



OFFICE OF THE PUBLIC AUDITOR
REPUBLIC OF PALAU

AUDIT REPORT
ON
SOLID WASTE MANAGEMENT OF M-DOCK LANDFILL



SOLID WASTE MANAGEMENT OFFICE
BUREAU OF PUBLIC WORKS

MINISTRY OF PUBLIC INFRASTRUCTURE, INDUSTRY AND COMMERCE
REPUBLIC OF PALAU

FOR THE PERIOD OF OCTOBER 1, 2007 THROUGH SEPTEMBER 30, 2009

Prepared by the Office of the Public Auditor

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REPUBLIC OF PALAU

Office of the Public Auditor

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August 17th, 2010
Serial#: opa10-114au

Honorable Jackson Ngiraingas
Minister
Ministry of Public Infrastructure, Industry, and Commerce
Koror, Republic of Palau 96940

Subject: Final Audit Report on Cooperative Performance Audit of Solid Waste Management of M-Dock Landfill for period of October 1, 2007 through September 30, 2009

Dear Minister Ngiraingas:


This report presents the results of our audit on Solid Waste Management (SWM) of M-Dock Landfill of the Bureau of Public Works, Ministry of Public Infrastructure, Industry, and Commerce for the period from October 1, 2007 through September 30, 2009.

The Office of the Public Auditor (OPA) received your response to the draft audit report. Your response has been incorporated and published in the final audit report.

The OPA has established an Audit Recommendation Tracking System (ARTS) to keep track of the status of recommendations issued in this report. Accordingly, the OPA will conduct follow up inspections on your responses and corrective action measures to assess their implementation and operation. On a semi-annual basis, June 30 and December 31 each year, the OPA will report the status of the recommendations to the Office of the President and Presiding Officers of the Olbiil Era Kelulau for their information and disposition.

If you have any questions regarding matters of audit findings and recommendations, the OPA will be available to discuss such matters at your request.

Sincerely,



Satrunino Tewid
Acting Public Auditor
Republic of Palau

Solid Waste Management Office
Bureau of Public Works
Ministry of Public Infrastructure, Industry and Commerce

Performance Audit Report On
Solid Waste Management of M-Dock Landfill

Republic of Palau

For the Period from October 1, 2007 to September 30, 2009

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EXECUTIVE SUMMARY

August 17th, 2010

Honorable Jackson Ngiraingas
Minister
Ministry of Public Infrastructure, Industry, and Commerce
Koror, Republic of Palau 96940

Subject: Final Report on Cooperative Performance Audit of Solid Waste Management of M-Dock Landfill for the period from October 1, 2007 through September 30, 2009.

Dear Minister Ngiraingas:

This audit report presents the results of the Office of the Public Auditor's (OPA) cooperative performance audit on Solid Waste Management of the M-Dock Landfill for the period from October 1, 2007 through September 30, 2009.

The objective of the audit was to assess the effectiveness of Solid Waste Management (SWM) within the Republic of Palau, in particular the M-Dock Landfill, by auditing (1) existence of a legal and policy framework for Solid Waste Management; (2) the process by which the legal and policy framework is implemented, including whether risks to implementation have been considered; and (3) compliance with the legal and policy framework, including monitoring arrangements.

Discussed below are audit issues and deficiencies the OPA found and the recommendations, which OPA believes, if implemented, will correct these deficiencies:

Line of Enquiry (LOE) 1: Legal Framework for Solid Waste Management

Criterion 1 - There should be regulation(s) and plan in place to direct SWM and entity who takes full responsibility for management and operation of the M-Dock Landfill.

Finding 1.1.1: Solid Waste Management Plan

The Solid Waste Management office of the Bureau of Public Works has been operating the M-Dock Landfill without approval by the Environmental Quality Protection Board (EQPB) of its Solid Waste Management Plan in violation of Section 2401-31-34 of Solid Waste Regulations.

Recommendation

The OPA recommends the SWM office takes full responsibility and comply with SWM regulation 2401-31-34 by submitting the draft National Solid Waste Management Plan (NSWMP) to the EQPB for review and approval.

Finding 2.1.1: Performance Bond

The EQPB did not impose a performance bond on the SWM Office and, as such, the Office has never had a performance bond in place to guarantee proper operation and closure of the M-Dock solid waste facility.

Recommendation

The OPA recommends the EQPB impose a performance bond on the SWM office in order to provide guarantee for the proper operation and closure of the M-Dock Landfill.

Finding 3.1.1: Discretionary Requirement

The OPA found that the M-Dock Landfill is not properly fenced and gated to provide controlled access to the dumpsite in accordance with SWM regulation Section 2401-31-16.

Recommendation

The OPA recommends the SWM office construct a security fence with gates around the perimeter of the M-Dock Landfill to provide controlled access to the facility in accordance with SWM regulation.

Criterion 2 - There should be a legal framework to address recycling activities in Palau.

Finding 4.1.2: Delay in Implementation of Recycling Act

The *Recycling Act (RA) 2006* does not have enabling regulations in place to implement the act, which regulations are pending review and approval by the President of the Republic.

Recommendation

The OPA recommends the Director of Bureau of Revenue, Customs and Taxation and the SWM Office meet with the Minister of Finance and Minister of Public Infrastructure, Industry, and Commerce to advise the Ministers of the status of the Recycling Program and the urgency by which the Recycling Program Regulations awaits review and approval by the President in order to implement the Recycling Program.

Criterion 3 - There should be an established Initial Redemption Center for the Republic, as required by the Recycling Act.

Finding 5.1.3: Initial Redemption Center

The recycling facility established by Koror State Government (KSG) as an Initial Redemption Center

is unable to proceed to collect or receive recyclable containers as set out in the objectives of the Act without approval of the Recycling regulations by the President of the Republic.

Recommendation

The OPA recommends the Director of Bureau of Revenue, Customs and Taxation and the SWM Office meet with the Minister of Finance and Minister of Public Infrastructure, Industry, and Commerce to advise the Ministers of the status of the Recycling Program and the urgency by which the Recycling Program Regulations awaits review and approval by the President in order to establish and operate a redemption center.

LOE 2: Effective Implementation of the Framework

Criterion 1 - Sufficient funding is critical to support the proper operation and management of solid waste disposal facility.

Finding 6.2.1: Insufficient Funding for Operation of M-Dock Landfill

Funds appropriated by Congress in FY 2008 and 2009 for the management and operation of the M-Dock Landfill were inadequate to sustain an environmentally-safe and well maintained facility.

Recommendation

The OPA recommends the Solid Waste Management Office and the Steering Committee meet with the Minister Public Infrastructure, Industry, and Commerce to discuss the operations of the M-Dock Landfill, its proposed budget, and the NSWMP to familiarize the Minister of its operations, the urgency to fund operations at a level that assures upkeep of the facility, and the future of solid waste management outlined in the NSWMP. In addition, the Steering Committee should meet with the President of the Republic and the appropriate Committees of the Congress (Senate and House of Delegates) to address similar concerns.

Criterion 2 - A self-financing fee structure will subsidize the cost of operations of the Landfill

Finding 7.2.2: Fee System

The audit revealed that the Solid Waste Management Office, which operates and manages the M-Dock Landfill, is under-funded and the Draft NSWMP, which includes a proposal to charge a tipping fee for dumping rubbish at the landfill, has not been approved by the EQPB.

Recommendation

The OPA recommends the President of the Republic reviews and approves the Beverage Container Recycling Regulation to enable the Act to take effect and fully achieving its objectives set out in the Recycling Act. Furthermore, the Office of the Attorney General should consider an immediate review

of the Tipping Regulation for legal matters and submit the regulation to SWM Office for finalization.

