequent amendments to an approved facility security plan;
- exercising control and compliance measures;
- establish requirements for a Declaration of Security and,
- test the effectiveness of Ship or the Port Facility Security Plans, or related amendments to such plans (International Maritime Organization, 2013).
7.4.1.3  Responsibilities for Port Facilities

Sections 14 through 18 of Part A pertain to requirements for port facilities. Section 14 requires port facilities to act upon the security levels that are established by contracting government. In the case of the Marshall Islands, this presumably requires RMIPA to carry out appropriate security measures for each of the following levels of security that are established by the Secretary of Transportation and Communication.

- **Security Level 1**: This is the level of security required which port facilities and ships should normally operate. Security measures made under this minimum security level should generally include controlling access to port facilities, monitoring restricted areas and providing access to only authorized persons, the monitoring of berthing and anchorage areas, the routine monitoring of inbound cargo that is discharged and stored at port terminal facilities, and ensuring the availability of security communications (International Maritime Organization, 2013).

- **Security Level 2**: This security level applies to a period of time when there is a heightened security risk. This security level is established when intelligence from a reliable source indicates a potential threat to a port, type of vessel, or general geographical area even though no specific target has been identified. At this level of security, the port facility is required to carry out more intensified security measures such as a detailed inspection of all cargo operations inside the port terminal (Thoresen, 2010).

- **Security Level 3**: This security level applies to a period of time when there is a probable or imminent risk of a security incident. This security level would be established when a specific vessel or port facility has been identified as a specific target. Under this security level, cargo movements to and from the port may be suspended within all or a portion of a port terminal (Thoresen, 2010).

7.4.1.4  Port Facility Assessments

Section 15 of Part A requires port facilities of Contracting Governments, i.e., Republic of the Marshall Islands, Ministry of Transportation and Communications, to complete a Port Facility Assessment. Completion of the port facility security assessment is used to determine which port facilities require port security personnel, as well as identify issues that need to be addressed in a required port facility security plan. The Port Facility Assessment can be made by the Contracting Government, a designated authority, e.g., RMIPA, or a recognized security organization, but the Assessment must be reviewed and approved by the Contracting Government. The requirements associated with this assessment include, at least, the following:

- identification and evaluation of important port assets,
- identification of potential threats to port assets and related infrastructure, and an evaluation of the likelihood of potential threats to establish and prioritize security measures;
- identification, selection and prioritization of counter measures and procedural changes, as well as a related analysis of their effectiveness to reduce vulnerability to potential security threats;
- identification of potential security weaknesses including consideration of policies, procedures and human factors.
The Port Facility Assessment may apply to more than one port facility. If and when this approach is taken, the Contracting Government agency is required to communicate this to the International Maritime Organization.

7.4.1.5 Port Security Plan

Section 16 requires that a recognized port security organization complete a port security plan. The plan is to be reviewed by the Contracting Government.

The security plan is to determine the operational and physical security measures needed to address the three different security levels. More specifically, section 16 requires that the security plan address the following:

- measures designed to prevent weapons or other dangerous substances and devices from being introduced into the port facility or on board a ship;
- measures that prevent unauthorized access to the port facility, ships moored at the port facility, and restricted areas of the port facility;
- procedures for responding to security threats or breaches of security;
- response procedures for any security instructions that the Contracting Government may give at security level 3;
- evacuation procedures in case of security threats or breaches of security;
- duties of port facility personnel assigned security responsibilities, as well as the responsibilities of other facility personnel;
- procedures for interfacing with ship security activities;
- procedures for the periodic review and update of the security plan;
- reporting procedures associated with security incidents;
- identification of the port facility security officer and related points of contact;
- measures to ensure the security of the information contained in the plan;
- measures designed to ensure the security of cargo and cargo handling equipment;
- auditing procedures for the port facility security plan;
- response procedures when the security alert system of a ship at the port facility has been activated; and,
- procedures for facilitating shore leave for ship personnel or personnel changes, as well as access of visitors to ships.

