



# **HONIARA CITY COUNCIL**

## **ENVIRONMENTAL HEALTH DIVISION**

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## **SOLID WASTE MANAGEMENT IN HONIARA**

### **1.0 INTRODUCTION**

Solid waste management in Honiara is still quite in its very low stage and is solely institution based, which means it is entirely a city council business. “They are elected and employed to build and maintain infrastructure keeping the city clean through solid waste management”. This is a public assumption and mentality This makes solid waste management still a great challenge in the city of Honiara.

### **1.1 DEMOGRAPHIC DATA**

Honiara city is on Guadalcanal and has population of approximately 70,000 people. This includes the mobile population who are constantly on the move to Honiara from the rural areas on short term visits on business and private interests.

### **1.2 DEFINITION**

#### **What is waste?**

Waste is any substance that has no value or use to the possessor or owner.

### **1.3 STEPS OF WASTE MANAGEMENT IN HONIARA**

Waste management has considered 4 main steps of activities as important in proper and economical management of waste.

These steps are **Waste generation, Storage, Collection and Transportation and Final Waste Disposal.**

#### **1.3.1 WASTE GENERATION**

The knowledge of waste generations by the character, volume, type and nature is quite important for waste management in Honiara. The point of waste generation is where reduction mechanisms and activities could be placed and instituted. These are mechanisms like the segregation process and the use of the 4R action ideas such to refuse, reduce, reuse and recycle.

Proper and appropriate mechanisms placed at the point of generation determine and is an important influential factor to the waste storage requirement.

### **1.3.2 SOURCES OF WASTE GENERATION IN HONIARA**

There are three major points of waste generation in Honiara. These are the residence, commercial centers and the industries.

- The residences generate mostly **organic waste** such as **garbage, green waste** and **general rubbish** from **household broken items**.
- The commercial centers generate mostly organic waste such as **cardboard boxes, papers and putrefied foods with high amount of plastics, nylon ropes and minimal amount of tie wires and metal straps**.
- The industries in Honiara are light and small timber yards including mechanical shops and hardware that generate mostly sawdust, car bodies and other waste metal parts.

According to John Nanau's waste management studies in 2006 waste generation was 0.88 kgs per person per day. In 1998 a study conducted by Mr. Sinclair stated that waste generation rate per capita / person per day were 0.64kgs. The annual waste generation rate for Honiara was estimated to be 10 to 13000 tons of waste per annum. Waste reduction is still an important for public awareness in the Honiara Communities and stakeholders.

## **2.0 WASTE STORAGE**

In Honiara, waste storage bears a great emphasis but is still an enormous challenge. A broad range of waste storage is used from card board boxes to 200 liter drums.

The Environmental Health Division is currently working towards standardizing bins for waste storage in Honiara. It is realized that proper waste storage is important for a number of health and economic factors such as of the following.

- Prevents eye sore or aesthetic problems in the community
- Prevents the harborages and breeding of disease vectors such as flies, mosquitoes, rodent, coach roaches and other vermins
- Prevent bad order emission.
- Reduces pollutions of the environments and the waters
- Raises recreational values of the land
- Reduces physical risks to children playing around their homes

- Clean environments compatible to tourism industries which are good for the country's economy.

## 2.1 WASTE STORAGE CRITERIAS IN HONIARA CITY

- All premises must have the adequate number of storage bins for durations between collections.
- The bins must be made of strong materials to with stand frequent handling.
- The waste bins or receptacle must be of appropriate capacity 3ft<sup>3</sup> or 100 liters.
- All waste bins must have tight fitting lids.
- Bins or waste receptacles must be firmly fixed and secured or placed on platforms; waste storage is an influential factor to the effectiveness, efficiency and the cost of the waste collection.

Waste in Honiara need to be standardized to 3ft<sup>3</sup> size bins in volume, as in line with the Environmental Act and Regulation 1980. The Environmental Health Division is intending to carry out a mass media campaigns on proper storage of wastes in standard bins. With the 11 to 12000 house holds in Honiara, the Environmental Division has anticipated making available standard storage bins on affordable costs. A standard waste bin in Honiara Costs about SI\$175.00 (US\$17.50).

## 3.0 WASTE COLLECTIONS AND TRANSPORTATION

There are two separate operations of waste collections in Honiara.