Criterion 3 - Public Awareness is an effective tool to educate public on waste management to enhance the quality of the environment.

Finding 8.2.3: Public Awareness

Public awareness on Waste Management (WM) of M-Dock Landfill is not in a suitable approach to educate the public. Because of insufficient funding, the SWM educator cannot develop effective community outreach programs to inform commercial and residential establishments of the challenges in SWM and also develop and coordinate programs that enhances quality of SWM.

Recommendation

The OPA recommends the Palau National Congress to appropriate sufficient funds to the SWM office to enable the office to effectively deliver public outreach programs to educate public on solid waste management of the National landfill.

LOE 3: Monitoring and reporting of compliance with the legal framework

Criterion 1 – Inspections and reporting for environmental and public health risks.

Finding: 9.3.1: Environmental Inspections – EQPB

According to the EQPB Assistant Executive Officer, the EQPB conducts two (2) types of inspections at the Landfill; namely visual and testing for pollutants. The official stated that the last visual inspection conducted by the EQPB was during the rehabilitation of the Landfill, some four years ago, however, test of contaminants in the seawater is routinely conducted since 2006. In addition, the EQPB did not conduct leachate inspections as called for in the M-Dock Operations Manual.

Recommendation

The OPA recommends the EQPB conduct both visual inspections and seawater testing at the designated locations at the Landfill. Visual inspections are necessary to ensure the SWM personnel at the Landfill are not permitting prohibited waste into the Landfill and to ensure the proper maintenance of the facility. Seawater inspection is critical in order to monitor the impact of runoff contaminants on the quality of seawater in the surrounding area.

Finding: 10.3.1: Public Health Safety Inspections

Lack of inspections by the Division of Environmental Health (DEH), Ministry of Health, creates a potential risk for vectors and other diseases to spawn inside the landfill, and without timely detection and containment, could pose a health threat to the workers, facility users, and the public.

Recommendation

The OPA recommends the Division of Environmental Health reconsider conducting regular inspections at the M-Dock Landfill. Only proactive inspection regimes will effectively detect and contain potential dangers to public health safety.

Criterion 2 - Waste inspection at the gate of M-dock Landfill is critical to enhance their proper disposition.

Finding: 11.3.2: Inspection of Waste Hauled to Landfill

Although waste is inspected and recorded at the gate entrance, the actual dumping of waste in the Landfill is not visually inspected to ensure proper segregation of waste, detection of illegal waste that may be concealed, and bulky waste that should be dissevered.

Recommendation

The OPA recommends the SWM Office establish and enforce a system whereby wastes are segregated according to different types within the landfill. Further, landfill attendants should observe the actual dumping of waste to ensure that prohibited wastes are not being concealed and dumped illegally.

Criterion 3 - Performance Report should be submitted no later than April 15th of each year.

Finding 12.3.3: Performance Reporting

The SWM office of the Bureau of Public Works failed to prepare and submit Performance Reports as required by the Republic of Palau Public Law (RPPL) 6-11, section 371.

Recommendation

The OPA recommends the SWM office prepare and submit a Performance Report annually in accordance with RPPL No. 6-11 and related amendments thereto. In addition, the Director of Bureau of Public Works should perform the necessary supervision to ensure that Performance Reports and related responsibilities of the SWM office are timely performed.

Finally, Office of the Public Auditor would like to thank the staff and management of the Solid Waste Management Office of National and Koror State Government, Division of Environmental Health, Ministry of Health, and the Environmental Quality Protection Board for the professional courtesy and cooperation extended us during the audit.

Sincerely,



Satrunino Tewid
Acting Public Auditor

INTRODUCTION

In July 2009 at the 12th Pacific Association of Supreme Audit Institutions (PASAI) Congress in Palau, the public auditors/auditor generals from around the Pacific Rim resolved to conduct a cooperative performance audit on Solid Waste Management (SWM). The Supreme Audit Institutions participating in the audit include Guam, Republic of Marshall Islands, Federated States of Micronesia, Cook Islands, Fiji, Papua New Guinea, Samoa, Tonga, Tuvalu and Republic of Palau. The participating members met in Fiji from October 19th to 25th 2009 for a planning meeting. The planning meeting enabled each participating audit team members to develop audit work program for SWM of their respective country and share and learn with other Supreme Audit Institutions audit team.

Waste is a continually growing problem, globally, regionally, and locally. The handling of waste, e.g. through incineration or landfills, usually leads to discharges into the soil, air, and water and is a source of global and local pollution. The problem is accelerated and exacerbated by trends in consumption and production patterns and by the continuing urbanization of the world. The costs associated with the proper handling of waste make it profitable to ignore waste treatment and to dispose of waste in a way that is dangerous to human health and the environment. Illegal dumping and unauthorized exports are examples of criminal activities associated with the handling of waste.¹

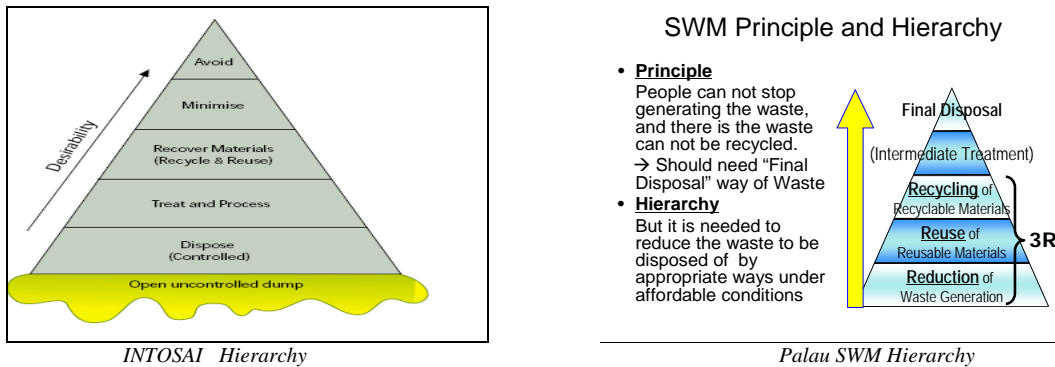
A clear, concise and consistent policy is a necessary requirement for the waste production to establish and set up waste management systems and make necessary investments. Thus, a well-established and supported waste policy is of crucial importance in waste management.

A list of priorities (the waste hierarchy), which has been adopted in most countries, is shown in **Figure 1** below. Palau SWM waste hierarchy goals is similar to the International Organization of Supreme Audit Institutions (INTOSAI) hierarchy goals. Pyramids are often used to describe the goals for a process; the higher up the pyramid you are, the closer you have come to your goal. The three R's (Reduce, Reuse and Recovery) of waste management cover the upper three stages of the pyramid and should be the goals for handling of waste. However, the economic situation in the region will often dictate what actually happens to the waste. In many countries, the cost of land filling (or leaving the waste at open dumps) is low compared with the cost of implementing the three R's. This results in landfills and dumps being the most common solution. Thus, even if open dumps are the least desirable solution, this is actually the most commonly used method of waste disposal in many countries.²

¹ INTOSAI, *Towards Auditing Waste Management*, p.9.

² Ibid, p.81.

Figure 1: The Waste Hierarchy



BACKGROUND

Solid Waste Management (SWM) in Palau

The Republic of Palau is comprised of a 350 island archipelago located in the south-western Pacific Ocean. The largest island is Babeldoab with an area of 153 square miles which contains 10 of the Republic's 16 States and is connected to Koror (the current capitol) by bridge.

According to the 2005 Census – Palau's population is approximately 20,000. The majority, or 14,000 (70%), live in Koror State, which serves as the commercial and business center for the Republic. Koror is urbanized with modern infrastructures and services, while the remaining States and islands are largely rural in nature.