7.4.1.6 Port Facility Security Officer

Chapter 17 of Part A requires that a port facility security officer is designated for each port facility. However, a port facility security officer may serve more than one port facility. Part A requires that the responsibilities of the port facility security officer shall include, at least, the following:

- conduct an initial comprehensive security survey of the port facility;
- ensure development and maintenance of the port facility security plan;
- implement the port facility security plan;
- make regular security inspections of the port facility;
• recommend and incorporate modifications to the port facility security plan;
• enhance security awareness and vigilance of port facility personnel;
• ensure that adequate training has been provided to other security personnel at the port facility;
• report to the relevant authorities and maintain records of occurrences which threaten the security of the port facility;
• coordinate implementation of the port facility security plan with the appropriate shipping company representatives and ship security officers;
• coordinate with any security services that may be used for port security;
• ensure that standards for port security personnel are met;
• ensure that security equipment is properly operated, tested, calibrated and maintained; and
• assist ship security officers, when requested, in confirming the identity of those persons seeking to board ships.

7.4.1.7 Security Training, Drills and Exercises

Section 18 of Part A outlines requirements for training, drills and exercises on port facility security. These requirements indicate that the port facility security officer and appropriate port security personnel will receive security training and have an understanding of their duties and responsibilities for port security. To ensure effective implementation of the port facility security plan, drills are to be carried out at appropriate intervals to take into consideration the types of operations occurring at the port, the type of vessels serving the port, changes in port facility personnel, and other relevant circumstances. The port facility security officer is also required to participate in security exercises at appropriate intervals to ensure that the port facility security plan is effectively coordinated and implemented.

7.4.1.8 Implementation of International Ship and Port Facility Security Code Requirements

The Republic of the Marshall Islands, Ministry of Transportation and Communications, as well as the RMI Ports Authority, are well aware of the requirements and guidelines contained in the International Ship and Port Facility Security Code. The RMI Ports Authority has already completed a port security plan for all port facilities in the Port of Majuro, as well as the vessel anchorage area. The security system has been tested with drills and exercises, as well as internal audits by RMIPA. Independent maritime auditors have also recently completed a follow-up audit of the security system (Tiobech, 2013). These accomplishments and actions indicate complete compliance with the establishment and sustained operation of a port facility security system that meets the requirements of the International Ship and Port Facility Security Code.

7.4.1.9 Modifications to Security Fencing and Procedures at Delap Dock

A security fence is located along the south side of the existing dock apron at Delap Dock. There are two openings along the security fence that enable the movement of cargo handling equipment during the loading and unloading of cargo vessels. When cargo handling operations are completed, these openings are closed with the replacement and locking of movable gates. The
past installation of a security fence on the south side of the dock apron is understandable given the potential accessibility of unauthorized pedestrian access from the Tobolar Coconut Processing Authority complex on the east side of the dock apron.

However, any fence between the dock apron and adjacent container stacking/storage area slows the movement of forklifts and top picks that move containers and other general cargo to and from the dock apron. The efficient movement of inbound and outbound cargo is vital to achieve more efficient turn-around times for incoming cargo vessels. In addition, existing gates are just wide enough to enable the passage of existing cargo handling equipment.

To eliminate this constraint, the fence between the dock apron and container stacking/storage area should be removed and replaced by the continued presence and patrolling of RMIPA security officers along the dock apron. The north entry of the northernmost Tobolar warehouse building should also be locked and opened only by port security officers during the loading of copra from the interisland cargo/passenger vessels that moor along the Delap East Dock or the performance of other maintenance activities on the warehouse exterior.

## 7.5 FINANCIAL POSITION

### 7.5.1 General

In order to assess the general financial position of RMI Ports Authority, available data from audited financial reports for FY 2010 and 2011 were reviewed, as well as an unaudited financial report for FY 2012. The fiscal year for RMIPA extends from October 1 through September 30.

This brief analysis devotes particular attention toward the revenues and expenditures of the Seaport Division in order to assess the sustainability of its management and port operations.

