

***ANNEX 4.1 Guideline for Municipal Solid Waste Collection and
Transportation in Nairobi City County***

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Guideline for
Municipal Solid Waste Collection and
Transportation
in
Nairobi City County

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1. Introduction

1-1 Purpose

This guideline has been developed for the purpose of contributing to the stable collection of general waste by the Nairobi City County (NCC) benchmarking with the collection and transportation of household waste in Japan cities. The guideline offers a description of the management and safe operation of vehicles, as well as waste collection work plans.

1-2 Scope

This guideline is designed for waste collection and transportation activities in the whole City. It will be operational as of 2014, and will be revised accordingly when need be.

2. Waste Collection & Transport Vehicles

2-1 Creating vehicle management registries

A vehicle registry is a list of all the vehicles that NCC owns for waste collection and transportation. Registry entries include the NCC number, vehicle registration number, vehicle manufacturer, vehicle type, loading capacity (ton), accident compensation insurance, valid period of inspection, purchase date, and number of years in operation since purchase. Inclusion of this information ensures accurate

【Explanation】

Staff responsible for vehicle management will enter the following information about a vehicle in “Attachment 1: Vehicle management registry” any time a vehicle is purchased, when renewing accident compensation insurance, and when a vehicle is inspected.

(1) NCC number

Enter the serial number of the vehicle owned by NCC.

(2) Vehicle registration number

Enter the vehicle registration number (license plate number) located on the front and/or back of the vehicle, as specified by law.

(3) Vehicle manufacturer

Enter the name of the vehicle manufacturer.

(4) Vehicle type

Enter the type of vehicle (box-type dump truck, dump truck, etc.)

(5) Loading capacity

Enter the vehicle's loading capacity (ton).

(6) Accident compensation insurance

Enter the name of the insurance company that holds the accident compensation insurance policy and the period of validity.

(7) Valid period of inspection

As in Japan, by law, vehicles that carry cargo or loads must undergo maintenance checks, and inspections must be carried out each year. Enter the valid period of inspection for the vehicle as required by the Kenyan law.

(8) Purchase date

Enter the date of purchase of the vehicle.

(9) Number of years in operation

Enter the number of years the vehicle has been in use since the date of purchase.

2-2 Creating vehicle maintenance records

Vehicle maintenance should be carried out by staff responsible for vehicle maintenance and vehicle repairmen at the NCC workshop. Information on vehicle maintenance should be entered in "Attachment 2: Vehicle maintenance record" to list the details of past vehicle maintenance checks.

【Explanation】

Staff responsible for vehicle maintenance will enter the following information about the main details of maintenance work carried out on vehicles.

(1) NCC number

Enter the serial number of the vehicle owned by NCC.

(2) Vehicle manufacturer

Enter the name of the vehicle manufacturer.

(3) Vehicle registration number

Enter the vehicle registration number (license plate number) located on the front and/or back of the vehicle as specified by law.

(4) Vehicle type

Enter the type of vehicle (box-type dump truck, dump truck, etc.)

(5) Purchase date

Enter the date of purchase of the vehicle.

(6) Loading capacity

Enter the vehicle's loading capacity (ton).

(7) Maintenance date

Enter the date maintenance work was carried out.

(8) Details of maintenance work

Enter the details of maintenance work.

(9) Maintenance costs

Enter the cost of parts purchased and other required maintenance costs.

(10) Name of NCC staff and/or company in charge of maintenance

Enter the name of the staff or company that carried out maintenance work.

(11) Mileage

Enter the vehicle mileage at the time of maintenance.

2-3 Filling-in daily driving reports

Drivers will enter the vehicle's NCC No, vehicle number, amount of fuel and oil lubricant, mileage, weight of trash transported, working hours, and results of vehicle inspections in "Attachment 3: Daily driving report." Drivers will also enter details of actual or perceived problems experienced when using the vehicle, and report to the staff in charge of vehicle management after work is completed. Staff in charge of vehicle management will take the necessary measures based on this report. A typical daily driving report is attached at the end of this report.

【Explanation】

(1) NCC number and vehicle registration number

The NCC number is the serial number of the vehicle owned by NCC.

The vehicle registration number is the number of the vehicle as set by law that is located on the front and/or back of the vehicle (i.e., license plate number). Enter both the NCC number and the vehicle registration number.

(2) Amount of diesel oil, gasoline, and oil lubricant

Enter the amount of diesel oil, gasoline, and oil lubricant, respectively.

(3) Odometer readings when leaving/returning to garage and mileage

Enter odometer readings when leaving or returning the vehicle to the garage. Calculate and enter the vehicle's mileage.

(4) Gross vehicle weight, vehicle weight, waste net weight

Enter the gross vehicle weight (i.e., weight of the vehicle at the final disposal site with waste loaded). Enter the weight of the vehicle after waste has been unloaded. The difference between the gross vehicle weight and the vehicle weight is the waste net weight. This value will be entered in the space designated for waste net weight.

(5) Course, time, and workers in vehicle

Enter the respective arrival and departure times for the basic daily collection course (i.e., departure from office, start of work, completion of work, arrival at final disposal site, departure from final disposal site, and arrival at office). If this basic course is repeated, enter the course and the number of times it is repeated in the blank columns.

