



Australian Government

Australian Maritime Safety Authority



SPREP

Secretariat of the Pacific Regional
Environment Programme

PORT WASTE RECEPTION FACILITIES GAP ANALYSIS

Suva, FIJI

FINAL REPORT

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Objectives

To carry out a gap analysis on the adequacy of waste reception facilities in Suva for vessels normally calling at the port.

Scope

The gap analysis covered the port of Suva. The focus was the cargo wharves and anchorage in the commercial port. The yacht club marina adjacent to the port was not considered in detail although it should be noted that, particularly for garbage and oily waste from yachts, many of the issues are similar.

MARPOL does not apply to waste generated by land-based operations at the terminal or wharf. This gap analysis considered only **waste generated by vessels** resulting from their compliance with MARPOL.

The criteria for assessing the adequacy of reception facilities are the IMO Guidelines on Ensuring the Adequacy of Port Waste Reception Facilities (MEPC.88(43)).

The recommendations will be directed to the Ministry of Transport in the first instance; however, there will be other agencies with important roles in implementing the recommendations. The Ministry of Transport will forward the recommendations to those agencies and/or request their assistance as necessary. It is ultimately up to the Government of Fiji to determine the appropriate agencies to carry forward the recommendations, although the recommendations make some suggestions in this regard.

Background

The International Convention for the Prevention of Pollution from Ships (MARPOL)

MARPOL includes obligations with regard to the provision of waste reception facilities. These obligations are on government authorities, rather than on ships or private companies. The purpose of these obligations is to ensure that ships are able to legally dispose of their waste as an alternative to illegal discharge to the marine environment and/or inappropriate land disposal. Specific regulations are summarised below.

Annex I Regulations for the Prevention of Pollution from Oil

Regulation 38.1 – The Government of each Party to the present Convention undertakes to ensure the provision at oil loading terminals, repair ports, and in other ports in which ships have **oily residues** to discharge, of facilities for the reception of such **residues and oil mixtures** as remain from oil tankers and other ships adequate to meet the needs of the ships using them without causing undue delay to ships.

Regulation 38.2 and 38.3 expand on this basic requirement. The following points are of particular relevance:

- Reception facilities for oily waste are **required in ports and terminals which handle ships provided with the sludge tank(s)** required by regulation 12 *[this means ports that handle ships of 400gt and above]* (38.2.4).
- Such facilities must be sufficient to receive **all residues and oily mixtures** retained in the sludge tanks **of all ships that may be reasonably expected to call at such ports or terminals** (38.3.4).
- Reception facilities for oily waste are required in **all ports** in respect of oily bilge waters and other residues which cannot be discharged in accordance with regulation 15 *[which requires that effluent is filtered to 15ppm oil, discharged while on route etc., and not containing concentrations of chemicals hazardous to the marine environment]* (38.2.5)
- Such facilities must be sufficient to receive **oily bilge waters and other residues** that cannot be discharged in accordance with regulation 15 from **all ships that may be reasonably expected to call at such ports or terminals** (38.3.5)

Annex II Regulations for the Control of Pollution from Noxious Liquid Substances in Bulk

Regulation 18.1 – The Government of each Party to the Convention undertakes to ensure the provision of reception facilities according to the needs of ships using its ports, terminals or repair ports as follows:

- **ports and terminals involved in ships' [Bulk NLS] cargo handling** shall have adequate facilities for the reception of residues and mixtures containing such residues of noxious liquid substances resulting from compliance with this Annex, without undue delay for the ships involved.
- **ship repair ports undertaking repairs to NLS tankers** shall provide facilities adequate for the reception of residues and mixtures containing noxious liquid substances for ships calling at that port.

Regulation 13 sets out requirements for the control of discharges of residues of noxious liquid substances i.e. any residues remaining after the cargo has been unloaded. MARPOL and the related International Bulk Liquids Code (IBC Code) separates bulk liquid chemicals into three categories – X, Y and Z, based on their marine pollution hazard. A tank that has held a Category X (highest marine pollution hazard) substance must be 'prewashed', and the residues must be discharged to shore before the ship departs. In some circumstances where Category Y or Z cargo has not been unloaded in accordance with appropriate procedures or for high-viscosity or solidifying Category Y substances, prewashes and discharge of residues to shore may also be required. In these cases, discharge to shore may be at the unloading port or another port provided that it is confirmed in writing that an adequate reception facility is available.

Annex IV Regulations for the Prevention of Pollution by Sewage from Ships

Regulation 12.1 – The Government of each party to the Convention, which requires ships operating in waters under its jurisdiction and visiting ships while in its waters to comply with the requirements of regulation 11.1 undertakes to ensure the provision of facilities at **ports and terminals** for the reception of **sewage**, without causing undue delay to ships, adequate to meet the needs of the ships using them.

Annex V Regulations for the Prevention of Pollution by Garbage from Ships

Regulation 7.1 – The Government of each Party to the Convention undertakes to ensure the provision of facilities at **ports and terminals** for the reception of **garbage, without causing undue delay** to ships, and **according to the needs of the ships** using them.

Annex VI Regulations for the Prevention of Air Pollution from Ships

Regulation 17.1 – The Government of each Party to the Protocol of 1997 undertakes to ensure the provision of facilities adequate to meet the:

- needs of ships using its **repair ports** for the reception of **ozone depleting substances** and equipment containing such substances when removed from ships.
- needs of ships using its **ports, terminals or repair ports** for the reception of exhaust gas cleaning residues from an approved exhaust gas cleaning system when discharge into the marine environment is not permitted under regulation 14 [*i.e. in enclosed ports, harbours and estuaries unless documented that there is no adverse impact*]

Regulation 17.2 recognises that reception facilities for exhaust gas cleaning system residues and ozone depleting substances may be impossible in some ports. If a particular port or terminal of a Party is remotely located from, or lacking in, the industrial infrastructure necessary to manage and process those substances referred to in Regulation 17.1 and therefore cannot accept such substances, then the Party shall inform the Organization of any such port or terminal so that this information may be circulated to all Parties and Member States of the Organization for their information and any appropriate action. Each Party that has provided the Organization with such information shall also notify the Organization of its ports and terminals where reception facilities are available to manage and process such substances.

Refer to resolution MEPC.199(62), 2011 Guidelines for reception facilities under MARPOL Annex VI.

Special provisions in MARPOL for Small Island Developing States (SIDS)

IMO has recognised the unique challenges that SIDS experience in providing adequate reception facilities for ships waste. This was first recognised in 2000 in IMO Resolution MEPC.83(44) *Guidelines for ensuring the adequacy of port waste reception facilities*, then given a firm legal basis through MARPOL amendments in 2011.

SIDS may satisfy waste reception facilities regulations through regional arrangements when, because of those States' unique circumstances, such arrangements are the only practical means to satisfy these requirements. Parties participating in a regional arrangement shall develop a Regional Reception Facilities Plan, taking into account the guidelines developed by the Organization. The relevant guidelines are found in IMO Resolution MEPC.221(63). SPREP is currently in the process of reviewing the Pacific regional arrangements that existed since 2002 to update the data and ensure the new IMO guidelines are met.