### 7.5.2 Revenues

In FY 2012, the Seaport Division received a gross income of roughly $2,097,018. This income reflected various sources of revenues that RMIPA received for the use of various port facilities in the Port of Majuro. The top five sources of incomes included pilotage fees (27 percent), wharfage fees (20 percent), pilot boat usage fees (17 percent), vessel entry fees for international and domestic vessels (12 percent), and dockage fees for international and domestic vessels (10 percent). On a cumulative basis, these five sources of income accounted for about 86 percent of the revenue generated from port uses supported by the operations of the Seaport Division in FY 2012.

Each of the primary sources of revenue generated by seaport operations rose between FY 2010 and 2012. However, wharfage fees declined almost 12 percent between FY 2011 and FY 2012 due to a significant reduction in fees collected for the delivery of petroleum products.

At the time of this report, port regulations are in the process of being revised to address various port management considerations, as well as concerns of some port users. One anticipated
revision is making the pilotage of vessels an optional service that can be provided by RMIPA in
cooperation with local pilots from the Republic of the Marshall Islands Pilots Association.
While this change will be welcomed by some shipping companies, vessel captains and owners,
incoming vessels will continue to be required to pay pilotage fees. However, local pilots will no
longer be compensated for their performance of pilotage services (Chong-Gum, 2013).

7.5.3 Cost of Management, Operations and Maintenance

In FY 2012, RMIPA expended approximately $1,861,813 for the management, operation and
maintenance of port facilities in the Port of Majuro. This included an estimated $436,419
associated with the depreciation of related RMIPA assets. Consequently, actual FY 2012 costs
for management, operations and maintenance included expenditures of only $1,425,394.

Aside from estimated depreciation, the more prominent expenditures in FY 2012 included
employee payroll and fringe benefit expenditures, pilotage expenses associated with payments to
local pilots of the Republic of the Marshall Islands Pilot Association, contributions to the RMI
General Fund, and pilot boat expenses. These four expenditures comprised almost 62 percent of
all expenditures in FY 2012.

Between FY 2010 and FY 2012, salaries and wages associated with the Seaport Division
decreased from $430,595 in FY 2010, rose to $466,090 in FY 2011, and fell to $412,939 in FY
2012. The decline in FY 2012 reflects no salary payments for, at least, one unfilled middle
management position within the Seaport Division.

Pilots from the Republic of the Marshall Islands previously received approximately 40 percent
of all total pilotage fees collected by RMIPA. In FY 2012, RMIPA paid roughly $254,890 for the
performance of these services. As stated earlier, these expenditures will not continue with the
recent revision of port regulations.

RMIPA contributed approximately $500,000 to the RMI General Fund in FY 2011 and a
subsequent contribution of $250,000 in FY 2012. These payments were made to demonstrate the
commitment of RMIPA to assist the national government when its financial condition allows.
However, there are no provisions in the Marshall Islands Ports Authority Act of 2003 that require
annual payments to the RMI General Fund. In the coming decade, it is anticipated that increased
expenditures will need to be made for the repair and maintenance of port facilities.
Consequently, any future contributions to the RMI General Fund will likely need to decrease, or
be discontinued, until operational expenditures can be offset by a greater increase in future
revenues.

Between FY 2010 and FY 2012, expenses associated with the operation of the RMIPA pilot
boats has decreased slightly. These expenses largely reflect purchases of gasoline and oil for the
operation of outboard motors. In FY 2010, total pilot boat expenses totaled about $192,535.
These expenditures then declined to $74,426 in FY 2011, but then spiraled upward to
approximately $186,447 in FY 2012. The significant rise and fall of pilot boat expenses is
probably due to a smaller number of vessel trip by pilot vessels in FY 2010 and some variability
in local prices for gasoline and oil.
Total repairs and maintenance costs in FY 2012 included only $3,490 in expenditures associated with office equipment, transportation equipment, buildings and other port facilities. This suggests that port facilities received a very limited amount of maintenance and few repairs. Repair and maintenance costs incurred in FY 2012 are significantly less than what was expended for repair and maintenance in both 2010 ($11,248) and 2011 ($6,094). Needed facility repairs and the establishment of a more aggressive, preventative maintenance program can be expected to generate a significant increase in repair and maintenance expenditures.