Enter the number of workers that are in the vehicle. This is the total number of workers, including the driver and workers that load waste into the vehicle.

(6) Vehicle checks

i) Brakes

Check the condition of the brake pedal and brake response. Enter details if a defect(s) is found or maintenance was needed. Similarly, enter details for the following items if a defect(s) is found or maintenance was needed.

ii) Amount of brake oil

Check the amount of brake oil in the reserve tank.

iii) Parking brake

Check the condition of the lever for the parking brake.

iv) Tires

Check the air pressure, wear and tear, and signs of damage to tires.

v) Coolant

Check the amount of coolant in the reserve tank and that there is no leakage.

vi) Fan belt

Check the tension of the fan belt and for signs of damage.

vii) Amount of engine oil

Check that the amount of engine oil is within the appropriate range on the oil gauge.

viii) Headlights and turn signals

Turn on the headlights and turn signals to check that they are working correctly.

ix) Rearview mirror

Check how objects are reflected in the rearview mirror.

x) License plates

Check that the license plates on the front and/or back of the vehicle are not damaged or loose.

After completion of work

i) Wash truck bed and the entire vehicle at the washing station.

ii) After washing the vehicle, clean up any waste that has fallen out of the vehicle. Clean up the washing station.

iii) Enter the required information in the daily driving report and submit the report to the office. In particular, be sure to include any information on actual or perceived problems in the vehicle while operating the vehicle in the daily driving report, and report these problems to the supervisor in charge.

2-4 Safe driving

When operating a waste collection and transport vehicle, there are two main tasks: One which is related to driving and the other which is related to the employees when collecting waste. Drivers and truck employees should have a clear understanding of the details of the following items in order to ensure a safe work environment.

【Explanation】

(1) Ten principles of safe driving

The ten principles of safe driving are outlined below. Drivers should follow these principles regularly to ensure that they are driving safely.

i) Be sure to check the vehicle and related procedures before operating the vehicle.

ii) Fasten seatbelts.

iii) Observe speed limits.

iv) Watch the road.

v) Maintain an appropriate distance between vehicles.

vi) Do not pass other vehicles unless you are sure you can do so safely, and only when necessary.

- vii) Do not stop in crosswalks. Proceed slowly.
- viii) Be cautious. Don't make assumptions about the movement of other vehicles and pedestrians when driving.
- ix) Yield the right of way.
- x) Drive slowly in and near offices and factory areas.

(2) Enforcement of vehicle checks before driving

It is necessary to check the vehicle before operating to ensure a safe driving and work environment. A complete check of the vehicle should be done prior to departure to prevent the vehicle from breaking down or an accident from occurring.

There must be cooperation between the workers collecting waste and the driver of the vehicle when collecting waste. This cooperation is further enhanced when the vehicle is checked by both parties prior to the start of work. The contents of the vehicle check are based on the aforementioned “(6) Vehicle checks” as outlined in section “2-3 Guidelines for filling out daily driving reports.”



The vehicle should also be checked to make sure that equipment, protective equipment, and first-aid medication required for work have been loaded onto the vehicle.

(3) Confirming safety when getting in and out of the vehicle

- i) Be careful of other vehicles, motorbikes, bicycles, and pedestrians around the vehicle when opening and closing doors.
- ii) Pay attention to your footing when getting out of the vehicle.
- iii) Hold the handrails and place your feet on the steps when getting into the vehicle.
- iv) Get out of the vehicle only after it has come to a complete stop.
- v) Be careful during rainy weather as it may be slippery.



(4) Avoiding accidents when driving

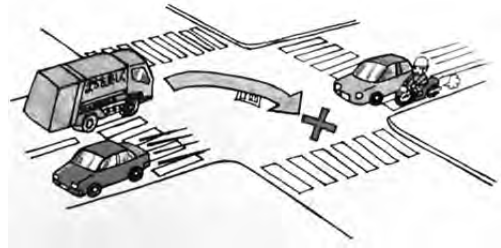
- (4)-1 Avoiding an accident when making a right turn

i) Wait for oncoming traffic to pass before making a right turn.

ii) Avoid making a right turn in the gaps between oncoming vehicles.

iii) Watch the movement of other vehicles behind oncoming traffic.

iv) Be sure to drive on the inside lane along the center of the intersection.



(4)-2 Avoiding an accident when making a left turn

i) Take into account blind spots and the difference between the track followed by the front and back inner wheels when turning.

ii) Decelerate sufficiently when negotiating a curve.

iii) Switch on turn indicators early.

iv) Be careful of pedestrians and bicycles (or two-wheeled vehicles) to avoid being involved in an accident.



(4)-3 Warnings about toddlers and children

i) Toddlers and children playing in front of or around vehicles may suddenly run out in front of a vehicle or be hit by the rear wheels of a vehicle. Be sure to drive slowly and be prepared to stop when necessary.



(4)-4 Warnings about the elderly and persons with physical disabilities

i) When an elderly person or someone with a physical disability is walking in front of or near the vehicle, keep enough space between the vehicle and the person, drive slowly, and be prepared to stop in case the person cannot move out of the way quickly.



(5) Preventing accidents when directing the vehicle

Directing the vehicle is essential to improve the efficiency of collection and work safely. Pay attention to the following points when directing the vehicle.