Characteristics of Palau that impact SWM arrangements:

- high dependency on imported goods;
- concentration of population in the city of Koror;
- lack of proper waste management facilities and recycling industries.³

Present status of Solid Waste Management in the Republic – who is responsible?

At present, waste management is the responsibility of each State Government with the exception of Koror. In Koror State, the State Government handles waste collection and the National Government, through the Solid Waste Management Office in the Bureau of Public Works, manages and operates the National landfill _ M-Dock Landfill.

³ Japan International Cooperation Agency (JICA) and Ministry of Resources and Development – Republic of Palau, *Project report – Improvement of Solid Waste Management in the Republic of Palau*, October 2008, p.14.

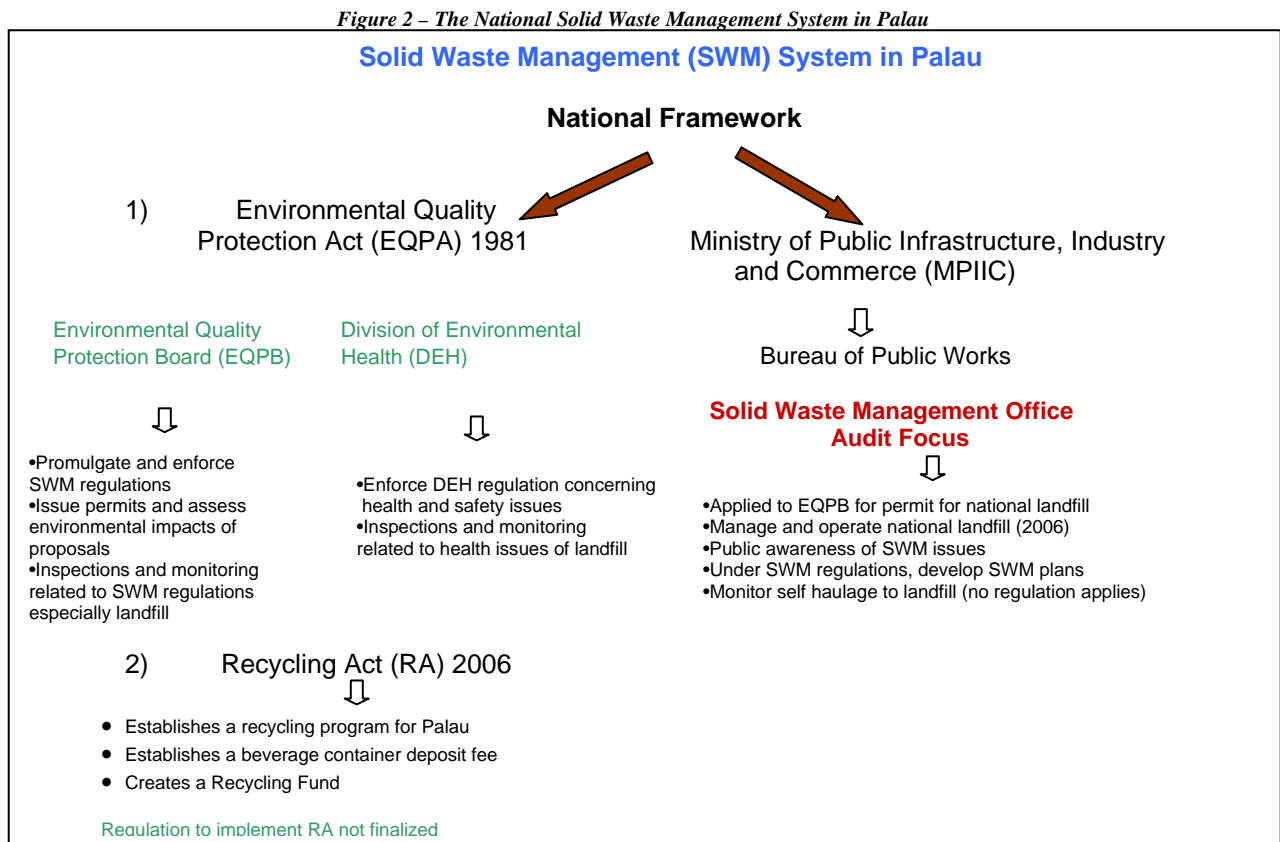
Landfill Management and Operation

The M-Dock Landfill serves as National dumpsite of approximately fifteen (15) acres in size and has been in operation for more than fifty (50) years.

The M-Dock Landfill has operated for several years without measures to control pollution from buried waste and landfill. Because the landfill was operated as open dumping site, it has caused adverse environmental, public health, and aesthetic impacts and is not considered appropriate for Palau given its development aspirations and the economic value of its natural environment.

In 2006, the Republic of Palau in conjunction with the Japan International Cooperation Agency (JICA) commenced rehabilitation of M-Dock Landfill. This was completed by December 2007.

Figure 2 below illustrates the Solid Waste management legislation, key agencies and responsibilities at the National level while **Figure 3** represents the responsibilities of the Koror State Government.



Source: Principal National Acts and Related Regulations

Koror State Government (KSG) Activities

Figure 3 – Koror State Government Responsibilities for SWM



Source: Operation Manual of the M-Dock Landfill and Koror State Government

Principal National Acts

The key pieces of legislation in place include the *Environmental Quality Protection Act 1981* with associated regulations. The Act establishes the Environmental Quality Protection Board (EQPB). The Board is required to submit to the President of the Republic and the Congress an annual environmental quality report. The Act also has a specific regulation concerning Solid Waste Management (effective May 26, 1996), promulgated by the EQPB. The Division of Environmental Health (DEH), Ministry of Health, also adopted part of the EQPB regulation that is concerned with public health issues arising from SWM.

The regulation defines solid waste as: *garbage, refuse, and other discarded solid materials including solid waste materials resulting from industrial and commercial operations, and from community activities.*⁴ The regulation also sets out solid waste storage requirements; collection processes; facility standards; a permit system to establish, modify or operate any solid waste disposal facility and accompanying solid waste management plans; and enforcement and compliance requirements.

A further piece of legislation was enacted in 2006 – the Recycling Act. This Act requires the planning, development and operation of a national recycling program based on a deposit fee for beverage containers and the establishment of a recycling fund to receive revenues from the deposit fees and use of these revenues to administer the Recycling program.

⁴ Solid Waste Management Regulation, May 26 1996, p. 59.

Strategic planning

The National Solid Waste Management Plan (NSWMP), completed in 2008, and pending review and approval by the EQPB before implementation, is the National plan that generally describes the national-level policies and strategies for SWM.

The management of the national M-Dock Landfill, which is located in Koror State, is the responsibility of the National Government. However, the collection and transport of waste to the landfill is the responsibility of the KSG. Waste brought to the landfill also includes self-haulage by businesses and residents. There are currently no regulations that apply to self-haulage. In addition, there are no fees attached to either collection by Koror State Public Works or by self-haulage to the landfill.

KSG also manages the Redemption Center (RC). At the RC premises, it has the SWM Office, Recycling Center, and Compost Building Center, which receives recyclable materials from the 36 Waste Segregation Stations (WSS) located in Koror. Illustrated below is the outline of the premises within the M-Dock Landfill.



Overview RC and SWM Landfill

Source: SWM Office Flight 9/8/08

The KSG Solid Waste Management Office also carries out its responsibilities to educate residents who reside in the areas where segregation stations are constructed. There are six (6) bins per segregation station of which one (1) bin is for non-recycle and non-biodegradable and the other five (5) bins are for recyclable and biodegradable waste. The list below shows the kinds of waste dumped in the six bins at waste segregation stations:

- | | |
|------------------------------------|-------------------------|
| (1) Plastic bags and miscellaneous | (4) Aluminum Cans |
| (2) Metal/glass | (5) Kitchen Waste |
| (3) Paper | (6) Plastic Pet Bottles |



KSG Recycling Center and SWM Office



Composting Facility



Waste Segregation Station

These waste segregation stations are the new waste disposal systems that will be used throughout Koror State. Areas with segregation stations including all schools located in Koror State are asked to utilize the stations because Koror State garbage collectors will only pick up trash from these stations.