Meaning of 'Adequate'

The International Maritime Organization provides guidance on what constitutes 'adequate' waste reception facilities in Resolution MEPC.83(44) Guidelines for Ensuring the Adequacy of Port Waste Reception Facilities. Adequate facilities are defined as those which:

- mariners use;
- fully meet the needs of the ships regularly using them;
- do not provide mariners with a disincentive to use them; and
- contribute to the improvement of the marine environment.

The facilities provided by the port must:

- meet the needs of the ships normally using the port; and
- allow for the ultimate disposal of ships' wastes to take place in an environmentally appropriate way.

Where facilities are provided, it is important to remember that adequacy can be compromised by poor location, complicated procedures, restricted availability and unreasonably high costs for the service provided. These are all factors which may provide a disincentive for the use of reception facilities.

The Guidelines also provide a sample assessment template that can be used to assess adequacy. The gap analysis undertaken in Suva uses this template as a basis.

Adequacy according to "the needs of ships normally using the port" is an important concept to recall when using the Guidelines and assessment template. It will not be necessary in all ports to fully meet every item in the assessment template for all types of waste. The Guidelines are intended to be applied as is practical for a particular port, and there is no need to cater for wastes that are unlikely to be produced by ships arriving in that port.

IMO has implemented an international reporting mechanism for allegations of inadequate waste reception facilities whereby ships' Masters submit a standard form (MEPC.1/Circ.469/Rev.2) containing details of the allegation to the flag State and port State. AMSA investigates reports relating to Australian ports, and provides information on the outcome of the investigation to IMO and the flag State.

National implementation of MARPOL waste reception facilities requirements in Fiji

The following is a brief review of Fijian legislation relevant to ships' waste in Suva.

Maritime Transport Decree 2013

Fiji is not yet party to MARPOL; however, legislation was recently passed to implement MARPOL annexes I, II, IV and V and allow Fiji to accede to the Convention. The *Maritime Transport Decree 2013* (MTD 2013) is expected to commence in late 2014, with accession to MARPOL following shortly thereafter. The MTD 2013 section 146 contains provisions to allow the Chief Executive Officer of MSAF to direct a port operator to provide reception facilities for the reception of harmful substances from ships.

Requirement for reception facilities

146.—

- (1) *The Chief Executive Officer may from time to time, by notice in writing, require any person who operates a port, marina or slipway in Fiji to provide at that port, marina or slipway a reception facility for the reception of harmful substances from ships.*
- (2) *Any person who fails to comply with the requirements of the Chief Executive Officer commits an offence and shall be liable upon conviction—*
 - (a) *to imprisonment for a term not exceeding 4 years or to a fine not exceeding \$100,000,000 and if the offence is a continuing one, to a further fine not exceeding \$50,000 for every day or part thereof during which the offence is continued to be committed; or*
 - (b) *to pay such amount as the Court may assess in respect of the costs incurred in respect of or associated with removing, containing, rendering harmless, or dispersing any harmful substance discharged as a result of the offence.*

'Harmful substances' is defined in section 128 and includes certain MARPOL wastes, as well as greywater and antifouling systems.

- (a) *petroleum in any form, including crude oil, fuel oil, sludge, oil refuse and refined petroleum products (other than petrochemicals which are noxious liquid substances) and includes the substances specified in the maritime regulations;*
- (b) *any substance specified in the maritime regulations and any mixture of those substances if carried in bulk in a ship;*
- (c) *drainage and other wastes from any form of toilet, urinal, or toilet scupper on a ship or offshore installation;*
- (d) *drainage from wash basins, wash tubs, and scuppers located in the dispensary, sick bay, or other medical premises of a ship or offshore installation;*
- (e) *drainage from spaces on a ship or offshore installation containing living animals;*
- (f) *waste water from a ship or offshore installation mixed with the drainage and waste specified in paragraphs (c), (d), or (e);*

- (g) *harmful Antifouling Systems on ships such as a coating, paint, surface treatment, surface or device that is used on a ship to control or prevent attachment of unwanted organisms; or*
- (h) *all victual, domestic, and operational waste (other than fresh fish or parts of fresh fish) generated during the normal operations of a ship or offshore installation and liable to be discharged continuously or periodically;*

Environment Management Act 2005

This legislation is important to ships' waste management as it provides for the government regulation of waste handling and treatment.

Waste management and pollution control unit

14. (1) *The Department must have a unit responsible for the waste management and pollution control consisting of the following public officers-*

- (a) *Waste and Pollution Control Administrator; and*
 - (b) *other public officers.*
- (2) *If, for any reason, the WPC Administrator or person acting in that capacity cannot perform any powers and functions in this Act or any other written law, the Director may perform those powers and functions.*
- (3) *The functions of the unit are-*
- (a) *to administer Part 5;*
 - (b) *to formulate, implement, monitor the National Solid Waste Management Strategy;*
 - (c) *to develop criteria and guidelines for landfill sites and dumps;*
 - (d) *to develop standards for the management of sanitary landfill;*
 - (e) *to formulate, implement and monitor strategies for minimization of packaging wastes, special wastes, liquid wastes and any other types of wastes; and*
 - (f) *to establish the National Chemical Management Plan based on the National Chemical Profile.*

Biosecurity Promulgation 2008

This law is relevant to any ships' waste that may pose a biosecurity risk. It is also relevant to the provision of reception facilities.

Facilities at biosecurity points of entry or departure

85.- (1) *The operator of every biosecurity point of entry or departure in the Fiji Islands must, to the extent possible, provide on the premises, for the purposes of this Promulgation and to the satisfaction of the Authority –*

- (a) *an area suitable for use as offices by biosecurity officers stationed at the point;*
- (b) *adequate space for the display of notices regarding the biosecurity requirements of this Promulgation;*
- (c) *areas for interview and, if necessary, physical examination of incoming passengers and crew, if required;*
- (d) *biosecurity holding areas as designated under section 19;*

- (e) *facilities and suitable containers for garbage collection and incineration or other disposal;*
 - (f) *facilities for the incineration or other disposal of regulated articles without creating an unacceptable biosecurity risk;*
 - (g) *fencing of premises in which garbage holding and disposal equipment is situated;*
 - (h) *any other facilities the Authority reasonably requests in writing as being needed for the performance of biosecurity functions at the point of entry or departure.*
- (2) *The operator of a biosecurity entry or departure point, whether or not a public officer, must keep the premises and facilities mentioned in subsection (1)(e), (f) and (g) free from weeds and vermin to the satisfaction of the Authority. An operator who fails to do so commits an offence.*
- (3) *No charge is payable by the Authority for the facilities to be provided under this section. If an operator fails to provide facilities as required by this section they may be provided by the Authority and the cost of such provision is a debt owing by the operator to the Authority.*

The *Biosecurity Promulgation 2008* also requires that the master of every incoming vessel must, while the vessel is in the Fiji Islands, take all reasonable steps to ensure that garbage is not disposed of in the sea, and is only removed from the vessel under and in accordance with the directions of a biosecurity officer (section 29(3)).