7.5.4 Sustainability of Future Port Operations

7.5.4.1 Demonstrated Capability to Meet Future Operation and Maintenance Expenditures

An unaudited profit loss statement for FY 2012, which reports a net income of about $323,994, strongly suggests that RMIPA will continue to be able to meet normal operation and maintenance expenditures with incoming revenues. An increasing volume of vessel calls will continue to expand the amount of revenues gained from various port related fees. However, the establishment of a preventative maintenance program will also increase the volume of expenditures for port facility operations and maintenance. Despite these expenditures, it is anticipated that RMIPA revenues will exceed operation and maintenance expenditures during the coming decade.

7.5.4.2 Reserve Fund for Unanticipated Repairs and Maintenance

In view of the prospects for a lower net income, it is recommended that a reserve fund for unanticipated repairs is established within the RMIPA Budget. An annual budgetary allocation should be made to this fund in order to ensure the financial capability of RMIPA to respond effectively to unforeseen emergency repairs.

The 2012 profit-loss statement indicates that RMIPA is receiving some interest income from profits gained on an annual basis. These funds could be used to establish such a fund within future budgets of RMIPA.

7.5.4.3 Lack of Capital to Support Future Port Improvements

While the balance between Seaport Division revenues and expenses appears favorable, it is abundantly clear that RMIPA will continue to need capital for the design and construction of any significant facility repairs, facility renovations, or new construction. The continued commitment of the Nitijela will be necessary to provide some financial support for the replacement and renovation of some existing facilities, as well as the construction of new facilities, for the Port of Majuro. Concurrently, RMIPA will need to borrow capital, as well as seek and obtain grants from multi-national organizations and other government agencies to complete the port improvements recommended in the Port of Majuro Master Plan.
7.6 PORT MANAGEMENT, OPERATIONS AND MAINTENANCE NEEDS

7.6.1 Automated Identification System

RMIPA needs to establish an automated identification system (AIS) in the Port of Majuro that can provide vessel location data to RMIPA’s Seaport Manager and Seaport Operations Manager, as well as international shipping companies, vessel owners, shipping agents, and other related organizations around the world. Through the use of an existing vertical high frequency (VHF) antenna on the RMIPA office building, RMIPA can link local vessel locations to an international vessel database for cargo, fishing, and oil tanker vessels. Through its cooperation with companies, e.g., Fleetmon or AISLive, RMIPA could receive complimentary software that would enable its access to the same vessel databases accessed by international shipping companies.

Establishment of an automated identification system for the Port of Majuro is possible because most international cargo ships, fishing vessels, and oil tankers have AIS transponders on board. In December 2004, the International Maritime Organization (IMO) required all vessels over 299 Gross Tonnage to carry an AIS transponder on board. AIS transponders typically include a global positioning system (GPS) receiver, which collects vessel position and movement information, as well as a VHF transmitter that transmits vessel position, speed and course, and other information such as vessel name, dimensions and voyage details to designated VHF channels.

This enables vessel location data to be transmitted to the public domain, e.g. port authorities. Other vessels or base stations are also able to receive the information using available computer software applications.

Vessels having an AIS receiver connected to an external antenna that is installed 15 meters above sea level will typically receive information within a range of 15-20 nautical miles. Base stations at higher elevations may extend 40 to 60 nautical miles. The extent of coverage is also dependent on other factors such as the type of antenna used, potential obstacles around the antenna, and local weather conditions.

The use of this technology will enable RMIPA’s Seaport Manager and Operations Manager to readily locate and monitor the position of most incoming international vessels once they enter the Port of Majuro. The use of software that is used to display vessel locations and other vessel data will enable operation managers to confirm authorized and unauthorized vessel movements.