The purpose of these segregation stations is to help reduce the volume of waste going to M-Dock Landfill so the facility can be used for longer period of time.

KSG is planning in the near future to install seventy-two (72) more waste segregation stations for those hamlets or areas within the state without WSS. The construction of these waste segregation stations have not commenced yet due to insufficient funding.

Solid Waste Management in Palau – Progress as of 2010

Description	Past	Present
Landfill Management	<ul style="list-style-type: none"> ➤ M-dock dumpsite is an open site, located close to a marine environment as well as residences ➤ Leachate and polluted run-off from site ➤ Site established 50 years ago ➤ Major offensive odor, waste littering, fire, flies, etc. 	<ul style="list-style-type: none"> ➤ M-dock rehabilitated, now a semi-aerobic landfill system; ➤ Mangrove forest protected by the construction of a dike; ➤ A leachate pond was constructed and a collection pipe installed; ➤ Service life of M-dock is now estimated to be 5-6 years as of June 2008; ➤ Slope formation formed to minimize foul odor, and waste littering
Legal and Regulatory Framework	<ul style="list-style-type: none"> ➤ <i>Environmental Quality Protection Act 1981</i> with associated regulation such as Koror State has an Act prohibiting littering in the Koror State soil 	<ul style="list-style-type: none"> ➤ <i>Recycling Act 2006:</i> regulations under consideration

Strategic Framework		<ul style="list-style-type: none"> ➤ National Solid Waste Management Plan is in draft form and with the EQPB and Attorney General for consideration
<p style="text-align: center;">3Rs Framework</p> <p style="text-align: center;">Reduce Reuse Recycle</p>		<ul style="list-style-type: none"> ➤ Koror State Government established a Recycling Center in 2008 for organic waste composting, glass crushing and cardboard compacting ➤ Private contractor on site to help with collection of recyclable items in the landfill

Source: Principal National Acts, Related Regulations and Improvement Project of SWM Completion Report October 2008

Agencies Audited

The main focus of the SWM audit was the management and operation of the National M-Dock Landfill under the Solid Waste Management Office, Bureau of Public Works. The OPA also reviewed records and interviewed other agencies involved with SWM including the following:

- (1) Koror State Government Solid Waste Management Office concerning collection and transport of solid waste to the landfill,
- (2) Environmental Quality Protection Board concerning water inspections around the landfill site and enforcement of regulations,
- (3) Division of Environmental Health, Bureau of Public Health, concerning public health safety and spread of diseases and creation of nuisances from waste collection, transporting, and dumping at the M-Dock Landfill.

AUDIT OBJECTIVE AND SCOPE

The audit objective is to assess the effectiveness of the solid waste management within the Republic of Palau, in particular, the M-Dock Landfill by auditing (1) existence of a legal and policy framework for Solid Waste Management; (2) the process by which the legal and policy framework is implemented, including whether risks to implementation have been considered; and (3) compliance with the legal and policy framework, including monitoring arrangements.

The audit scope for the performance audit of Solid Waste Management covered the period from October 01, 2007 through September 30, 2009. The fieldwork timeframe was set to begin in November 2009 with an estimated deadline for the draft report to be completed by mid-March 2010. The Draft audit report on Solid Waste Management of the M-Dock Landfill was issued on May 10, 2010, which by law is provided to the auditee (Ministry of Public Infrastructure, Industry, and

Commerce, MPIIC,) with thirty (30) days to respond to the report. On July 21, 2010 the OPA received responses from the MPIIC, which have been incorporated and published in the final report.

AUDIT METHODOLOGY

The methodology used to accomplish the audit objective is as follows:

- (1) Review files/documents at the SWM office of the Bureau of Public Works (BPW), Bureau of National Treasury, Environmental Quality Protection Board (EQPB), Division of Environmental Health (DEH) and SWM office of Koror State Government and other agencies as appropriate.
- (2) Interviews and discussions with the Manager of SWM of BPW, Assistant Executive Officer of the EQPB, Chief of DEH, and M-Dock Landfill supervisor and appropriate key personnel at SWM office of Koror State Government.
- (3) Conduct on-site visits of the M-Dock Landfill and other site (s) as appropriate.

Audit Standards

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

The Public Auditing Act of 1985 empowers the Office of the Public Auditor to specially act to prevent fraud, waste and abuse in the collection and expenditures of public funds. The Public Auditor may make recommendations on the prevention and/or detection of fraud, waste and abuse of public funds.

PRIOR AUDIT COVERAGE

- (1) The Solid Waste Management office of the Bureau of Public Works under the Ministry of Public Infrastructure, Industry, and Commerce is included in the annual single audit of the National Government.
- (2) The Solid Waste Management office of the Bureau of Public Works has never undergone a separate audit by the Office of the Public Auditor.
- (3) The OPA also inquired from SWM office manager if SWM has ever undergone a separate audit by a private accounting firm. According to the manager, SWM has never undergone a separate audit by a private accounting firm.

FINDINGS AND RECOMMENDATIONS

Line of Enquiry (LOE) 1: Existence of Legal and Policy Framework for Solid Waste Management

Criterion 1 - There should be regulation (s) and plan in place to direct SWM and entity who takes full responsibility for management and operation of the M-Dock Landfill.

Solid Waste Management Regulation:

The Environmental Quality Protection Board (EQPB) as authorized by the National Government of the Republic of Palau enacted a Solid Waste Management Regulation in May 1996. The regulations address a number of areas concerning SWM and the following areas of compliance with the regulations were found to be deficient:

- A-1: Solid Waste Management Plan
- A-2: Performance Bond
- A-3: Discretionary Requirements

Finding 1.1.1 (A-1): Solid Waste Management Plan

Solid Waste Management Regulation under section 2401-31-34 requires that any person who intends to apply for a solid waste permit to establish a waste disposal system shall provide a Solid Waste Management plan to the Environmental Quality Protection Board (EQPB) for review and approval.

The audit revealed that the Solid Waste Management office of the Bureau of Public Works (BPW) was operating and managing the M-dock National landfill facility using an Integrated Solid Waste Management Plan (ISWMP) which, to date, has never been submitted to the EQPB for its review and approval as required by Solid Waste Management Regulations. Evidently, this was one of the special conditions attached to the permit approving the BPW to operate and manage the national landfill. In addition, at the time of the audit, there exists a Draft National Solid Waste Management Plan (NSWMP) replacing the ISWMP, which also has not been submitted for review and approval by the EQPB. The NSWMP was developed and approved by a Steering Committee in 2007 during the rehabilitation of the national landfill that was undertaken jointly by JICA and the Government of Palau. The Steering Committee was established to oversee this activity and plan for future solid waste management activities in Palau. Furthermore, according to the Manager of the SWM office, the draft NSWMP was provided to the Office of the President of the Republic, through Attorney General's office. Representatives of the SWM Office, EQPB, KSG, and DEH served as members of the Steering Committee so they simply obtained a copy of the draft plan for review, however; there was no evidence of formal transmittal of the draft NSWMP to the EQPB, or other agencies or offices whose approval is required to implement the Plan, with instructions as to what action is required of them.