Litter Promulgation 2008

This law includes provisions that make it an offence to deposit any litter in a public place. It is considered that this law is relevant to ships waste because once removed from a ship, those handling the waste must not deposit it in a public place, rather it must be taken to a disposal site.

Ozone Depleting Substances Act 1998

This legislation implements the Montreal Protocol for Fiji, so it is relevant to the handling of waste ozone depleting substances that might be removed from ships.

The legislation:

- Provides for a licensing regime for those who handle, store, recycle or process ODS.
- Establishes an ODS Unit in the Environment Department.
- Requires a National Policy for Protection of the Ozone Layer
- Establishes a Fund consisting of Government appropriations, fees paid under the Act and other non-Government funding. The Fund is for
 - programmes for the establishment or management of any strategy or action plan required for the protection of the ozone layer; and
 - the administration of programmes to be established to give effect to the Vienna Convention for the protection of the Ozone Layer and Montreal Protocol on substances that deplete the Ozone layer.

Seaports Management Regulations 2008

- Prohibits discharges of pollution into port waters.
- Allows use of sewage treatment systems; however these regulations are not consistent with MARPOL requirements.
- Requires port management company (i.e. FPCL) written approval for discharge of waste to reception facilities or into port waters.

Gap Analysis Procedure

Preparation

The following preparatory work was carried out:

- SPREP liaised with the Maritime Safety Authority of Fiji (MSAF) to arrange initial meeting.
- An email survey on waste reception facilities from user's perspective was drafted by SPREP and AMSA, and sent by MSAF to shipping agents who are active in Suva (Appendix 1). Only one response was received.
- A summary and provisional agenda for the gap analysis was created by SPREP and AMSA.
- AMSA reviewed information on the website of Fiji Ports Corporation Limited (FPCL).

Port Visit

The gap analysis team conducted on-site work in Suva from 3-4 March 2014. The team held the following meetings:

- Initial meeting 3/3/14: MSAF, FPCL, Biosecurity Authority of Fiji (BAF), Department of Environment (DoE), Transam Agencies (Fiji), Pacific Agencies, Ministry of Transport, Secretariat of the Pacific Community (SPC).
- Meeting with key regulatory authorities 3/4/14: FPCL, DoE, Water Authority of Fiji (WAF), BAF
- 4/3/14: Total oil terminal

The gap analysis team also met with the Chief Executive Officer of MSAF (3/3/14) and the Minister for Transport (4/3/14) to provide briefing on the gap analysis and intended outcomes.

In addition to the meetings, the port area was visited to assess issues such as access, signage and waste receptacles. Fiji Ports escorted the team on this visit.

Relevant waste disposal sites were also visited, including:

- Quarantine waste incinerator operated by BAF located at Kings Wharf;
- Naboro Landfill managed by HG Leach (Fiji) on contract to DoE;
- Suva wastewater treatment plant managed by the Water Authority of Fiji (WAF);
- Waste oil recycling system operated by Fletcher Steel within their steel milling facility.

Reporting

Draft report May 2014

Comments on draft received from MSAF August 2014

Final report date

Gap Analysis Outcomes

Numbering and wording of questions throughout this section reflects that used in IMO Resolution MEPC.83(44).

A. Contact Details and Port Description

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Captain Hakaumotu Fakapelea,
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Mr Jeke Tavai,
Ministry of Transport

Fiji Ports Corporation Ltd representatives

Mr Vajira Piyasena,
Chief Executive Officer

Mr Ronald Sue,
Port Engineer

Port and surrounds

Fiji consists of over 300 islands and 500 islets amounting to a total land area of circa 18,300 square kilometres. 110 islands are permanently inhabited. The two major islands, Viti Levu and Vanua Levu, account for 87% of the population of almost 860,000. Viti Levu is the largest island, and Suva is located in the south east of this island.

The port of Suva is the largest and busiest port in Fiji. In addition to being the most important port in Fiji for container ships, Suva also handles cruise ships, bulk carriers, ro-ro, oil product tankers, general cargo and fishing vessels. There are 5 berths – three at Kings Wharf which handle most large international ships, Walu Bay primarily used for inter-island ferries and other domestic shipping, and Princess Wharf primarily used for fishing vessels. A large number of vessels, particularly foreign fishing vessels, anchor within the port. In addition, the Total oil terminal has a berth which is privately operated by Total, rather than FPCL. Fiji Ships & Heavy Industries Limited (FSHIL) provides ship maintenance and repair services and operates 4 slipways up to 1000 tonnes, including a floating slipway. The main wharf areas are indicated in the map in Figure 1, and pictured in Figure 2.



Figure 1: Map of main wharf areas



Figure 2a: Kings Wharf



Figure 2b: Kings Wharf



Figure 2c: Queens Wharf



Figure 2d: Vessels at anchorage

B. Summary of Waste Reception Facilities Provided

Table 1 – Summary of waste reception facilities in Suva

Type of Waste	Can Waste be Received? Yes or No	Type of Reception Facility (Fixed, Road Tanker or Barge)	Any Limitations in Capacity?	Service Provider
Oil Tankers: Oily tank washings or oily ballast water	Limited	Road tanker	High water content (e.g. unfiltered bilge water) is difficult for Fletcher Steel to process	Fletcher Steel
All ships: oily bilge water, sludges, used lube oils	Yes	Road Tanker	Storage capacity at Fletcher Steel at time of request may limit acceptable amount	Fletcher Steel Eco-oil?
Chemical tankers: NLS	No (but not currently required in Suva)			
Sewage	Yes	Road Tanker		
Garbage – Domestic vessels	Yes	Large bins on wharf		
Garbage – recyclables	Limited types. No direct collection from ships.			Pacific Batteries (lead acid batteries) South Pacific Waste Recyclers (paper) Coca Cola (PET bottles)
Garbage – Fishing gear	Yes	Large bins on wharf.		
Quarantine Waste – all garbage from international vessels	Yes	Large bins on wharf. Incinerator within port.		FPCL/BAF
Ozone Depleting Substances	No			
Exhaust gas cleaning system residues	No			

C. Demand for Waste Reception facilities

This section examines various aspects of demand for waste reception facilities.

A breakdown of shipping in 2013 provided by MSAF is presented in Table 2.