7.6.2 Preventative Maintenance Program

7.6.2.1 Program Development

The establishment of a preventative maintenance program for all port facilities is needed to extend the service life of all facilities, reduce expenditures for unanticipated repairs, organize the activities of facility operations personnel, minimize disruptions to port activities, and establish realistic annual budgets for facility maintenance and repairs. Onsite observations of Uliga Dock and Delap Dock in January 2013 reveal that some facility maintenance is taking place, but only
to a limited extent. RMIPA can rely upon its lessees to provide only limited general maintenance in specific work areas, but not the maintenance of supporting facilities and utilities, e.g., lighting and bollards, that are located within specific work areas.

The basic approach to preventative maintenance generally involves identifying the tasks and time needed to maintain each port facility, determining how often the tasks should be completed, identifying which personnel are needed to get the job done, as well as estimating and documenting the cost of labor, equipment, materials and supplies for each maintenance task. Various computerized maintenance management software applications are available to help organize and support the development of a preventative maintenance program.

For the Port of Majuro, the development of a preventative maintenance program would ideally be broken down into facility maintenance tasks for each facility within each functional area of the port. For example, navigation aids are facilities located within the Calalin Channel and port fairway. Bollards and fenders are facilities that support vessel berths at both Uliga Dock and Delap Dock. The CFS warehouse is located in the secondary container yard area.

7.6.2.2 Program Implementation

Once a preventative maintenance program is established, RMIPA will likely need to bring on board a new facility maintenance supervisor for the Seaport Division. The facility maintenance supervisor will need to survey existing facilities and input relevant facility asset information into a computerized maintenance management software, e.g., MEX CMMS. Based upon the experience of the facility maintenance supervisor, specific work orders will be created and scheduled for all port facilities using the selected computerized maintenance management software.

Subsequently, RMIPA will need to hire additional personnel to establish a small maintenance crew to carry out scheduled work tasks. The maintenance crew will be supervised by the facility maintenance supervisor. The maintenance crew will need to comprise a combination of technical skills associated with the maintenance and repair of electrical and mechanical systems, repairs and maintenance of dock surfaces, the servicing of back-up of diesel or gas engine generators, the maintenance of a stand-alone fire protection system, painting, the operation of various types of small maintenance equipment, cleaning of offices and warehouse facilities, and other general maintenance tasks.

Existing pilot boat operators and crew could also be added to the facility maintenance crew. While these personnel primarily transport pilots to vessels requesting pilotage services, these personnel will be needed to support the maintenance of navigation aids, dock fenders, and the occasional collection of solid wastes in Majuro Lagoon.

7.6.2.3 Anticipated Cost for Preventative Maintenance Program

The establishment of a preventative maintenance program will require expenditures for:

- RMIPA personnel who will supervise and carry out scheduled maintenance tasks;
- Purchase of computerized maintenance management software;
- The purchase of materials, maintenance equipment, replacement parts, and consumable supplies need;
• the purchase of some small equipment supporting maintenance activities and,
• the maintenance of pilot boats that support pilotage services and the maintenance of facilities in Calalin Channel and port fairway.

The start-up costs associated with establishing the preventative maintenance program include the employment of a facility management supervisor and maintenance crew, as well as the purchase of computerized maintenance management software. Annual labor costs will require an expenditure of roughly $93,080. The purchase of maintenance management software will initially cost approximately $3,525 for the first year of use. Thereafter, annual support agreements for the software will require annual expenditures of $800.

Various types of equipment are envisioned for use by the Facility Maintenance Section of RMIPA's Seaport Division. Small maintenance trucks will be needed for the electrician and mechanic who will typically carry a range of small tools to various locations on both Uliga Dock and Delap Dock. General dock maintenance workers will need access to a small skid steer for the removal and delivery of materials and replacement parts to port facilities. A pick-up truck will help facilitate the collection of solid waste materials from the Port of Majuro and the delivery to Majuro's sole landfill facility. Ladders and other small tools will be required to support all maintenance and repair activities.