The SWM office may not have a clear understanding as to which agency/agencies or official/officials is/are authorized to approve the National Solid Waste Management Plan. In addition, the Steering Committee did not address this issue in the Plan. Besides the EQPB, the Attorney General, understandably, at some point, needs to review the plan to ensure that it complies with applicable laws

and regulations. In addition, the Steering Committee did not formally transmit the Plan to the EQPB, Attorney General's Office, or other agencies or offices with instructions as to what action is required of them.

As a result, the operation and management of the M-Dock Landfill is not in full compliance with the solid waste management regulation. In addition, the implementation of the plan, part of which is intended to help reduce the volume of waste, is not in place and therefore may accelerate congestion of the landfill and thus shorten the estimated service life of the facility, which was projected to reach its capacity within five to six years as of June 2008. Moreover, at the time of the audit, there is no plan in place to guide the closure of the landfill should the facility reach its capacity on or before its estimate service life in accordance with Regulation 2401-31-29.

Recommendation

The OPA recommends the SWM Office and the Steering Committee take full responsibility and comply with SWM regulation 2401-31-34 by submitting the draft NSWMP for Palau to the EQPB for its review and approval. In addition, the Steering Committee and the SWM Office should follow up with the Attorney General's Office to determine if the AG's Office intends to take any action on the NSWMP as a result of its review.

SWM's Office Response: The Ministry of PIIC will submit the draft NSWPM to EQPB for review and approval as recommended by the Office of Public Auditor (OPA).

EQPB's Response: No Solid Waste Management Plan was submitted to EQPB. The EQPB has corrected this measure by requiring submittal of this plan within 30 days of submittal of these comments. See attached letter Doc. # 101182.

Finding 2.1.1 (A-2): Performance Bond

Solid Waste Regulations 2401-31-29 states that the Chairman (EQPB) may require a performance bond to guarantee proper operation and closure of solid waste facility. This performance bond shall be forfeited should the permittee not comply with the provisions of the permit and proper closure procedures.

The audit revealed that the EQPB did not impose a performance bond on the SWM Office and, as such, the Office has never had a performance bond in place to guarantee proper operation and closure of the solid waste facility.

We were unable to determine why EQPB did not impose a performance bond on the SWM Office in the operation and management of the M-Dock Landfill.

Without a performance bond in place, the EQPB lacks the guarantee for the proper operation and closure of the M-Dock Landfill.

Recommendation

The OPA recommends that the EQPB impose a performance on the SWM Office in order to provide guarantee for the proper operation and closure of the M-Dock Landfill. The performance bond is a regulatory tool that provides some level of assurance to the EQPB on the proper operation of the solid waste disposal facility and its eventual closure upon relocation of the landfill in the future.

SWM's Office Response: Commented by EQPB

EQPB's Response: Although the board had the authority to require a performance bond, the existing M-Dock landfill required major improvements. For this project, the board did not consider a performance bond. The Board did require a closure plan for the M-Dock landfill. The Board will ensure that the Permittee submits a closure plan before closing the landfill. For future actions, the EQPB will require performance bonds.

Finding 3.1.1 (A-3): Discretionary Requirement

SWM regulations under section 2401-31-16, Discretionary Requirements, states in part: A permittee may be required to provide controlled access to the facility in the form of fences and gates that shall be kept locked when an attendant is not on duty.

During an on-site visit to the M-Dock Landfill facility, the OPA noted that the facility is not securely fenced or gated to enhance controlled access into the landfill when an attendant is not on duty. Consequently, waste dumping at the facility is accessible when an attendant is not on duty, not to mention illegal dumping activities that may take place without detection.



Part of landfill not gated or fenced



Illegal waste dumped at Bulky Waste Area and Back of the Landfill



The cause of the above condition is lack of financial resources to construct a security fence with gate around the perimeter of the landfill to control access to the facility when an attendant is not on duty.

Without a secure fence and proper gating, the Landfill is accessible to potential uncontrolled and illegal dumping activities. Such activities may create adverse conditions to the surrounding environment, health and safety of the workers and facility users.

Recommendation

The OPA recommends the SWM Office construct a security fence with gates surrounding the perimeter of the Landfill. In addition, the EQPB should monitor the operation of the Landfill to ensure the SWM Office complies with EQPB regulations regarding controlled access to the facility.

SWM's Office Response: Construction of a security fence with gates around the perimeter of the M-dock landfill will commence as soon as SWM office obtain adequate resources to perform such task.

Criterion 2 - There should be a legal framework to address recycling activities in Palau.

Finding 4.1.2: Prolonged Delay in Implementation of Recycling Act

The Republic of Palau Public law (RPPL) No. 7-24 establishes a recycling program for the Republic to:

- establish a beverage container deposit fee; and
- create a recycling fund to help redeem and reduce improperly disposed waste beverage containers on the island.

During the audit, the OPA noted that the Recycling Act of October 2006 does not have enabling regulations in place to implement the Act. According to SWM officials and the Director of Bureau of Revenue, Customs and Taxation, Ministry of Finance (MOF), the agency designated to promulgate rules and regulations for operation of the Recycling Program, the regulations to implement the recycling program have not been reviewed and approved by the President of the Republic. The recycling program, as set out in the Act, is a self-funded program the intent of which is to minimize the impact of pollution on the environment, health and safety of the people, and to extend the service life of the landfill.

It appears the cause of the above condition is that the enabling regulations have not been reviewed and approved by the President of the Republic. In addition, there does not appear to be any follow up and drive to move the plan forward.

As a result, delays in implementing the Recycling Program perpetuate haphazard habits of consumers discarding beverage containers and inundate the M-Dock Landfill with them. In addition, the delay further perpetuates the problems, which the Recycling Program was intended to minimize or reduce impact of, including the following:

- visible forms of pollution in the Republic,
- address increasing concerns over limited sites for landfills throughout the island,
- increase hazards to health and safety of people and environment, and
- unquestionable burden to protection of our environmental resources as well as the growth of the tourism industry.

Recommendation

The OPA recommends the Director of Bureau of Revenue, Customs and Taxation and the SWM Office meet with the Minister of Finance and Minister of Public Infrastructure, Industry, and Commerce to advise the Ministers of the status of the Recycling Program and the urgency by which the Recycling Program Regulations awaits review and approval by the President in order to implement the Recycling Program. It should be emphasized to the Ministers, and communicated to the President, that although the Recycling Act was passed in October 2006, the enabling regulations, which require the President's review and signature, has since delayed the implementation of the Act.

SWM's Office Response: The President approves of the recycling regulation and awaits the Minister of PIIC and the Governor of Koror State to advise him of the set date for signing of the regulation.

Criterion 3 - There should be an established Initial Redemption Center for the Republic, as required by the Recycling Act.

Finding 5.1.3: Initial Redemption Center

The Draft Beverage Container Recycling Regulations designated the Koror State Government's recycling facility as the Initial Redemption Center for the Republic.

Although Koror State Government has established its recycling facility as the Initial Redemption Center, without the regulations in place, the Center is unable to proceed to collect or receive recyclable containers as set out in the objectives of the Recycling Act below:

- (1) to facilitate the return of empty beverage containers, the Ministry of Public Infrastructure, Industry, and Commerce (MPIIC) shall establish one or more redemption centers at which empty beverage containers may be returned and payment received.
- (2) the application for approval of a redemption center shall be filed with the MPIIC, formerly Ministry of Resources and Development (MRD)
- (3) using the money in the recycling fund, the Minister of MPIIC may provide compensation not to exceed \$0.025 per container to the redemption center for its services.

The cause of the above condition is the Beverage Container Recycling Regulations have been promulgated, however; the regulations require review and approval by the President in order to begin implementation of the Recycling Program.