Month (2013)	Passenger	Dry Bulk	Liquid Bulk	Lolo	Roro/Lolo	Car Carrier	Fishing	Other	Total
Jan	6	2	7	20	3	1	33	4	76
Feb	6	1	7	19	1	1	27	3	65
Mar	4	0	6	21	2	1	28	1	63
Apr	2	3	7	23	1	1	41	2	80
May	2	0	8	22	2	1	20	6	61
Jun	1	1	8	25	1	1	36	4	77
Jul	0	1	6	23	3	1	35	4	73
Aug	3	1	9	25	2	1	30	2	73
Sep	3	1	9	25	2	1	29	2	72
Oct	7	2	7	25	1	1	23	7	73
Nov	5	1	6	28	3	1	21	4	69
Dec	1	1	9	22	1	1	27	5	67
TOTAL	40	14	89	278	22	12	350	44	849

Oily waste:

All ships potentially have oily waste on board e.g. used lubricants, oily sludge resulting from bilge water filtering, oily rags, oily bilge water – Suva received 849 ships in 2013.

Oil sludge generation depends on the quality of fuel. It has been estimated that sludge is generated at approximately 1-2% of daily Heavy Fuel Oil consumption^{1,2} and 0.5% of Marine Diesel Oil consumption³.

Ships larger than 400GT are required by MARPOL Annex I to have a sludge tank, so most large vessels will be able to store a certain quantity of sludge on board prior to incineration or disposal.

Oil tankers generate particular types of oily waste, particularly cargo slops and oily ballast water. Suva received 6-9 oil tankers per month in 2013. Oil products are received by the Total, Pacific and ExxonMobil fuel terminals. The quantity of product loaded by Total for transshipment to domestic ports is estimated to be 6-7 loads of approximately 2000T each. This does not trigger the MARPOL requirement⁴ for products loading ports to need cargo slops reception facilities.

1 Le Calvez, P. (2006) Oily waste management onboard of vessels. Lecture available at www.afcan.org/dossiers_techniques/gestion_dech_huileux2_gb.html

2 Palabiyik, H. (2003) "Waste Management Planning for Ship Generated Waste", *Journal of Naval Science and Engineering*, Volume 1, Number 2, July, 151-159.

3 Palabiyik H (above, n2).

4 MARPOL Annex I, Regulation 38.2.2

Noxious Liquid wastes:

Suva does not currently handle cargoes covered by MARPOL Annex II; therefore, there is no current need for reception facilities under MARPOL Annex II.

Sewage:

All ships potentially have sewage on board. The amount varies with the number of people on board, so cruise and larger naval ships will have large amounts of sewage, whereas cargo ships with a small crew will have much smaller amounts.

MARPOL provides for different options for onboard storage and treatment of sewage, which affect where the ship will be able to discharge sewage.

Ships with sewage treatment plants will be able to treat their sewage and discharge liquid effluent at sea. There may be a need for these ships to discharge sewage sludge in port, depending on the system.

Ships without IMO-approved sewage treatment plants may discharge disinfected (e.g. chlorinated) sewage or raw sewage at sea beyond 12nm. The need to discharge sewage to shore will vary depending on the size of holding tanks and the length of a vessel's stay in port.

Garbage:

All ships will have some garbage on board. The amount and type of garbage will vary depending on the number of persons on boards, and depending on the type of ship. Some particular examples:

- Cruise ships – very large amounts of domestic garbage due to the large number of persons on board. Food wastes and food and beverage packaging will feature. Medical wastes and certain small hazardous items (e.g. batteries, aerosol cans, photo processing chemicals) etc. may be present in larger quantities than on a cargo ship.
- General cargo– smaller amounts of domestic garbage, but garbage such as dunnage and other cargo-related waste might be more significant.
- Tankers – similar domestic garbage as for general cargo ships, but dunnage and other cargo packing materials probably not an issue.
- Fishing vessels – Damaged nets, lines and other fishing gear in addition to domestic garbage.

Theoretical estimates of garbage quantities

Estimates were made of the theoretical amount of garbage arriving in Suva (Table 3) based on an assumption of 2kg per person per day for non-cruise ships and 3kg per person per day for cruise ships⁵. It was also assumed that ships would spend an average of 3 days at sea prior to calling at Suva⁶, and the number of ship visits was calculated from the data supplied by FPCL (Table x).

5 Delfosse, S., McGarry, J. & Morin, T. (2010) Ship Generated Waste Disposal in the Wider Caribbean Region. www.wpi.edu/Pubs/E-project/Available/E-project-121610-185147/unrestricted/Team5_USCG1_IQP_FINAL.pdf

6 An estimate of 3 days was used in the SPREP Regional Reception Facilities study in 2002.

Table 3 Calculation of estimated garbage quantities in 2013

	Avg pax onboard	Avg days at sea prior to port call	Annual visits	kg.pax.day generated	kg generated per ship visit	Annual mass generated (kg)
Non-cruise	25	3	809	2	150	121350
Cruise Liners	2000	3	40	3	18000	720000
Total:						841350

BAF data for 2013 shows that around 583m³ was incinerated. It is difficult to compare estimates of the weight of garbage with data expressed as a volume, since composition and compaction of garbage would vary.

Annex VI wastes:

The need for reception facilities for Ozone Depleting Substances generally arises when ships' refrigeration, air conditioning or firefighting systems undergo maintenance.

Exhaust gas cleaning systems (EGCS) on ships are generally scrubbers that use water to remove soot from exhaust, the water is then cleaned in some way leaving a residue. IMO Guidelines advise that this residue could be expected to contain sulphites (e.g. CaSO_x, NaSO_x and KSO_x), ash/soot, metals (V, Ni, Mg, Al, Fe and Si) and hydrocarbons. It is prohibited to incinerate EGCS residues in shipboard incinerators.

The number of ships visiting Suva equipped with EGCS is unknown.

D. Assessment of Waste Reception Facilities

D1. Oily Wastes

D1-1

Where is oily waste disposed of?

- **Separation of oil and water then recycling** – Fletcher Steel recycles used oil as fuel for their furnace (Figure 3)
- ~~Land disposal~~
- ~~Recycled~~
- ~~Incineration~~
- **Ships to a holding tank prior to being pumped out** – the Royal Suva Yacht Club has a Fletcher Steel holding tank for the use of yachts visiting the marina.
- **Directly from the ship to a mobile facility** – Fletcher Steel and other recyclers collect oil from ship into road tankers.
- **Other** –



Figure 3a: Waste oil storage tanks at Fletcher Steel



Figure 3b: Oil and water separation at Fletcher Steel



Figure 3c: Waste oil reception tank, Fletcher Steel



Figure 3d: Small holding tank of the type provided by Fletcher Steel to marina.

D1-2

Are there any restrictions on receipt or collection of oily waste by service providers?

Normal port security and PPE requirements apply to road tankers entering the wharves to access ships.

Although Fletcher Steel can cope with the current demand, their capacity is limited, and ship's waste oil is often high in water content requiring time consuming separation, or very viscous requiring blending and/or heating. These issues may lead to a reduction in the cost-effectiveness for Fletcher Steel of using ship's waste oil. Fletcher Steel will not accept oily bilge water as the water volume to oil ratio is too large.