- i) Use clear signals and a loud voice when directing a vehicle in reverse.
- ii) The vehicle should be directed in a safe place with the driver using the side mirrors or visual confirmation.
- iii) Workers should watch their step as they may trip on scattered waste or stumble on steps.
- iv) Drivers should be careful not to start the vehicle or accelerate too quickly.
- v) Confirm the signs used to direct the vehicle before operating the vehicle.



(6) Safe driving in weighing stations

- i) Wait until the previous vehicle moves off the weighbridge.
- ii) When moving onto the weighbridge, drive slowly. Do not stop or accelerate suddenly.
- iii) Be sure to check that all tires are on the weighbridge.
- iv) Collect the weight memo that registers the weight of the vehicle from the weighbridge staff and record the gross vehicle weight in the daily driving report.

(7) Disposal of waste into the final disposal site

- i) Drive slowly on the access roads inside the final disposal site.
- ii) When arriving at the refuse dumping site to dispose of collected trash, workers should get off the vehicle and direct the vehicle to reverse.
- iii) Workers should pay attention to the safety of the area when dumping the cargo bed to dispose of waste.
- iv) Workers should confirm that all waste in the cargo bed has been dumped and the door shut.

(8) Health management

It is important for waste collection and transport workers to maintain their health to engage in work and ensure a safe driving and work environment. Be sure not to drink excessively or stay up late so that you are not fatigued the next day, and take care of your health.

(9) Organisation of regular safe driving meetings and guidance for safe driving

(9)-1 Prevent accidents by referencing traffic accident cases that have actually occurred.

When a traffic accident occurs, a vehicle accident report is made based on “2-6 Response guidelines for vehicle accidents.” A safe driving administrator will organise regular safe driving meetings for drivers and workers, and will explain about the situations, causes, and responses of actual accidents by referencing diagrams of collisions to prevent a recurrence of such accidents.

(9)-2 Prevent accidents by referencing the above details of accidents that may occur when directing a vehicle, safe driving at weighing stations, safe driving inside final disposal sites, and health management.

(9)-3 Prevent accidents by sharing examples of when drivers and workers perceive a hazard or risk while working.

When drivers and workers perceive a hazard or risk while working, that information is input in the designated column in the daily driving report after work is completed. Drivers and workers will then report the details of the hazard or risk to the vehicle management supervisor. The vehicle management supervisor will compile the information and present it as an example during safe driving meetings to prevent a recurrence of such accidents.

2-5 Safe operation

Workers who collect waste perform manual labor when loading heavy waste into a truck. This means that there is danger of injury or illness. To prevent injuries and illness during daily work routine, workers should have a clear understanding of the following items:

【Explanation】

(1) Check work clothes

Work clothes allow for easy movement to carry out work-related duties and protect against dirt and injury. Correct wear is also an indication of a worker’s motivation.

Protective clothing that is disheveled, presents a careless worker who may get injured when the clothing is caught in the machinery. Make sure that protective clothing is worn correctly.



- i) Appropriate protective clothing, safety boots, and hats should be worn correctly.
- ii) Buttons and zippers should be fastened tightly.
- iii) Safety boots should be worn at all times. Boot ties should be tied correctly.
- iv) Work gloves should be worn at all times.
- v) Do not wrap a towel around your neck or lower back.
- vi) Tie chin straps when wearing a helmet.

(2) Meetings on work details

Waste collection is carried out by both drivers and loaders. Therefore, it is necessary to adequately discuss work details prior to the start of work to ensure a completely safe work environment.

- i) Remember to greet one another in the morning to create a comfortable work environment.
- ii) Check working areas and collection routes.
- iii) Check important notices of traffic regulations, etc., by referring to work instructions and road construction information.
- iv) If you will be working together with a non-regular worker, be particularly careful to communicate work details.



(3) Warming-up exercises

As indicated in “Attachment 4: Examples of accidents while operating vehicles and number of accidents by time period,” in Japan, accidents occur mostly in the summer months between June and August, and causes mainly include: (1) scattered and fallen waste, (2) insect bites, (3) back pain from heavy lifting, and (4) slipping and stumbling. Accidents generally occur in the morning on Monday and Tuesday, so it is necessary to be careful.

To prevent these types of accidents, it is important to do warm-up exercises before starting work to loosen the muscles and improve reflexes.



(4) Waste collection

(4)-1 Collection of general waste

- i) Do not rush when loading waste into the truck. Bend the knees and lift the waste by holding the tie of the waste bag when loading waste bags into the truck.
- ii) Be careful when loading waste bags into the truck with the understanding that dangerous articles may be in the waste bag.
- iii) Clean any waste that has fallen or is scattered around the waste station using equipment provided.



(4)-2 Collection of heavy items

- i) Move the waste bag slightly to check the weight.
- ii) Check that the surface of the waste bag is not slippery.
- iii) Bend your knees low enough so that you can pick up the waste bag.
- iv) Do not arch your back when picking up waste bags.
- v) Do not lean your body too far forward.
- vi) Do not take an excessively erect posture.
- vii) Do not pick up trash with the knees and back straightened.
- viii) Do not twist your body suddenly.

(4)-3 Roadside collection

- i) Pay attention to passing vehicles when collecting waste.
- ii) Do not collect waste in front of the collection truck on the side of the road where cars are passing
- iii) Check your footing when collecting waste.