On a cumulative basis, it is estimated that the annual costs of the preventative maintenance program will require an expenditure of roughly $156,042 (Table 7-1). While pilot boats are included in the equipment that will be used for the preventative maintenance program, RMIPA already owns and operates two pilot boats. RMIPA may also own other existing equipment, e.g., used trucks, and small tools, and available consumable supplies that could be assigned to the new preventative facility maintenance program. If so, other available equipment, small tools, and consumable supplies would help defray the initial expenditures required to initially organize the preventative maintenance program.
### TABLE 7-1
#### ANTICIPATED ANNUAL COST
#### PREVENTATIVE MAINTENANCE PROGRAM
#### PORT OF MAJURO

**LABOR**

<table>
<thead>
<tr>
<th>Personnel</th>
<th>Number</th>
<th>Annual Salary $</th>
<th>Extension $</th>
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<tr>
<td>Facility Maintenance Supervisor</td>
<td>1</td>
<td>14,000</td>
<td>14,000</td>
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<td>Electrician</td>
<td>1</td>
<td>7,800</td>
<td>7,800</td>
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<tr>
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<tr>
<td>Mechanic</td>
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<tr>
<td>Mechanic Helper</td>
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<tr>
<td>General Dock Maintenance Worker</td>
<td>2</td>
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<tr>
<td>Pilot Boat Operator</td>
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<td>Pilot Boat Crew</td>
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<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>93,080</strong></td>
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</tr>
</tbody>
</table>

**EQUIPMENT**

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<th>No. of Units</th>
<th>a) Unit Amortization $</th>
<th>Extension $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pilot Boats</td>
<td>2</td>
<td>Already owned by RMIPA</td>
<td>0</td>
</tr>
<tr>
<td>Small Maintenance Truck</td>
<td>2</td>
<td>$2,880 per vehicle</td>
<td>5,760</td>
</tr>
<tr>
<td>Skid Steer ($8,000)</td>
<td>1</td>
<td>$2,304</td>
<td>2,304</td>
</tr>
<tr>
<td>Pick-up Truck ($15,000)</td>
<td>1</td>
<td>$4,320</td>
<td>4,320</td>
</tr>
<tr>
<td>Ladders</td>
<td>4</td>
<td>N/A</td>
<td>1,200</td>
</tr>
<tr>
<td>Small Tools</td>
<td></td>
<td>N/A</td>
<td>5,000</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td></td>
<td><strong>18,584</strong></td>
<td></td>
</tr>
</tbody>
</table>

**CONSUMABLE SUPPLIES AND MATERIALS**

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost $</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paint</td>
<td>3,000</td>
</tr>
<tr>
<td>Electrical Parts and Supplies</td>
<td>2,000</td>
</tr>
<tr>
<td>Boat/Engine Parts and Supplies</td>
<td>2,500</td>
</tr>
<tr>
<td>Fuel</td>
<td>10,000</td>
</tr>
<tr>
<td>Trash Bags and Cleaning Supplies</td>
<td>3,000</td>
</tr>
<tr>
<td>Computer Software Purchase</td>
<td>2,725</td>
</tr>
<tr>
<td>Annual Computer Software Support</td>
<td>800</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>24,025</strong></td>
</tr>
</tbody>
</table>

| Total                         | 135,689  |
| 15% Contingency               | 20,353   |
| **GRAND TOTAL**               | **$156,042** |

Notes: a) Annual cost assumes 4-year amortization of total equipment cost @ 7 percent per annum.
7.6.3 Revised Port Regulations

A set of informal port regulations have been put into practice at the Port of Majuro for, at least, two decades (Tiobech, 2013). These informal regulations generally encompass:

- vessel entry;
- pilotage;
- authorization, procedures, and priorities related to the berthing and anchorage of vessels;
- vessel movements within the Port of Majuro;
- procedures necessary to gain authorization to complete in-port vessel repairs;
- the prevention of pollution from vessels;
- responsibilities, procedures, and liabilities associated with the handling of inbound and outbound cargo; and,
- port security.