D1-3

Are oily waste reception facilities available:

- ~~24/7~~
- ~~24/5~~
- ~~9-5/7~~
- ~~9-5/5~~
- **Other** – service providers work during daylight hours only except in emergency. Fletcher Steel indicated that collections out of business hours were problematic.

D1-4

Is prior notice for receipt of oily waste required:

- ~~0 hours~~
- ~~12 hours~~
- ~~24 hours~~
- 48 hours

The *Seaports Management Regulations 2008* require notification at least 48 hours in advance of vessel requirements including “shore services normally supplied by the port management company” and “shore services not provided by the port management company but by a third party with the port management company’s approval”.

Fletcher Steel did not specify a particular time period. The notice is provided to Fletcher within the pre-arrival arrangement conducted by the ship’s agent. They also indicated that on occasion they may have to hire a truck if their own is unavailable.

D1-5

Is the oily waste receipt service available:

- at no cost – Fletcher Steel does not charge the ship for oily waste reception.
- ~~at a cost incorporated into standing port use charge~~
- at a cost charged in addition to other services – there is a Customs tariff on waste oil which is 5% of the value. Fletcher Steel advises that there is a formula for working out the value even though the oil is not to be sold.

D1-6

Is a waste collection service available

- at all berths ~~—~~
- at most berths – Oil tankers (light coastal tankers) discharging oil product at Total move to Kings Wharf for garbage discharge.
- ~~at only one berth —~~
- ~~to vessels anchored within the port —~~ There is no service for fishing vessels at anchorage and tankers discharging to Pacific and Exxon Mobil pipeline unless these vessels come alongside Kings Wharf.
- ~~to vessels anchored outside the port~~
- other

Assessment of the provision of waste reception facilities for oily waste:

~~1 – Less than Satisfactory~~ 2 – Satisfactory ~~3 – Fully meets the requirements~~

Comments:

It appears that oily waste from ships is reasonably well catered for in Suva, particularly by Fletcher Steel who have a comprehensive system for collecting, separating, and reusing the oil in their furnace. The system is also well maintained and documented, and appears to be seen by the company as an important contribution to their corporate environmental responsibility. The main limitation is capacity, particularly for oily water.

D2. Noxious Liquid Substances

At this point the needs of ships using the port do not include NLS cargo residues.

Assessment of the provision of waste reception facilities for noxious liquid wastes:

1—~~Less than Satisfactory~~ 2—~~Satisfactory~~ 3 – Fully meets the requirements

Comments:

At this point the needs of ships using the port do not include NLS cargo residues. Should bulk NLS, particularly any Category X cargoes be imported or exported through Suva in future, such facilities may become necessary.

D3. Sewage

D3-1

Where is sewage disposed of?

- **Directly from the ship to a mobile facility** – in theory this is how sewage would be received, but it seems to be extremely rare that ships will discharge sewage to shore. Trucks would take sewage to the Water Authority's wastewater treatment plant.
- ~~Ships to a holding tank prior to being pumped out~~
- **Other** – directly into the harbour (currently unregulated), or retained on board for discharge at sea.



Tanker truck discharging at WAF wastewater treatment plant

D3-2

Are there any restrictions on receipt or collection of sewage by service providers?

Normal port security and PPE requirements would be required for access to wharves.

The WAF liquid trade waste policy would apply, but it is unclear whether ships sewage would meet the standard required for discharge to the WAF wastewater treatment facility. It is likely that in many cases it would, but the presence of treatment chemicals or high levels of salt water may affect the functioning of the WAF biological treatment process.

D3-3

Are sewage reception facilities available:

- ~~24/7~~
- ~~24/5~~
- ~~9-5/7~~
- ~~9-5/5~~
- **Other** – WAF wastewater treatment plant is open 8am-5pm but access possible outside working hours.

D3-4

Is prior notice for receipt of sewage required:

- ~~0 hours~~
- ~~12 hours~~
- ~~24 hours~~
- **48 hours**

The *Seaports Management Regulations 2008* require notification at least 48 hours in advance of vessel requirements including “shore services normally supplied by the port management company” and “shore services not provided by the port management company but by a third party with the port management company’s approval”.

D3-5

Is the sewage receipt service available:

- ~~at no cost~~
- ~~at a cost incorporated into standing port use charge~~
- **at a cost charged in addition to other services** – a private truck would need to be hired, cost would vary depending on provider. WAF charges the truck company \$5 per load which may be passed on to the customer. There is anecdotal evidence that some drivers avoid the charge by illegal dumping of the load.

D3-6

Is a waste collection service available

- **at all berths** – as noted above, sewage reception theoretically possible by tanker truck.
- ~~at most berths~~
- ~~at only one berth~~
- ~~to vessels anchored within the port~~
- ~~to vessels anchored outside the port~~
- **other**

Assessment of the provision of waste reception facilities for sewage:

1 – Less than Satisfactory 2 – Satisfactory 3 – Fully meets the requirements

Comments:

A particular concern is whether commencement of the MTD 2013 later in 2014 may increase the need for sewage reception facilities. A lack of practical, affordable shore based reception facilities for both domestic and international ships' sewage may prevent the effective enforcement of the MTD 2013.

While it appears that in theory sewage could be received by tanker truck, it appears that ships are not engaging this service. The IMO guidelines MEPC.83(44) explain that adequate reception facilities are those which "mariners use".

While many merchant ships that come alongside for a day or less then return to sea on their onward voyage are likely to be able to manage their sewage onboard through treatment and discharge in accordance with MARPOL Annex IV, the large number of international fishing vessels anchoring in the harbour for long periods of time (months) is of concern as these vessels are unlikely to have significant holding capacity for sewage.

D4. Garbage Disposal – On Shore

D4-1

Where is garbage disposed of?

- **Local government dump/landfill** – a modern, sanitary landfill facility is available at Naboro, but it does not appear that it receives ships waste, except where it is mistakenly included in port-generated waste or waste collected by city council.
- **Transfer station** – no, however it appears there may be plans to establish a transfer station close to Suva for the Naboro landfill.
- **Materials recycling facility – limited materials can be recycled** e.g. lead acid batteries, PET bottles, some paper.
- **other**

D4-2

Where are quarantine wastes disposed of?

- Incinerator – BAF operate an incinerator located in port at Kings Wharf.
- ~~sterilization~~
- ~~deep burial~~
- normal landfill – BAF reported that occasionally they might fumigate large items e.g. rugs and send to landfill.

Are all quarantine waste receptacles

- secure from interference – no
- permanently labelled – no
- securely covered – no
- banded – no
- stored in a refrigerated facility – no
- protected from birds or other animals – no

D4 continued. Garbage Disposal – Ship to Shore

D4-3

Are there any restrictions on receipt or collection of garbage wastes?

International ships' garbage is quarantine waste.

Normal port security and PPE requirements apply to waste service providers to access wharves.