As a result, the Koror State Government's recycling facility (Initial Redemption Center) is unable to proceed with the buying and collecting empty containers from the public. Essentially, this also delays the use of Koror State's Redemption Center as a test model for the other States of the Republic to begin their own recycling programs, as suggested in the project completion report of "The Project for Improvement of Solid Waste Management in the Republic of Palau (October 2008)".

Recommendation

The OPA recommends the Director of Bureau of Revenue, Customs and Taxation and the SWM Office meet with the Minister of Finance and Minister of Public Infrastructure, Industry, and Commerce to advise the Ministers of the status of the Recycling Program and the urgency by which the Recycling Program Regulations awaits review and approval by the President in order to implement the Recycling Program. It should be emphasized to the Ministers, and communicated to the President, that although the Recycling Act was passed in October 2006, the enabling regulations, which require the President's review and approval, has since delayed the implementation of the Act.

SWM's Office Response: The President approves of the recycling regulation and awaits the Minister of PIIC and the Governor of Koror State to advise him of the set date for signing of the regulation.

LOE 2: Implementation of legal framework

Criterion 1 - Sufficient funding is critical to support the proper operation and management of solid waste disposal facility.

Finding 6.2.1: Insufficient Funding for Operation of M-Dock Landfill

The National Solid Waste Management Plan needs to be sufficiently funded in order to effectively and efficiently implement the goals and strategies outlined in the Plan.

The Olbiil Era Kelulau (Palau National Congress) only appropriated \$49,735, or 15% of the proposed budget for the M-Dock Landfill operations, for fiscal year 2008 and 2009. The proposed annual budget request by SWM office was \$319,721 and \$342,058.90 for FY '08 and '09 respectively. Shown below is the breakdown of the proposed budget request by the Solid Waste Management Office.

Description:	FY 2008	FY 2009
Fuel for Operation:	\$ 30,158.70	\$ 28,746.40
Maintanance/Supplies:	\$ 29,532.50	\$ 29,532.50
Equipments: (used excavator, bulldozer, dump trucks, etc):	\$136,250.00	\$150,000.00
Professional Services: (Construction for additional slope formations around the perimeter of the landfill)	\$ 50,000.00	\$ 50,000.00
Public Education	\$ 10,000.00	\$ 30,000.00
Initiate Programs for other State:	\$ 10,000.00	\$ 40,000.00
Facility Building and Fence:	\$ 50,000.00	\$ 50,000.00
<i>Total Amount Requested:</i>	<u>\$319,721</u>	<u>\$342,058.90</u>

During an on-site visit to the M-Dock Landfill, the OPA observed degenerating environmental conditions such as uncovered garbage, flies, and foul odor due to lack of soil to cover waste materials. Further, the SWM office also needs additional funding to carry out routine maintenance works at the Landfill to upkeep the facility in a condition that does not threaten the surrounding environment, health and safety of the workers, facility users, and general public. In addition, a security fence with access gates needs to be constructed around the perimeter of the Landfill to comply with local environmental laws and regulations. Moreover, extension of slope formations is necessary to expand or increase the capacity of the Landfill.

According to the SWM Office, who manages and operates the M-Dock Landfill, in order to upkeep the Landfill routine bulldozing, leveling, and compacting is necessary to cover garbage and other waste materials. This effort requires soil materials and heavy equipment. Presently, the SWM Office operates two (2) heavy equipment at the facility; 1 unit Bulldozer and 1 unit excavator. According to the office, both equipment are very old, in disrepair, and often breaks down causing work stoppage. Considering the size of the dumpsite (15 acres), the bulldozer and excavator are the bare necessities to maintain and operate the M-Dock Landfill as required by the Operations Manual of the M-Dock Landfill.

It appears that solid waste management and operation at M-Dock Landfill is not receiving the attention at the leadership level necessary to prioritize its funding requirements. As such, the Palau National Congress has not appropriated sufficient funds over the past years to cover the operational costs of the Landfill.

Without sufficient funding to operate and manage the M-Dock Landfill, conditions at the facility may deteriorate to the point it becomes a health hazard to the surrounding environment, workers at the facility, landfill users, and the general public. In addition, without sufficient funding, efforts to implement the goals and strategies outlined in the National Solid Waste Management Plan (NSWMP) will be frustrated by delays, become ineffective, difficult, and more costly. Lastly, perpetual under-funding of M-Dock Landfill operations may accelerate conditions that will lead to the landfill reaching its capacity sooner than its estimated service life and become more costly to fix.

Recommendation

The OPA recommends that the Solid Waste Management Office and the Steering Committee meet with the Minister Public Infrastructure, Industry, and Commerce to discuss the operations of the M-Dock Landfill, its proposed budget, and the NSWMP to familiarize the Minister of its operations, the urgency to fund operations at a level that assures upkeep of the facility, and the future of solid waste disposal outlined in the NSWMP. In addition, the Steering Committee should meet with the President of the Republic and the appropriate Committees of the Congress (Senate and House of Delegates) to address similar concerns.

SWM's Office Response: The SWM office regularly informs the Minister of the situation of M-dock landfill and submitted budget proposals including M-dock landfill operations budget.

Criterion 2 - *A self-financing fee structure will subsidize the cost of operations of the Landfill as well as provide incentives to reduce waste generation.*

Finding 7.2.2: Fee System

A system of tipping fee is a conventionally-accepted self-funded scheme to pass on the cost of operating and maintaining a landfill to users (those who produce waste). The tipping fee will also encourage users to minimize the volume of waste materials disposed and eventually end up at the landfill.

The audit revealed that the Solid Waste Management Office, which operates and manages the M-Dock Landfill, is under-funded and the Draft NSWMP, which includes a proposal to charge a tipping fee for dumping rubbish at the landfill, has not been approved by the EQPB.

The OPA has not been able to determine why the Draft NSWMP has not been formally transmitted to the EQPB for its review and approval. In addition, the same Plan was submitted to the Attorney General's Office over a year ago for its review and consideration; however, it appears the responsibility for following up on these issues was not assigned and therefore the Plan has been considerably delayed at the review and approval stage.

As a result, the potential revenue source from tipping fees, which the SWM Office urgently needs at this time to operate the landfill, has been considerably delayed as well. Hence, for the time being, the SWM Office will have to compete with other agencies and programs of the Palau Government with respect to funding priorities and appropriations from the Palau National Congress.

Recommendation

The OPA recommends the President of the Republic reviews and approves the Beverage Container Recycling Regulation to effectuate the program and fully achieving its objectives set out in the Recycling Act. Also, the Office of the Attorney General should consider an immediate review of the Tipping Regulation for legal matters and submit it to SWM Office for finalization. If these regulations are in place, they will help reduce the volume of solid waste disposed at the landfill and also reduce the financial burden for the management and operation of the M-Dock Landfill or relocation of a new National landfill in the future.

SWM's Office Response: SWM office, with approval of the Minister, will set up a meeting with the Attorney General's Office regarding the *Tipping Fee regulations* and request the AG to take immediate action without delay.

Criterion 3 - Public Awareness is an effective tool to educate public on waste management to enhance the quality of the environment.

Finding 8.2.3: Public Awareness

Environmental education is an essential component of the National Solid Waste Management Plan to educate the public the seriousness of damage from waste to both people and the environment. Solid Waste Management office has an educator whose duties and responsibilities are:

- (1) to develop community outreach programs to inform commercial and residential establishments of the challenges in SWM
- (2) to develop and coordinate programs that enhances quality of SWM.

According to the SWM educator, due to lack of financial resources, the office really cannot develop community outreach programs on waste management. The office needs materials and tools to implement programs to enhance the quality of solid waste management. Consequently, the only public awareness program that the SWM office has been able to deliver to educate the public on waste management of M-Dock Landfill is through its ability to link up with other concerned government organizations' programs such as EQPB, DEH, and Ministry of Education (MOE), which programs are relatively promoting better environment and public health safety.