(4)-4 Handling dangerous waste

- i) If you find dangerous or inflammable articles, unknown articles with conspicuous odors, or medical waste in a waste bag, contact the office and do not load the waste bag into the truck.



- ii) Staff at the office that has been contacted should go to the site and check for hazardous waste. If the person that has disposed of the waste is known, give them a warning and request that the waste be taken back to the home, office, or factory. If the person is unknown, the waste should be brought back to the office and then disposed of properly.
- (4) Organisation of regular safe work meetings and guidance for safe work environments
Safe work meetings should be organised regularly as regards guidelines on actual injuries and illnesses, and information about hazardous waste to ensure an accident-free work environment when collecting waste.

2-6 Response to vehicle accidents

There are three types of accidents that can occur when collecting and transporting waste: accidents resulting in injury or death, property damage to vehicles, and worker accidents. Feelings can run high when an accident occurs and you may forget to take the proper measures. Therefore, both drivers and loaders should have a clear understanding of the details of the following items in order to ensure that proper measures are taken if an accident occurs.

【Explanation】

Drivers and loaders should take proper measures based on a clear understanding of the response guidelines if an accident occurs.

Drivers must also write up a report (Attachment 5: Traffic accident report). They must have a clear understanding of the situation at the scene of the accident in order to write up the accident report.

- (1) Response for accidents resulting in bodily injury or death
 - i) Injured persons must be helped first and foremost. However, sometimes an injured person should not be moved. Make sure not to move the injured person any more than necessary.
 - ii) An ambulance should be called depending on the degree of injury. Injured persons should visit the nearest hospital even for slight injuries.
 - iii) Confirm the name of the person who has been injured and his or her contact information.
 - iv) Contact the police department.
 - v) If the vehicle(s) that has been involved in an accident is blocking other traffic, the vehicle(s) should be moved from the site of the accident. If the vehicle(s) is moved, mark the location, etc. of the vehicle(s).
 - vi) Report the traffic accident to the office to receive instructions on how to proceed. The report to the office should include information pertaining to the time and place the accident occurred, the number

of people injured, the degree of the injury, and the progress of procedures being taken.

- (2) Response for accidents resulting in property damage
 - i) Provide the name, post and contact information of the NCC driver to the other party or parties if involved in an accident that caused property damage.
 - ii) Confirm the other party's or parties' name(s), address(es), and contact information.
 - iii) Contact the police department.
 - iv) If the vehicle(s) that has been involved in an accident is blocking other traffic, the vehicle(s) should be moved from the site of the accident. If the vehicle(s) is moved, mark the location, etc. of the vehicle(s).
 - v) Report the traffic accident to the office to receive instructions on how to proceed.
- (3) Response for accidents involving loaders
 - i) Help injured persons.
 - ii) Report the conditions of the injury or illness to the office to receive instructions on how to proceed.
 - iii) If a worker must be brought to the hospital, contact the office to receive instructions on how to proceed, and bring the loader to the hospital.

2-7 Response to vehicle breakdowns

In the event that a collection vehicle breaks down, move the vehicle to the side of the road so that it will not block other traffic. Contact the office and arrange for the vehicle to be brought to a repair shop.

【Explanation】

- (1) In the event that a collection vehicle breaks down, move the vehicle to the side of the road quickly so that it will not block other traffic.
- (2) If the vehicle must be left on the road, turn on hazard blinkers to indicate that the vehicle has broken down.
- (3) Contact the office to report the location of where the vehicle has broken down, what part of the vehicle is broken, and the progress of procedures being taken to receive further instructions.

2-8 Response to vehicle fires

If a fire occurs from the load in the collection vehicle, move the vehicle to a safe place immediately, try to extinguish the fire in its early stages, and contact the office.

【Explanation】

- (1) If a fire occurs in the collection vehicle, move the vehicle to a safe place, such as nearby wide roads, squares, or riverbeds.
- (2) Stop the engine immediately and try to extinguish the fire in its early stages using the fire extinguisher. Contact the fire department, if necessary.
- (3) Report the location of the fire, the circumstances surrounding, and the progress of procedures being taken to the office to receive further instructions.

3. Collection Work Plan

3-1 Development of collection work plans

When collecting household waste, determine the number of households that can be serviced by one collection vehicle by looking at collection times, the collection vehicle's load capacity, and the amount of waste emitted per household. Based on this, determine the number of collection vehicles necessary for each waste collection area.

【Explanation】

i) Collection times

Collection is carried out using the waste collection trucks.

The collection time spans from the arrival of the collection vehicle to the collection site, transferring and collecting the waste at the waste station, and reaching the maximum load capacity.

ii) Maximum load capacity of vehicle

In Japan, the Two-ton compactor trucks (packer vehicles) are used for the collection of waste. The load capacity of the vehicle is set at 90% in order to prevent going over the maximum load capacity. Therefore, the maximum load capacity of the vehicle is 1.8 tons.

iii) Amount of waste emitted per capita per day (0.56 kg)

Waste is generally collected two times per week. For the average household of five persons, the amount of waste emitted per household per collection time is calculated below.

$$\begin{aligned} \text{Amount of waste emitted per household per collection time} = \\ 560 \text{ g} \times 5 \text{ people} \times 7 \text{ days} \div 2 = 7,000 \text{ g} = 9.8 \text{ kg} \end{aligned}$$

iv) Number of households that can be serviced by one collection vehicle per collection time

The number of households that can be serviced by one collection vehicle per collection time can

be calculated by dividing “ii) Maximum load capacity of vehicle” by “iii) Amount of waste emitted per household per collection time.”