D4-4

Are garbage reception facilities available:

- 24/7
- ~~24/5~~
- ~~9-5/7~~
- ~~9-5/5?~~
- ~~Other~~

D4-5

Is prior notice for receipt of garbage required

- ~~0 hours~~
- ~~12 hours~~
- ~~24 hours~~
- 48 hours

The *Seaports Management Regulations 2008* require notification at least 48 hours in advance of vessel requirements including “shore services normally supplied by the port management company” and “shore services not provided by the port management company but by a third party with the port management company’s approval”.

Garbage intended for disposal at Naboro landfill should be notified 2 hours (special waste) or 3 days (hazardous waste) in advance to allow the landfill managers time to assess information against acceptance criteria and make appropriate arrangements.

D4-5

Is the waste receipt service available

~~• at no cost~~

- **at a cost incorporated into standing port use charge** – BAF charges a flat rate to international ships of \$112.13 (business hours) and \$174.92 (after hours) which includes boarding and supervision of garbage removal regardless of the quantity of garbage removed.

~~• at a cost charged in addition to other services~~

D4-6

Is a waste collection service available

~~• at all berths~~

- **at most berths** – tankers discharging product at Total have to move to Kings Wharf for garbage removal (and bunkering).

~~• at only one berth~~

- ~~• to vessels anchored within the port~~ – garbage reception is not available to ships at anchor, they must come alongside.

~~• to vessels anchored outside the port~~

~~• other~~

Assessment of the provision of waste reception facilities for garbage:

1 – Less than Satisfactory 2 – Satisfactory 3 – Fully meets the requirements

Comments:

The arrangements for garbage cannot be considered satisfactory because the facilities do not enable garbage to be disposed of in an environmentally appropriate way. The main issue is that handling of quarantine waste in port is not appropriate. The gap analysis team observed bales of quarantine waste placed directly on the wharf, some were split open. There was no bunding, and the garbage was in contact with rainwater puddles on the wharf. The storage area was also directly adjacent to a main vehicle access but garbage was not well contained in the area. There is no fencing or other means to restrict access to the storage area by authorised persons, although the incinerator shed itself is locked.

We also observed what we were informed was a quarantine bin on the wharf which was open and unattended. It was also not labeled as being for quarantine waste. Other general port waste receptacles were also not labeled which raises the question as to whether it is clear to wharf users which bins they may and may not use for quarantine waste.

There is no service available to a very large number of ships, particularly fishing vessels, anchored within the harbour unless these ships come alongside. There is evidence that the anchored vessels are regularly discharging garbage overboard or putting garbage in municipal waste bins on the foreshore.

There is also anecdotal evidence that larger ships are discharging garbage overboard as soon as the ship leaves port limits. A major cruise line has previously audited the waste reception facilities and decided that garbage handling and transport is not appropriate, and refuses to discharge waste in Suva on those grounds.

There is an emerging recycling market in Fiji and certain types of garbage are currently able to be recycled including lead acid batteries, some paper and PET bottles. However, there is no direct collection service available, so it would be the responsibility of ships agents to arrange for transport of recyclables to the relevant receivers. This is unlikely to be commercially viable for the shipping company.

D4A – Annex VI wastes

Ozone depleting substances

Fiji is party to the Montreal Protocol, as such ODS must be handled and disposed of according to strict procedures set out in the *Ozone Depleting Substances Act 1998* enforced by DoE. A licensed technician would need to be engaged to remove the ODS from the ship.

There are no current means of destroying ODS in Fiji, so the only option would be to stockpile and export ODS for destruction in Australia or New Zealand. Export is subject to the availability of funding.

Exhaust gas cleaning system residues

At this stage a precautionary approach is taken in determining that such facilities are not available. It is possible that such residues may be handled in the same manner as oil sludge; however recognizing that EGCS residues are of variable composition this would be subject to confirmation by the receiver and may depend on the vessel or scrubber system.

Assessment of the provision of waste reception facilities for Annex VI wastes:

~~1 – Less than Satisfactory~~ 2 – Satisfactory ~~3 – Fully meets the requirements~~

Comments:

Reception facilities for Annex VI wastes have been assessed as “satisfactory”. It should be recalled that at this point Fiji does not intend to accede to MARPOL Annex VI so in a strict sense there are no obligations to provide reception facilities under Annex VI. Limited arrangements are in place for ODS, although arguably stockpiling with no certainty that export will be possible is less than ideal.

The difficulties faced by certain ports remotely located from or lacking in the industrial infrastructure necessary to manage and process Annex VI wastes is acknowledged in MARPOL Regulation 17.3. As such, there is an allowance that such ports may be exempt from the requirement to receive these wastes. In that case, they shall inform IMO that facilities are not available.

In any future consideration of accession, the need for adequate reception facilities for Annex VI wastes would need to be addressed. Planning for such facilities could potentially include recovery of re-export costs. Fiji should ensure that the IMO database on port reception facilities is kept up to date.

D5. Waste Management System

D5-1

Has a waste management plan been developed and implemented for ship wastes?

No. The Department of Environment is currently developing Terms of Reference for a consultant to develop a port EMS.

D5-2

Is the Waste Management Plan part of an overall Environmental Management System for the port?

n/a – see D5-1.

D5-3

Are marinas and fishing harbours covered by the port EMS or required to develop their own EMS?

There is no port EMS and no requirement for marinas or fishing harbours to develop an EMS.

D5-4

Does the WMP provide a brief summary of the types of wastes received and the collection and disposal facilities/services?

There is no WMP. No such summary appears to exist elsewhere.

D5-5 to D5-8 (WMP Objectives)

The absence of a WMP makes it difficult to evaluate these items.

D5-9

Does the WMP address and provide management objectives for plans for future expansion/upgrades:

No.

D5-10

Are contact details held for all waste service providers?

There does not appear to be a central list of waste service providers maintained by the Port. DoE can provide a list of licensed waste service providers.

D5-11

Are the service providers licensed/approved as required by legislation?

Some service providers operating in the port are licensed, but it appears that others may not be licensed or complying with licence conditions. DoE has extremely limited resources to enforce licence conditions.

D5-12

Are a copy of the licenses held on file?

Yes – DoE maintains a database of licensees.

D5-13

Are copies of the licenses for the waste disposal facilities used by the service providers held on file?

Yes – DoE maintains a database of licensees.

D5-14

Have receipts for waste disposal been sighted/copies held on file?

Receipts are provided directly to shipping agents. Some service providers e.g. Biosecurity and the Naboro landfill issue invoices. It is not known to what extent individual trucking companies issue receipts and maintain files.

D5-15

Are alternative waste service providers or disposal facilities available (e.g. spare drums, waste oil recyclers)?

Fletcher steel has spare oil tanks.

FCPL has no spare bins; however, there was no immediate evidence that the existing bins were insufficient e.g. they were not observed to be overflowing.

There are a number of commercial waste trucking companies in Suva.

D5-17

Are the details of back-up facilities on file?

Fletcher Steel's system is well-documented.

D5-16

Is there a procedure for choosing waste disposal service providers (e.g. list of preferred contractors)?