Without appropriation and sufficient funding in place, SWM office cannot effectively develop community outreach programs to educate the public on solid waste management and coordinate the programs with other government organizations to enhance the quality, public health safety, and environment at the M-Dock Landfill.

As a result, illegal wastes dumping at the landfill still exist. Also, due to lack of public education programs, waste collection, transportation, and disposal at the landfill are in conflict with the objectives of the NSWMP to reduce, reuse, and recycle solid waste in an effort to reduce the amount of waste generated and disposed at the landfill.

Recommendation

The OPA recommends the Palau National Congress to appropriate sufficient funds to the SWM office to enable the office to effectively promote public outreach programs to educate the public on solid waste management.

SWM's Office Response: SWM office will continue to submit annual budget proposal which includes funding for Public awareness.

LOE 3: Compliance with the legal and policy framework including monitoring and reporting arrangements

Criterion 3.1 - Inspections and reporting for environmental and public health risks.

Finding: 9.3.1 Environmental Inspections – EQPB

The Operations Manual for the M-Dock Landfill states in part, “there are two kinds of water inspection; one is for sea water around the site and the other is for leachate. The sea water inspection is to be conducted at 3 points around the Landfill every month to check for Fecal Coliform, Turbidity, pH, Temperature, Dissolved Oxygen, and Salinity. The Leachate inspection will be conducted at 3 spots, leachate pond and 2 draining spots where leachate flows out to leachate pond.

According to the EQPB Assistant Executive Officer, the EQPB conducts two (2) types of inspections at the Landfill; namely visual and testing for pollutants. The official stated that the last visual inspection conducted by the EQPB was during the rehabilitation of the Landfill; however, test of contaminants in the seawater is routinely conducted since 2006 but, occasionally, when testing equipment breaks down, testing stops and resumes when the equipment becomes operational again. In addition, the EQPB is not conducting the required leachate inspections called for in the M-Dock Operations Manual.

We were unable to determine why the EQPB suspended visual inspections of the Landfill. Inspections are part of standard operating procedures under the M-Dock Operations Manual.

As a result, the EQPB is not effectively monitoring and enforcing its regulations with respect to the methods employed by the SWM office in operating and managing the Landfill. For example, during its on-site visit, the OPA found hospital wastes that were discarded in an open, uncovered pit and sewage sludge was also disposed in the same pit. Disposal of these types of wastes at the Landfill are prohibited by EQPB regulations. In addition, without leachate inspections, it would be difficult for EQPB to correlate any relationship between the quality of water in the surrounding area and leachate runoff.

Recommendation

The OPA recommends the EQPB conduct visual inspections, leachate and seawater testing at the required locations at the Landfill. Visual inspections are necessary to ensure the SWM personnel at the Landfill are not permitting prohibited waste from disposal in the facility and to ensure the proper maintenance of the Landfill. Leachate and seawater inspections are critical in order to monitor the impact of runoff contaminants on the quality of seawater in the surrounding area.



Overview three point's location and Leachate Pond in the landfill

SWM's Office Response: Comment – By EQPB

EQPB's Response: The EQPB will correct this deficiency by conducting routine inspections and continue water quality monitoring. The EQPB will conduct visual inspections of the leachate ponds. However, the EQPB lacks capacity to test leachate and therefore will coordinate with the Permittee to have them conduct proper testing of the leachate.

Finding: 10.3.1 Public Health Safety Inspections

A system of public health safety inspections at the M-Dock Landfill is essential to ensure the timely detection and containment of infectious and other solid-waste-borne diseases to promote and protect the environment and public health safety. In addition, Part 5.3 of the M-dock Operations Manual calls for inspections by the Division of Environmental Health for detection of infectious deceases and other public nuisances. Moreover, the DEH adopted its own regulations on solid waste management that mirrors those of EQPB that should be enforced to produce intended outcome.

Per communication from the Acting Chief of Division of Environmental Health (DEH), Bureau of Public Health, the Division does not conduct regular or routine inspections at the M-Dock Landfill unless there is a reported threat /case of vectors or other deceases from citizens or workers at the site. In a telephone interview with a DEH staff, he stated that occasionally the DEH inspectors would be called to the Landfill to destroy expired merchandises from local stores to prevent consumption or removal from site.

The OPA conducted an on-site visit to the Landfill and observed degenerating conditions such as uncovered waste materials, foul odor, and unsightliness of slope formations (waste-cluster patterns) due to lack of soil to cover them. In addition, we sighted hospital waste materials that were discarded in an open, uncovered pit and a carcass of a dead animal that was dumped at the landfill. The pictures below illustrate the deteriorating and unsightly conditions at the Landfill due to lack of resources to properly maintain the facility:



Animal carcasses and hospital wastes



Improper Collection safety



Littering and Unsightliness



Puddle of Water and Unsightliness



Bad Odor and Unsightliness



Unsecured Gate and Waste used as Slope Formation

It appears the DEH has taken the position that inspections at the M-Dock Landfill is not a priority and its inspectors will only conduct inspections when a threat/case of vector or other decease-causing agents are reported.

The M-Dock Landfill by its nature is a haven for vector and other infectious deceases. The workers at the Landfill, much less the public, are not properly trained or equipped to identify or detect conditions that lend themselves to harboring decease-carrying agents and reporting such to the DEH. Without proactive inspection regimes, the risk exist that vector and other infectious deceases may spawn without timely detection and spread outside the Landfill. In addition, the passive approach to conducting inspections sends a message that enforcement of DEH’s solid waste regulations is not a priority and their intended outcome inconsequential.

Recommendation

The OPA recommends the Division of Environmental Health reconsider conducting regular inspections at the M-Dock Landfill. Only proactive inspection regimes will effectively detect and contain potential dangers to public health safety. In addition, the role of the DEH inspections is prescribed in the M-Dock Landfill Operations Manual. Moreover, the DEH should proactively enforce its regulations on solid waste management in order to achieve the intended benefits.

SWM’s Office Response: Comment – By DEH

DEH’s Response: There is a finding that DEH does not carry out regular inspections of the landfill site, and a recommendation for our Division to reconsider this status. In this regard, it is necessary that we recognize Palau’s Environmental Quality Protection Board (EQPB) as the lead enforcement agency implementing solid waste inspection to ensure compliance as they have the engineer on –board and the regulations. DEH adopted said EQPB solid waste regulations (verbatim) in 2004, and it is now within the Environmental Health Regulations (2nd Edition 2007). It is also necessary to point out that

the existing solid waste management plan has little or no public health measures addressed and/or specifications on what measures need to be implemented once public health risks arise.

In essence, Palau's EQPB would be the first agency that responds to any threat from the landfill site, and DEH gets involved only when there is a public health or a case of human disease (i.e. reported threat/case for vectors, vector-borne and/or other diseases and including but not limited to public health nuisance, etc.) relating to the said site. DEH, within the Bureau of Public Health, Ministry of Health, does not regularly or routinely inspect the M-Dock Landfill, as we do not have an engineer or technical expert to conduct such activities. In addition, there is no funding to enable additional activities to an already financially challenged Division.

A current issue that would require immediate attention and collaboration is the complaints of scavengers in the landfill site. There are numerous reports and sightings of people scavenging for recycled and plant (i.e. cans/plastics and 'kangkum', respectively) materials within the landfill site. These actions pose serious and multiple health threats not only to those scavenging, but to those exposed to the materials after they are collected and brought outside of the site. There is little known regarding the 'recycled uses' of the materials, and especially if they are used in relation to food. This is to formally request your food office to begin the collaboration between our Ministries, Palau EQPB, Koror State Government and the National Solid Waste Management Group to address these issues.