In the case of Japan, the number of households that can be serviced by one collection vehicle per collection time =

$$1,800 \text{ kg} \div 7 \text{ kg} = 260 \text{ households/collection time}$$

v) Number of transport times per day

In Nairobi, waste collection trucks dispose the waste at the Dandora dump site. Usually, they make two trips to the final disposal site. In the case of Japan, K city incinerates all household waste at three incineration plants. The average amount of time required for a one-way trip from collection sites to the incineration plants is 20 minutes.

Since i) 30 minutes is needed for one collection vehicle to collect waste, ii) 40 minutes is needed for the two-way trip to the incineration plants, and five minutes is needed to unload the waste at incineration plants, the amount of time required for one cycle, i.e., to collect waste, transport the waste to incineration plants, and return to the next collection site, can be calculated as follows.

$$\text{Time for one cycle: } 30 \text{ minutes} + 40 \text{ minutes} + 5 \text{ minutes} = 75 \text{ minutes}$$

Next, we can find the actual operation time of the collection vehicle.

Working hours per day are calculated from 8:30 to 17:15, which is a total of 525 minutes. Of this total, 120 minutes are used for break times, vehicle checks, refueling, and car washing, and 20 minutes are used to travel from the office to collection sites. Subtracting this time from the 525 minutes gives the actual operation time of the vehicle.

$$\text{Actual operation time of the vehicle: } 525 \text{ min} - 120 \text{ min} - 20 \text{ min} = 385 \text{ min}$$

Therefore, the number of transport times per day can be calculated as follows:

$$\text{Number of transport times per day} =$$

$$\text{Actual operation time} \div 1 \text{ cycle hour} = 385 \div 75 = 5 \text{ times/day}$$

vi) Number of households serviced per vehicle per day

The number of households serviced per vehicle per day can be calculated by multiplying “iv) Number of households that can be serviced by one collection vehicle per collection time” by “v) Number of transport times per day.”

$$\text{Number of households serviced per vehicle per day} =$$

$$260 \text{ households} \times 5 \text{ times} = 1,300 \text{ households}$$

Based on the above results, the number of collection vehicles required to collect waste twice a week from 400,000 households in K city can be calculated as follows.

$$\begin{aligned} & \text{Number of collection vehicles required for K city} = \\ & \text{Number of households} \div \text{Number of households serviced by one vehicle per day} = \\ & 400,000 \div 2 \div 1,300 = 150 \text{ vehicles} \end{aligned}$$

Note:

This document was developed with the permission of both K city and N company in Japan for use as waste collection and transport guidelines for the JICA Technical Cooperation Project on “Capacity Development of Solid Waste Management of Nairobi City.” The document was developed using waste collection and transport reference materials from K city and N company.

Attachment 1

vehicle management registry (sample)

Year _____ Month _____

	NCC No	Vehicle number	Vehicle manufacturer	Vehicle type	Loading capacity (ton)	Accident compensation insurance	Valid period of inspection			Purchase date			Number of years in operation
							Y	M	D	Y	M	D	
1	No1						Y	M	D	Y	M	D	Y
2	No2						Y	M	D	Y	M	D	Y
3	No3						Y	M	D	Y	M	D	Y
4	No4						Y	M	D	Y	M	D	Y
5	No5						Y	M	D	Y	M	D	Y
6	No6						Y	M	D	Y	M	D	Y
7	No7						Y	M	D	Y	M	D	Y
8	No8						Y	M	D	Y	M	D	Y
9	No9						Y	M	D	Y	M	D	Y
10	No10						Y	M	D	Y	M	D	Y
11	No11						Y	M	D	Y	M	D	Y
12	No12						Y	M	D	Y	M	D	Y
13	No13						Y	M	D	Y	M	D	Y
14	No14						Y	M	D	Y	M	D	Y
15	No15						Y	M	D	Y	M	D	Y
16	No16						Y	M	D	Y	M	D	Y
17	No17						Y	M	D	Y	M	D	Y
18	No18						Y	M	D	Y	M	D	Y
19	No19						Y	M	D	Y	M	D	Y
20	No20						Y	M	D	Y	M	D	Y
21	No21						Y	M	D	Y	M	D	Y
22	No22						Y	M	D	Y	M	D	Y
23	No23						Y	M	D	Y	M	D	Y
24	No24						Y	M	D	Y	M	D	Y
25	No25						Y	M	D	Y	M	D	Y
26	No26						Y	M	D	Y	M	D	Y
27	No27						Y	M	D	Y	M	D	Y
28	No28						Y	M	D	Y	M	D	Y
29	No29						Y	M	D	Y	M	D	Y
30	No30						Y	M	D	Y	M	D	Y

Attachment 2

vehicle maintenance records (sample)