**The first and major collection is the residential waste collection.** This involves 10 refuse contractors who works under a two year contract signed to 10 zones demarcated through out the city starting from White River to KGV School (East Honiara). With the zone demarcations, a collection schedule indicating the travel route was also designed. Collections are scheduled for Mondays, Wednesdays and Fridays each week. Each contractor is expected to work for 12 days in each month. The current rate of each contractor is \$6500.00 per month (12 days) all waste collected is tipped at Ranadi waste dump.

This contract arrangement is only an internal measure which the Council hope to phase out in early 2009. The Council decided to build up its capacity in terms of garbage compactor vehicles in order to take over the refuse collection roles because this is a Council statutory duty. It would also be cheaper, effective and efficient if the Council carries out refuse collection at the cost of the contractors. The Council would need four (4) new compactors to take over refuse collection in Honiara City

**The second waste collection operation is done under a trade refuse agreement between the Council and the Commercial Centers such as shops, snack bars and other food establishments.**

The formal administration of this waste, activity is carried by the Environmental Health Division and the actual collection is done by the works division of the council. With the use of 3 x 3 ton compactors the council charges \$10.00 per drum per collection.

#### **4.0 FINAL WASTE DISPOSAL**

All waste are tipped and disposed at Ranadi Landfill. The wastes are unseparated. Wastes are tipped merely on a large expanse of land and are doze covered after 1 to 2 weeks.

As stated by Sinclair 1998, the major component of the total volume of waste deposited at the landfill is organic waste which forms 64.46 %.

Hospital wastes are burned in a pit at the waste dump. There is also a rocket shaped incinerator for burning of clinic wastes from all the Honiara clinics at the Waste dump. This is not frequently used due to lack of appropriate vehicles for separate collections of health care wastes. An appropriate vehicle for collecting health care wastes from the 8 clinics in Honiara would be about 1.5 ton enclosed at the back.

#### **4.1 CONTROL OF WASTES**

Waste dumped at the landfill is not well contained or fully controlled. This is due to the following reasons;

- There is no secure gate and fence around the landfill
- The landfill is unlined with impervious lining materials to control all leachates.
- There are so many Scavengers that are difficult to control.
- Human and animal Scavengers carry and litter wastes around the perimeter of the landfill.

#### **4.2 LANDFILL MANAGEMENT**

Two landfill Supervisors are posted on site everyday. Their main task is maintaining clear directions on to designated tipping spots by means of using drum alignments.

#### **4.3 SMOKE EMISSION**

Emission of smoke is a severe public health nuisance at the landfill. This increases the chemical and physical risks at hand.

#### **4.4 HEALTH RISKS**

Biological risks in terms of Pathogenic germs and other harmful organisms are threats in the landfill. Chemical risks are high through smoke, leachates and gas emissions. Physical risks are also high in terms of sharps and other sharp metallic materials.

#### **5.0 LIMITATIONS**

- Lack of adequate finance often result in the under payment of Refuse Collectors thus lowering moral that lead to the reluctance of contractors collecting wastes.
- There is lack of appropriate machineries and equipment such as Bulldozers, Loaders and Dump trucks to manage the landfill
- There is lack of adequate budget and funding for Solid Waste Management at Honiara City Council.
- Inadequate number of trained manpower.

#### **6.0 RECOMMENDATIONS**

- Consider Solid Waste Management at Honiara City Council as top priority and increase budget.
- Solicit external funding to purchase 1dozer, dump truck and loader for the management of landfill.
- Solicit external funding to purchase a 1.5 ton vehicle for collection of health care wastes from all the 8 clinics in Honiara.
- Solicit external funding for 4 garbage compactors for refuse collection in Honiara.
- Train adequate manpower to manage waste collection and Ranadi landfill

## **7.0 CONCLUSION**

The approximate budget on the equipments for Solid Waste Management in Honiara as recommended above is as follows:

1. One D6 bulldozer for dozing Ranadi Waste Dump - **SI\$1,000,000.00.**
2. 2 X 5 ton Compactors for refuse collection at the streets- **SI\$3,000,000.00**
3. 2 X 3 ton Compactor for refuse collection on the ridges - **SI\$600,000.00**
4. 1 X Excavator/Backhoe for excavating and loading soil cover- **SI\$900,000.00**
5. 1 X Dump truck for loading soil cover for the Dump- **SI\$350,000.00**

Total cost of Equipments is - **SI\$5,850,000.00 (US\$585,000.00)**

Drastic steps need to be taken through a wider consultation between stake holders in Honiara in order to make Solid Waste Management a more community based rather than it be solely institution based.