The team at DEH and the BPH works closely with the Palau EQPB and other government/non-government agencies to ensure that Palau becomes an overall healthy community, and welcomes all opportunity to address concerns that threaten this status.

Thank you very much for your attention and cooperation with DEH.

OPA's Response: The primary reason this issue (DEH's inspections) was brought up is because it is spelled out in the M-Dock Landfill Operations Manual, which the OPA believes the DEH was involved in its formulation. The role of the DEH (conduct inspections) is instituted in the policy to alleviate risk to public health safety arising from the operation of the Landfill, which the OPA understands require properly trained personnel, but not necessarily an engineer. As mentioned in your response, scavenging and salvaging rubbish from the landfill is becoming a common occurrence, however; without the DEH's involvement to put a stop to these activities, they pose a health threat to the community.

Criterion 2 - Waste inspection at the gate of M-dock Landfill is critical to enhance their proper disposition.

Finding: 11.3.2: Inspection of Waste Hauled to Landfill

The M-Dock Landfill Operations Manual states that inspection of wastes for disposal at the Landfill is essential in order to observe and record the types and volume of waste, identify and remove prohibited waste (e.g. hazardous waste), and identify bulky waste that should be disassembled to smaller pieces.

During an on-site visit to the landfill, the OPA observed that visual inspections of waste at the gate were conducted to inspect and record the types and volume of waste being disposed; however, inspections did not follow through to the location and the actual unloading to verify the types of waste. In addition, although our visual observation seems to indicate segregation of wastes, there are no signs within the facility segregating locations for the different types of wastes. Moreover, the SWM office does not have at the landfill a heavy-duty scale with which to measure the amount of waste and therefore uses estimates as measure.

The cause of the above condition is laxness in controls over the management of solid waste at the landfill to ensure that proper inspections and segregation of wastes are carried out. In addition, the SWM office lacks the funds to equip the landfill with the essential tools and equipment to properly operate and manage the landfill.

Due to above conditions, controls (or lack thereof) are such that prohibited waste can pass visual inspections. In addition, without proper waste segregation, efforts to upkeep the landfill become even more difficult and costly. Moreover, without a proper scale at the site, records of amount of waste disposed at the landfill may not be as accurate.

Recommendation

The OPA recommends the SWM Office establish and enforce a system whereby wastes are segregated according to different types within the landfill. Further, in addition to visual inspections, landfill attendants should direct haulers to the appropriate dumping location and observe the actual dumping of waste to verify initial visual inspections and to ensure that prohibited wastes are not being concealed and dumped illegally. Finally, the SWM office should include in its budget request the cost of a heavy-duty scale for measuring the actual amount of waste being disposed at the landfill, not rely on estimates.

SWM's Office Response: Segregation of waste within the landfill is limited to waste tires, metals, construction waste, bulky waste, carcasses and rest are miscellaneous waste. Green wastes are diverted to the Koror State Compost facility. Further, landfill attendants perform visual inspection of waste at the entrance. It is not recommended at this time to observe the actual dumping of waste considering a large number of vehicles coming in, no soil covering of waste, and no safety gears for landfill workers to protect their health due to lack of resources. However, the operators are observing actual dumping when operating inside the disposal area.

Criterion 3 - Performance Report should be submitted no later than April 15th of each year.

Finding 12.3.3: Performance Reporting

The Republic of Palau Public Law (RPPL) 6-11, as amended by RPPL No. 7-7, requires each agency to submit a performance report no later than April 15th of each fiscal year.

The audit revealed that the SWM Office, Bureau of Public Works (Ministry of Public Infrastructure, Industry and Commerce), did not comply with RPPL No. 6-11 by failing to prepare and submit a Performance Report for the following fiscal years:

<i>Fiscal Year</i>	<i>Required Submission Date</i>	<i>SWM's Report Date of Submission</i>
2008	04/15/08	No Report
2009	04/15/09	No Report

The SWM office failed to prepare a Performance Report and management neglected supervision to ensure the report is prepared.

The effect of the above condition is non-compliance with the law.

Recommendation

The OPA recommends the SWM office prepare and submit a Performance Report annually in accordance with RPPL No. 6-11 and related amendments thereto. In addition, the Director of Bureau of Public Works should perform the necessary supervision to ensure the Performance Report and related responsibilities of the SWM office are timely performed.

SWM's Office Response: Performance reporting is usually submitted by the Bureau of Public Works as a whole, however, SWM Office will make sure that its performance report will be submitted to the Director of Public Works.

CONCLUSION

Solid Waste Management (SWM) is an important part of modern infrastructure as it ensures the protection of the environment and of human health. SWM is closely related to a number of issues such as urban lifestyles, resource consumption patterns, employment and income levels, and other socio-economic and cultural factors.

Effective SWM is important to the Republic of Palau, given its development aspirations and the economic value of its natural environment.

While there have been significant improvements in the management of solid waste in the Republic, the audit found areas requiring further attention by the responsible agencies. These included at the level of the legal and policy framework; the effective implementation of the framework; and monitoring and reporting of compliance with the legal framework.

Legal Framework for Solid Waste Management

The Environmental Quality Protection Act of 1981 (EQPA) 24 Palau National Code Annotated (PNCA) provides the legal and policy framework to manage solid waste in the Republic. A SWM regulation is in force. However, for the legal framework to be fully effective, it needs the support of an approved Solid Waste Management Plan. The current plan is still in draft form. Compliance with *all* aspects of the SWM regulation also needs to be ensured by the responsible regulatory agency – the Environmental Quality Protection Board.

There is an Act governing recycling activities in the Republic - the *Recycling Act of 2006*. The Act provides for the collection of a beverage container deposit fee; and the establishment of a recycling fund to help redeem and reduce improperly disposed waste beverage containers. To extend the estimated life-span of the landfill and ensure that the recycling activities set out in the Act are achieved, the Beverage Container Recycling regulation should be officially approved and implemented.

Effective Implementation of the Framework

It is important that the National landfill is appropriately funded to mitigate adverse environmental and public health impacts. Funding for the landfill could be staggered over a number of fiscal years with priority given, in the first instance, to the purchase of equipment and materials.

The financial burden of managing and operating the national landfill could be offset with the imposition of two proposed fee systems – the first is the beverage container deposit fee and the second is concerned with a tipping fee imposed for disposal of waste at the landfill.

Monitoring and reporting of compliance with the legal framework

Routine and standard inspection regiment by the EQPB and Division of Environmental Health is essential to ensure the proper protection of the environment and public health.

To assist with future solid waste management planning, it is important that the responsible agency should have available complete data on waste disposed at the landfill (including illegally disposed waste). To support this, a more robust inspection regime of all waste should be established so that it is properly recorded.

The Republic of Palau Public Law (RPPL) No. 6-11, as amended by RPPL No. 7-7, requires each agency to submit performance reports no later than April 15th of each year. The responsible agency should comply with this requirement so that the President, the Congress and the Public Auditor can form an opinion as to whether the agency is administering its programs and services effectively.

**ILLEGAL OR WASTEFUL ACTIVITIES
SHOULD BE REPORTED TO:**

**OFFICE OF THE PUBLIC AUDITOR
REPUBLIC OF PALAU
P. O. BOX 850
KOROR, REPUBLIC OF PALAU 96940**

**Ground Floor
Orakiruu Professional Building
Madalaii, Koror, Palau**

**TELEPHONE NOS: (680) 488-2889/5687
FACSIMILE NO: (680) 488-2194
E-MAIL ADDRESS: palauopa@palaunet.com**

**MONDAY THRU FRIDAY
7:30 a.m. - 4:30 p.m.**

(Closed on Legal Holidays)