FPCL contracts Waste Clear for waste generated in port. This company has had the contract for quite some time. FPCL uses a tender process for selecting service providers. Shipping agents choose service providers on the basis of their own knowledge of the market and based on price.

D5-18

Does the WMP include an emergency response plan?

There is no WMP; however, the port's draft Standard Operating Procedure includes emergency response.

D5-19

Is the plan adequate in that it addresses at least the following [emergency response] issues?

The port's draft Standard Operating Procedure was not made available to the gap analysis team.

D5-20

Is information recorded on the quantities of each waste stream which are received, date of receipt, disposal contractor and method of disposal or treatment?

Biosecurity were able to provide an aggregate figure for 2013 of quarantine waste incinerated.

D5-21

Are there variations in the quantities of each waste stream received?

- ~~in any one month (e.g. due to shipping variations)~~
- ~~in any one year (e.g. due to seasonal effects)~~
- ~~over a number of years (e.g. due to industry growth)~~
- don't know

D5-22

Is this information analysed on an on-going basis to detect changes in usage (both short term season variations and long term growth or reductions) and assist in formulating future plans?

Information on ship's waste is not analysed.

D5-23

Is ongoing consideration given to changes in demand for waste reception facilities?

No.

D5-24

Do plans exist for future upgrades [to waste reception facilities]?

Yes. The quarantine incinerator is being upgraded from 3m³ to 6m³ in the next financial year.

D5-25

Is there an on-going process for reviewing existing facilities and determining changes that may be required to meet adequacy, timing or waste generation demands?

No.

D5-26

Are there provisions for audits against the WMP (at least within 2 years of implementation and thereafter every 3 years?)

There is no WMP.

D5-27

Is there provision for periodic review of the WMP?

There is no WMP.

D5-28

Are the relevant requirements of the MARPOL 73/78, UNCLOS and IMO generally adhered to by the users of the port?

Fiji is not yet a Party to MARPOL, but has passed legislation that will enable it to accede to Annexes I, II, IV and V of the Convention in late 2014. The current practice of many ships operating in Suva would not be in compliance with MARPOL. MSAF advises that there is poor adherence to IMO safety requirements.

D5-29

Is there information on the state and local regulations regarding waste management, pollution of water, pollution of air, noise emissions, discharges to sewer, storage of dangerous goods etc (please list legislation if known):

The FPCL website provides the text of several relevant instruments including the Seaports Management Regulation, and the Environment Management Act. All agencies involved in the gap analysis had good knowledge of their own legislation, and copies were readily available.

D5-30

Is there information on waste minimisation hierarchy (i.e. avoid/ reduce/ reuse/ recycle/ reprocess)?

No, however DoE is at an advanced stage of developing a program to promote the 3Rs.

D5-31

Is an open and co-operative relationship maintained between the port authority and the relevant authorities and agents?

There were no indications that there were any problems in this regard.

D5-32

Are there channels of communication and consultation with relevant organisations to ensure that particular changes in demand are considered in providing waste reception facilities?

FPCL has a port user's forum which includes agents, Biosecurity, MSAF and others.

D5-35

Do training programmes for port employees (both of the port authority and users) include a section on waste management and the facilities provided at the port?

No.

D5-34

Is there a section in the WMP or a separate document which is included in agreements with port users and specifies requirements for the usage of port waste reception facilities?

No.

D5-35

Is clear and visible signage for waste reception facilities present and includes:

- **advice at initial vessel contact point of waste reception facilities –**
- **direction to receptacle or disposal point location –**
- **labeling of all receptacles and disposal points –**
- **contact numbers –**
- **emergency procedures –**
- **translation into other languages as required –**

In general no – there are many bins on the wharf but it is not clear what they are for or who may use them.

D5-36

Are information sheets/leaflets available for each waste reception facility?

The Naboro landfill has an information sheet. WAF publishes pamphlets on liquid trade waste but it is unclear how this could apply directly to shipping.

D5-37

How is information on waste reception facilities conveyed to ships?

Shipping agents advise Masters directly.

A copy of the *Environment Management Act 2005* and the *Seaports Management Regulations 2008* are available on FPCL website.

A private publication *A Mariners Guide to Fiji Shores and Marinas 2014* aimed at visiting international yachts is available at www.fijimarinas.com and in hard copy at yacht clubs and marinas, and provides practical information on biosecurity and recycling of garbage and waste oil. It also provides encouragement regarding waste minimisation and avoiding discharging waste where there are no appropriate facilities. This publication also explains the restrictions on overboard discharge of waste and shipboard incineration.

Assessment of the waste management system:

1 – Less than Satisfactory ~~2 – Satisfactory~~ ~~3 – Fully meets the requirements~~

Comments:

There is no coherent waste management system, although certain elements exist among other port procedures and agency record-keeping processes that could be drawn together into a waste management plan, for example licensing details are available from DoE, and quantities of incinerated quarantine waste are recorded.

There is no systematic process for monitoring waste reception demand or whether that demand is being met through existing arrangements. There is also only a very limited ability to monitor the fate of any waste received from ships. It appears that while the legal framework exists to ensure waste is handled and ultimately disposed of in an environmentally responsible way, there are insufficient resources to enforce the requirements, particularly regarding waste service provider licensing.

It would be desirable to make available clear information on waste arrangements for ships in the form of signage and/or publication on the FPCL website.

It is encouraging that DoE is developing terms of reference for a port waste management plan. This represents an ideal opportunity to deal with ships' waste within that context.

E. Assessment of adequacy of service

The results of the agents survey are summarised below. Table 4 lists the agents who were invited to complete the survey. Only one agent responded.

Table 4 – List of agents surveyed

Organisation	Representative	Contact	Date
Transam	Bradley Bower	bradleyb@transam.fj	4/3/2014
Wiliam & Goslings	Eddie Yuen	eddiey@wgfiji.com.fj	4/3/2014
Pacific Agencies	Craig Strong	Craig.strong@pacshipfiji.com.fj	4/3/2014
Shipping Services Limited	Ilisapeci Sucu	Ilisapeci.delailakebasucu @ssfl.com.fj	4/3/2014
Neptune Shipping	Vili Masau	nmasau@neptune pacific.com.fj	4/3/2014

Why ships might or might not chose to deliver waste to shore in Apia

The one agent who replied advised that ships only discharge what agents advise they can discharge according to government regulations. The agent commented that all requests are forwarded to the regulatory authority for advice/approval.

Difficulties making arrangements

No particular difficulties were identified by the agent.

Overall satisfaction

The one agent that replied to the survey was of the view that waste reception facilities are not sufficient for a hub port, such as Suva as positioned itself. Limits in oily waste reception capacity and the urgent need for waste reception to cater for passenger ships was also noted by the agent.

Conclusion – Gaps and Opportunities

Suva is a hub port both for the Fiji islands and for the Pacific. With close to 900 ship visits annually and an agenda for acceding to MARPOL in the near future, it is imperative that environmentally responsible waste reception facilities are adequate for the needs of ships using the port. It is concluded that while reception facilities are less than satisfactory and there is a lack of a coherent ships waste management system, there are many encouraging elements that require relatively straightforward efforts and modest investment to attain adequacy.