NCC No				Vehicle manufacturer			
Vehicle number				Vehicle type			
Purchase date		Y	M	Loading capacity (ton)			
	Maintenance date	Details of maintenance work			Maintenance costs	Name of NCC staff and/or company in charge of maintenance	Mileage
1							
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

Attachment 3

Daily driving reports (sample)

Y M D		Name of Driver				Staff in Charge of vehicle management	
NCC No		Diesel oil	ℓ	Odometer readings	km	Gross vehicle weight	ton
vehicle number		Gasoline	ℓ	Odometer readings	km	Vehicle weight	ton
		Oil lubricant	ℓ	Mileage	km	Trash net weight	ton
Course	Time	workers in vehicle	Vehicle checks				
Departure from office	:	people	Check condition	Judgment	Defect(s) and maintenance		
Start of work	:		Brakes pedal and brake response	Good • Bad			
Completion of work	:		Amount of brake oil	Good • Bad			
Arrival at landfill	:		Parking brake	Good • Bad			
Departure from Landfill	:		Tires (air pressure, wear and tear, and signs of damage to tires)	Good • Bad			
Arrival at office	:		Amount of coolant in the reserve tank and that there is no leakage.	Good • Bad			
	:		Tension of the fan belt and for signs of damage	Good • Bad			
	:		Amount of engine oil	Good • Bad			
	:		Headlights and turn signals	Good • Bad			
Actual or perceived problems experienced when using the vehicle			Rearview mirror	Good • Bad			
			License plates (damage or loss)	Good • Bad			

Daily driving reports

Y M D		Name of Driver				Staff in Charge of vehicle management	
NCC No		Diesel oil	ℓ	Odometer readings	km	Gross vehicle weight	ton
vehicle number		Gasoline	ℓ	Odometer readings	km	Vehicle weight	ton
		Oil lubricant	ℓ	Mileage	km	Trash net weight	ton
Course	Time	workers in vehicle	Vehicle checks				
Departure from office	:	people	Check condition	Judgment	Defect(s) and maintenance		
Start of work	:		Brakes pedal and brake response	Good • Bad			
Completion of work	:		Amount of brake oil	Good • Bad			
Arrival at landfill	:		Parking brake	Good • Bad			
Departure from Landfill	:		Tires (air pressure, wear and tear, and signs of damage to tires)	Good • Bad			
Arrival at office	:		Amount of coolant in the reserve tank and that there is no leakage.	Good • Bad			
	:		Tension of the fan belt and for signs of damage	Good • Bad			
	:		Amount of engine oil	Good • Bad			
	:		Headlights and turn signals	Good • Bad			
Actual or perceived problems experienced when using the vehicle			Rearview mirror	Good • Bad			
			License plates (damage or loss)	Good • Bad			

Attachment 4
Examples of accidents while operating vehicles (F.Y.2000~F.Y.2004)

Cause of accidents	Number of accidents												Total
	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	
Scattered and fallen trash	5	2	9	9	3	11	5	3	1	2	4	4	58
Insect bites	0	2	15	6	8	17	4	1	0	1	0	0	54
Back pain from heavy lifting	9	6	6	5	4	0	9	3	5	2	2	2	53
Slipping and stumbling	7	4	4	2	3	6	4	3	5	6	5	4	53
Injury of getting on and off	3	0	4	2	6	2	1	3	0	2	3	2	28
Injury by sharp trash	2	3	2	4	2	2	1	0	4	2	1	3	26
Suffer damage by third person	0	6	0	0	3	3	0	0	1	2	1	1	17
Injury by being caught	0	3	1	0	1	0	0	0	1	0	2	1	9
Injury by jumping down	0	1	1	0	0	0	0	0	1	0	0	0	3
Others	5	4	16	9	24	6	7	3	3	2	3	2	84
Total	31	31	58	37	54	47	31	16	21	19	21	19	385

※ Accidents occur mostly in the summer months between June and August, so it is necessary to be careful.

Number of accidents by time period (F.Y.2000~F.Y.2004)

Time zone	Monday	Tuesday	Wednesday	Thursday	Friday	Total
09:00~10:00	37	22	24	25	16	124
10:00~11:00	17	24	16	14	12	83
11:00~12:00	10	7	5	7	4	33
13:00~14:00	6	6	3	5	8	28
14:00~15:00	20	16	9	12	2	59
15:00~16:00	2	3	0	2	1	8
16:00~17:00	0	0	1	0	1	2
Total	92	78	58	65	44	337

※ Accidents generally occur in the morning on Monday and Tuesday, so it is necessary to be careful.











Attachment 5

Traffic accident report (Sample)

Date of traffic accident		2014 Oct. 10		14 : 30	
Name of driver	Kitakyushu A	Place of accident	ABC Road		
Vehicle number	ABC 1234	Purpose of driving	on the way to Dandoa		
Name of the other driver	Kitakyushu B	Vehicle of the other car	ABC 5678		
Weather	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain	Content of accident	<input checked="" type="checkbox"/> Injury <input checked="" type="checkbox"/> Vehicle		
Road condition	<input checked="" type="checkbox"/> Good <input type="checkbox"/> Bad	Width of road	On side 10 m		
Traffic light	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Sign of stop	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		
State of accident					
After collection of waste, the vehicle were carrying waste to Landfill. When the vehicle turned left,					
the vehicle hit the motorcycle, the motorcycle fell down and the motorcycle driver was injured.					
The collection truck driver called to emergency hospital and to police station. After dealing accident,					
municipal officer went to the hospital and confirm the injured.					
Figure of accident					
Collection truck	Direction	One-sided	Motorcycle		
The other car A	Traffic light	People			
The other car B	Stop sign	Bicycle			
Verification (Safe driving administrator fill out))					
The accident cause was that driver didn't drive by much attention to left side view.					
The prevention of these kind of accidents are as follows.					
(1) Reduce speed before intersection.					
(2) Switch on turn indicators early.					