A formal set of port regulations needs to be adopted by the Board of the RMI Ports Authority. A new set of regulations should be better organized to incorporate a wide range of issues. Regulations and procedures should also be formatted to facilitate a convenient review by a wide range of port users. Illustrations and digital photos should be incorporated into the regulations to enable a better understanding of port regulations and procedures. Consideration should also be given to how the port regulations will be made available to port users given the range of available technologies, e.g., the Internet, smartphones, tablets, and other mobile devices.

The scope of existing regulations should initially be discussed with the Seaport Manager to determine which existing regulations should remain, be revised, or deleted from the new regulations. Other regulatory issues, e.g., vessel discharges, should be modified to reflect any new regulatory authorities of the RMI Environmental Protection Agency and/or other national agencies. Port security regulations need to be updated in view of changed security procedures that have been established since the implementation of the International Ship and Port Facility Security Code requirements.

7.7 RMIPA FACILITY LEASES

7.7.1 Delap and Uliga Leases

In Marshallese culture, land is considered to be a valuable asset. Traditionally, land holdings are typically divided into sections of land known as wetos which extend from the lagoon to the ocean in variable widths. These strips of land divide the islets of the atoll into various land parcels. The wetos are held communally by lineage, or bwij members, and generally inherited on a matrilineal basis. Control of the wetos is the responsibility of four traditional community and family representatives.

The Iroijlaplap (paramount chief)– is the overall “owner” and final distributor of all land interests under his jurisdiction. He does not need to be a member of the bwij that lives on that parcel of land, but he has ultimate say in land disputes or other matters.
The Iroij Edik – is a sub-chief who acts as an intermediary between the Iroijlaplap and the Alab and Dri Jerbal.

The Alab – is the person in immediate charge of a piece of land and is the head of the bwij. The Alab would represent the bwij in all negotiations with the Iroijlaplap or Dri Jerbal.

The Dri Jerbal – is typically the person who plants, clears and makes improvements on the land. In return, the Dri Jerbal and his or her immediate family live on the land (Boer, 1995).

In Majuro, and throughout the Marshall Islands, the RMI government sometimes does not own the land where their facilities or offices are located. As a result, some public facilities are constructed on privately-held lands. Similarly, RMIPA has entered into long term leases with landowners in the vicinity of Delap and Uliga docks. The current lease rate is $3,000 per acre per year.

7.7.1.1 Delap Dock Lease

The Delap Dock area is under two different ground lease agreements. The first ground lease agreement is part of the Enedrik Weto and is referred to as MI-012-95. This agreement is signed by the local Iroijlaplap, Iroij Edik, Alab, Sr. Dri Jerbal of the Enedrik Weto and the RMI Ministry of Internal Affairs. MI-012/95 is the survey plat map that illustrates the land area encompassed by the first ground lease; this survey plat map is filed in the Office of the Division of Lands and Surveys. This plat is for a square section of land that comprises approximately 0.4117 hectares (1.0173 acres) of land area. This area is situated almost entirely outside of the fenced container yard. There is a small section of land on the east side of this plat that, which comprises approximately 0.0072 hectares (0.18 acres), that falls within the fenced container yard. This section of land is located within the purple shaded area depicted in Figure 7-1. Most all of the remaining plat is occupied by the Ministry of Public Works which operates an office west of the Delap container yard.

The second ground lease agreement is part of the Lobotin Weto and is referred to as MI-05-1187. This agreement is signed by the local Iroijlaplap, Alab, Dri Jerbal of the Lobotin Weto and the RMI Ministry of Internal Affairs. The original plat of land associated with this lease was rectangular in shape and comprised 2.4125 hectares (5.9614 acres) of land. This land area is depicted on survey plat map SK/007/94 which is filed with the Division of Lands and Surveys. However, on June 14, 2010, the original ground lease was amended to reflect the updated survey plat map MI-044/09 which is also filed with the Division of Lands and Surveys. The amended plat added 1.7181 hectares (4.2455 acres) of land to the original ground lease agreement. Consequently, lots A and B comprise a combined land area of 4.1306 hectares (10.2069 acres).