There is a legislative framework and appropriate waste disposal infrastructure in Suva, but challenges exist in enforcing requirements and facilitating the transfer of waste from ships to waste disposal sites.

The need for a coherent waste management system for the port of Suva is recognised by authorities, as evidenced by current DoE work on developing terms of reference for a port waste management plan. There is an ideal opportunity to ensure that ships waste is covered as well as port-generated waste during the development of this plan. The IMO guidelines provide a useful reference for the content of the plan. Incorporating effective monitoring of demand and service provision will enable authorities to respond to changes in shipping with economic development and any new port constructions.

It seems that there are opportunities to utilise waste disposal options in Suva that are not currently being taken. For example, the Naboro landfill would appear to provide a suitable disposal site for some types of ships waste. The WAF wastewater treatment plant is also likely to be capable of accepting and treating ships sewage, There are challenges – the cost of transporting waste there needs to be affordable, and transport needs to be reliable.

Some wastes may require pre-acceptance analysis, and some may require Biosecurity clearance, and some may be rejected on the basis of Department of Environment or WAF acceptance criteria. Acceptance criteria need to be more effectively communicated to shipping agents, so that it is not merely assumed that all ships waste will be rejected when in fact many types of waste may be acceptable subject to appropriate clearance.

A major gap exists concerning the international fishing vessels at anchor in the harbour for long periods of time. There is no reception of any type of waste from these vessels unless they come alongside the berth when they would not otherwise need to. It is suggested that MSAF and FPCL consider the viability of a barge service for these vessels.

Temporary storage at the port needs some consideration, in particular the handling of quarantine waste destined for incineration. There may also be opportunities to install temporary storage facilities for oil or sewage to create efficiencies in transport to disposal sites and improve the accessibility of reception facilities to ships crews.

Communication of waste reception arrangements could be improved, for example through publishing information on types of waste received and how to make arrangements on the FPCL website. Labeling of receptacles on the wharves should indicate which bins are for international quarantine waste and which bins are for general waste only. Communication of requirements and restrictions is also important, particularly in light of the new Maritime Transport Decree 2013. Waste acceptance criteria could also be more effectively communicated to agents as it appears there is an assumption that all ships waste will be rejected. Waste industry representatives could be usefully included on the port user forum.

A series of detailed recommendations is listed below. Importantly, there is a recommendation that the Ministry for Transport should consider how it can facilitate the implementation of the recommendations through funding and other support in the context of the Ministry's goal to provide an environmentally sustainable transport system.

Recommendations

1. In light of the new requirements under the Maritime Transport Decree 2013, MSAF and FPCL should develop a communication strategy to ensure that agents and ships crews are aware that MARPOL will now apply to disposing of ships waste, and what the options are for appropriate disposal.
2. DoE should ensure that a consideration of ships waste is incorporated into Terms of Reference being developed for the Environmental Management System being commissioned for the port. In developing the port EMS, the IMO Guidelines should inform the content of the ships waste aspects of the EMS.

3. DoE should consider the need for additional resources to ensure that the appropriate handling of ships waste can be enforced.
4. FPCL and DoE should consider developing a means for FPCL to restrict access to port based on an appropriate waste handling license.
5. Biosecurity and FPCL should develop a program to consider trends over time in shipping and amounts of waste being landed.
6. MSAF should work with Fletcher Steel and other oil recyclers to plan for the expected increase in oily waste reception demand following commencement of Maritime Transport Decree 2013.
7. FPCL should consider including a line item for ships waste to be discharged in their berthing application form, and have an appropriate procedure for passing on this information to Biosecurity and other relevant persons who will need to be involved in waste transfer.
8. FPCL should consider providing a summary of wastes received and licenced waste service provider contact details on the FPCL website.
9. Relevant agencies should ensure that ships waste reception facilities are addressed in development of new port, and that appropriate operating procedures are developed.
10. FPCL should consider including waste industry representative(s) in the port users forum.
11. FPCL should provide appropriate storage for quarantine waste adjacent to incinerator e.g. bunded area with covered, leak proof, lockable bins. Covered, leakproof, lockable and labelled bins should also be available for deployment alongside ships when necessary.
12. FPCL should consider installing multi-language signage to advise wharf users not to place quarantine waste in port general waste receptacles.
13. BAF should investigate contingency options for quarantine waste in excess of the incinerator's capacity, or when incinerator out of service e.g. the hospital incinerator, deep burial. BAF should also develop appropriate procedures for accessing these contingencies. It is recognised that the Biosecurity Promulgation 2008 may need to be amended to allow for options other than incineration.
14. FPCL & Fletcher Steel should consider temporary storage of oil in port (e.g. in small tanks provided by Fletcher Steel).
15. DoE and BAF should consider how to facilitate the greater use of Naboro landfill for ships waste that meets the landfill acceptance criteria and does not pose a biosecurity risk. This may include working with shipping agents to promote understanding of the acceptance criteria and procedures to have general, special and hazardous waste approved for acceptance, and developing a list of wastes commonly on board ships that are likely to be acceptable.
16. For any garbage or sewage transported by truck to the Naboro landfill or WAF treatment plant, agents should negotiate payment of trucking company only on receipt of gate invoice and weighbridge data. FPCL could also consider such a system for port area waste.
17. Water Authority (WAF) to include in the liquid trade waste policy a standard of ships sewage and greywater waste streams that can be accepted by the WAF wastewater treatment plant.
18. FPCL and WAF to consider the case for temporary storage or pre-treatment of ships sewage or greywater within the port, prior to transfer by truck to the WAF waste water treatment plant.

19. FPCL and WAF to consider the case for installing a sewer connection to Kings Wharf to enable cruise ships and other ships to discharge sewage directly to the waste water line, provided a standard can be established for acceptable effluent quality (see Recommendation 17).
20. MSAF and FPCL to consider options for establishing a garbage and waste oil collection service for anchored ships e.g. a barge that runs every few days around the anchorages.
21. Ministry for Transport should consider how it can facilitate these recommendations through funding or other support.

Appendix 1

Agents survey questions

1. What kinds of ships do you manage?
2. Approximately what number and/or proportion of your ships would request
 - a. Garbage
 - b. Oily waste
 - c. Sewage
 - d. Noxious liquid substances prewash
 - e. Solid bulk cargo residues (dry or contained in hold wash water)
 - f. Ozone depleting substances
 - g. Exhaust gas cleaning system residues
 - h. Antifouling systems waste
 - i. Ballast tank sediments
3. Do you have any views on why your ships might or might not choose to deliver waste to shore in Apia Port?
4. How/with whom do you make arrangements for waste reception?
5. Have you had any particular difficulties in making these arrangements?
6. Overall, are you satisfied with waste reception facilities in Apia Port?