Attachment 5

Traffic accident report

Date of traffic accident		Y	M	D	Time	:
Name of driver		Place of accident				
Vehicle number		Purpose of driving				
Name of the other driver		Vehicle of the other car				
Weather	<input type="checkbox"/> Clear <input type="checkbox"/> Cloudy <input type="checkbox"/> Rain	Content of accident		<input type="checkbox"/> Injury <input type="checkbox"/> Vehicle		
Road condition	<input type="checkbox"/> Good <input type="checkbox"/> Bad	Width of road		m		
Traffic light	<input type="checkbox"/> Yes <input type="checkbox"/> No	Sign of stop		<input type="checkbox"/> Yes <input type="checkbox"/> No		
State of accident						
Figure of accident						
Collection truck 	Direction 	One-sided 	Motorcycle 			
The other car A 	Traffic light 	People 				
The other car B 	Stop sign 	Bicycle 				
Verification (Safe driving administrator fill out))						

*ANNEX 4.2 Guideline for Franchise System Waste Management in
Nairobi City County*

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Guideline for Franchise System Waste Management in Nairobi City County

March 2016

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- 1. Pre-Qualification Document in Zone 7**
- 2. Tender Document in Zone 7**

1. Introduction

1.1. Purpose of this guidebook

As part of the JICA Project for Capacity Development of Solid Waste Management of Nairobi City begun in February of 2012, NCC selected Zone 7 Kilimani, Kileleshwa, Kangemi) as areas for the Franchise Introduction Pilot Project (PP) on November 1st, 2014. This guidebook therefore aims to apply the lessons learned by NCC from the PP for effective implementation and future expansion of the franchise system in the whole city.

1.2. Scope of this guidebook

This guidebook is based on the preliminary experience drawn by the implementation of PP in 2015. However, NCC is in the phase of monitoring the achievements of the franchise waste management of the PP and at the same time learning lessons and gaining feedback from the citizens and franchisee based on their first-hand experience. Therefore, the details of this guidebook must be altered accordingly.

2. Determining Population of the Franchise Zones

2.1. Estimation of Franchise Zone population

The Kenya National Bureau of Statistics (KNBS) publishes a population and housing census every ten years. The most recent survey was done in 2009, with the previous one done in 1999. To estimate the population of the franchise zones in Nairobi, the 1999 and 2009 populations were used to determine the population growth rate. Furthermore, there was a restructuring of the administrative areas (consolidation of areas, redrawing of borders, and creation of new wards), and it was necessary to confirm whether any areas in the zone concerned needed to be altered. The results of the 1999 and 2009 census for Zone 7, as well as the population growth rates for both years, are shown in Table 1.

Table 1 Population growth rate for each area of Zone 7 in 2013

	1999	2009	Population Growth Rate	2013 Population Estimate
Kilimani	41,597	43,122	0.4%	44,000
Kileleshwa	21,168	27,202	2.6%	31,000
Kangemi	59,288	80,699	3.1%	92,000
Total	122,053	151,023	-	167,000

2.2. Scale of Franchise Zone

A franchise system is one company or more than one company operate together in a Joint Venture (JV), take the responsibility of waste collection within their targeted zone. Through this system, it is necessary to be able to collect waste from customers efficiently, to operate at a suitable standard, and make a reasonable profit. According to the master plan, the city of Nairobi was divided into 9 zones with a population of 150,000-200,000 each, that take into account a balance of each income level. Zone 7 is one of them in the city. During the

implementation of the pilot project in Zone 7, there were comments that the proposed zones are too large for one franchisee. The importance of considering appropriate scale and checking the progress in other zones became apparent in the future zoning.

2.3. A balance between low, middle, and high-income areas in the Franchise Zone

According to the franchise system, a part of the fee paid by the customers in high and middle-income areas for their waste collection is allocated to the waste collection fees of the lower-income areas as a subsidised collection system. Further, a payment is taken from franchisees' incomes to NCC for road cleaning. If the population of low income areas is higher than those of the high- or middle-income areas, the responsibility of each person living in those areas is higher, because the opposite could also be the case. Therefore, both income groups in the zone should be same as possible is desirable.

3. Waste Collection Types in the Franchise Zones (Household waste, enterprise waste)

In Nairobi City, the current waste collection system includes the waste collection by the Private Service Providers (PSPs) which enterprises that some are authorised by the NCC and others without authorisation (unauthorised) of NCC to collect waste from the high and middle-income areas. On the other hand, NCC or NCC-contracted PSP collect waste in low-income areas and the illegal dumping sites in the city. The state of this waste collection types is depicted in Table 2.