Although the updated plat map is a closer resemblance of the land area for the Delap container yard, there are several discrepancies and areas that are outside of the main fenced in Delap container yard (Figure 7-1). They consist of approximately 0.2534 hectares (0.626 acres) of land.
west of the Delap fence that are situated within the Ministry of Public Works complex, 0.2867 hectares (0.7085 acres) of land that is actually north of the dock apron completely within the lagoon waters, and 0.1970 hectares (0.4868 acres) that is east of the Delap container yard within the MEC complex. In addition, there is approximately 0.2802 hectares (0.6924 acres) of land that is within the Delap container yard, but is not a part of the ground lease agreement. This section of land is located at the Delap Dock Maintenance building (Figure 7-1). There is also a portion of land that is apparently covered under both ground lease agreements, which suggests that the ground lease for this section of land may be being leased twice. This section of land, which includes approximately 0.019 hectares (.0470 acres), is located within the Ministry of Public Works complex (Figure 7-1). On a cumulative basis, RMIPA’s ground lease includes about 0.8686 hectares (2.1464 acres) of land that is located outside of the general limits of the Delap container yard area.

Since RMIPA is paying an annual ground lease for the land at Delap Dock, it is recommended that the plat map for the Delap dock be corrected to reflect the actual boundaries of the Delap Dock area that is being used and/or intended to be used by the RMI Ports Authority during the coming decade. Subsequently, the RMIPA ground lease should be amended to reflect the land area depicted on the revised plat map. Separate lease agreements would need to be established for lands associated with the Tobolar Coconut Processing Authority and the Marshalls Energy Company complex. The plat amendment process would require the cooperative effort of RMIPA, the Ministry of Public Works, the Marshalls Energy Company, and the Tobolar Copra Processing Authority.

In order to define its intended lease area, RMIPA should retain a licensed surveyor to create a new boundary map of the Delap Dock area that could encompass the container stacking/storage area and the secondary yard area, as well as any planned expansion area. It is also recommended that this survey be tied into both local survey benchmarks, as well as nearby National Geodetic Survey (NGS) benchmarks for horizontal control which are based on the World Geodetic System of 1984 datum. Global positioning system (GPS) coordinates are typically based upon this datum. The closest NGS benchmark would be the Delap benchmark which is a United States Geological Survey (USGS) aluminum disk that is cemented in a concrete sidewalk near the RMI Capitol building.

7.7.1.2 Ulaga Dock Lease

The Ulaga Dock and surrounding area is located in the Toeak Weto. There is one ground lease for this portion of land which is signed by the local Iroijedrik, Alab, Dri-Jerbal, and the Secretary of the RMI Ministry of Internal Affairs. The lease agreement is based on plat map MI-027-90 which was registered by the Division of Lands and Surveys which in 1990. Although the maps are over 20 years old, they generally conform to the area of operations at Ulaga Dock and surrounding buildings. This lease expires on December 31, 2019.

It is recommended that this ground lease be updated to reflect the most current survey plat map for the area. RMIPA will need to retain a licensed surveyor to review the plat map and perform a boundary survey. This will enable the surveyor to provide a map that displays the limits of the plat, as well as highlight the limits of the lease area included in the ground lease. The boundary
survey should be tied into the NGS benchmark referred to as “Majuro” which is located on the southwest corner of the Uliga pier. This would allow the survey to be referenced to the WGS 84 worldwide coordinate system. If the current plot map is only referenced to a local coordinate system, it is recommended that a licensed surveyor be retained to tie the plot map to that benchmark. When any of the recommended improvements are planned and designed, the ground lease agreement should be updated to reflect any changes or expansion of the Uliga Dock area.