Table 2 Waste collection in Nairobi

Waste type		Waste collection service provider
General household waste	High and middle income areas	PSP
	Low income areas	NCC or NCC-contracted PSP
Commercial waste	Private	PSP, NCC, or NCC-contracted PSP
	Public	PSP, NCC, or NCC-contracted PSP
Nairobi city market		PSP, NCC, or NCC-contracted PSP
Illegally dumped waste		PSP, NCC, or NCC-contracted PSP

4. Estimation of Waste Volume in the Franchise Zones

For waste volume of the franchise zones, Table 3 shows an estimate by JICA in 2009 divided into categories of income classes and type of generators, including information on population taken from the Nairobi Information and Communication Technology Office.

4.1. Waste volume from each household

- Current population of each area is estimated from population census derived from the growth rate.
- The total amount of the waste generation from each income category is

calculated according to the estimated population multiple with unite generation.

4.2. Commercial waste volume

- Commercial waste is determined according to the Communication Technology Office for registration of employment type
- The total waste generation of each commercial category is estimated by multiplying the number of units with the volume of unit generation.

4.3. Waste generation volume from Nairobi city market

Data obtained from the NCC environment department was used to determine waste volume from the city market.

Table 3 Total Waste Generation in Nairobi City

	Population	Unit generation kg/day	Total ton/day
1.Residential waste			
a.High income	397,362	0.621	247
b.Middle income	1,066,393	0.474	505
c.Low income	1,576,245	0.360	567
Sub total	3,040,000		1,320
2.Commercial waste			
a.Shops	47,941	0.5	24
b.Restaurants	1,582	38	60
c.Hotels & guest house			
Standard hotels	140	350	49
Lodging house	586	100	59
d.Public facilities/schools			
Public facilities	500	137	69
Schools	2,847	32	91
e.Industrial plants	501	150	75
f.Other establishment	27,077	0.5	14
Sub total			440
3.Market waste	44	2,045	90
4. Road waste	563	106	(60)
Total			1,850

Source : 2009 JICA Survey

5. Investigation of Existing PSPs in the Franchise Zones

To understand the state of waste collection and transport in franchise zone, PSPs were asked the following questions. The investigation results are required for performing franchise system. However, as the information can be useful in understanding an overview of waste collection in Nairobi. Further, the application forms at the time of waste collection and transportation license application by PSP which has been carried out every year. Thus, the following data should be collected.

- Company name:
Company name () Representative () Phone number ()
Contact person name () Phone number ()
- Type of trucks owned and number of respective truck types by carrying capacity
Type of truck (Tipper type, Flat type) Carrying capacity (tons/units)
- Waste collection area name

- Collection are name (i) ii) iii) iv) v)
- Number of customers by collection areas
Area name () Number of customers ()
- Amount of waste collection (ton/day • ton/month)
- Destination of collected waste
- Fee for waste collection
Houses, Apartments (KSh/family • month~ KSh/family • month)
Business establishment (hotels, restaurants, shops, etc.)
(KSh/family • month~ KSh/family • month)
- Waste collection frequency (Daily, twice per week, 3 times per week)
Commercial waste from hotels, restaurants, small shops (Daily, twice per week, 3 times per week)

6. Survey of Existing CBOs in the Franchise Zones

- CBO name, Name of director, telephone number, and number of workers engaged in waste collection
- Number of clients in waste collection zone
Area name () Number of clients ()
- Waste collection frequency
Household (Daily, Weekly, Twice per week, 3 times per week)
Businesses
Volume of collected waste (Tons/day Tons/month)
- Waste collection volume (Tons/day, Tons/month)
Houses, Apartments (KSh/household per month)
Businesses (KSh/place per month)
- Waste collection point
Waste collection point name
- Frequency and amount of waste collected by NCC
Frequency of NCC waste collection (Daily, Weekly, Twice per week, 3 times per week)
Volume of collected waste (Tons/month)
- Payment to NCC by unit price and total price
By unit (KSh/ton)
Total expenditure (KSh/month)

7. Key Points to Note in the Franchise Planning Stage

7.1. Expiry of waste collection licences that issued by Environment Department

Once franchise operations have begun, other PSPs are prohibited from engaging in waste collection activities in zones in which a contractor has been appointed by the franchise system. The fact that the license of other PSP expires when a franchise license comes into effect must be communicated to all PSPs. Additionally, the compliance details of waste management licenses issued by the Environment Department and the National Environment Management Authority (NEMA) are outlined in Table 4 below. While there is some overlap between each of the authorities' criteria, it is not sufficient to hold a license from NEMA only. Efforts to consolidate the licenses are needed.

Table 4 Licensing conditions from the Environment Bureau and NEMA

	Criteria	Application criteria	Period of validity	Conditions of revocation	Instances of revocation	Number of successful applicants
Environment Bureau	Waste collection activity details	Compliance with bidding documents	One year after acceptance	Insufficient application preparation	None	16 (Sep 2015) None issued to WEMAK members
NEMA	Waste collection vehicles	Photos, vehicle inspection, report, insurance	One year after application acceptance	None	None	128 (As of 2014)

7.2. Contract period of existing PSP and customers

As contract period for existing PSP and customers is typically from 6 months to one year at most, there are cases in which there is some time remaining for the PSP when franchisees begin the new waste management contract. It is best if a contract can be made by terminating current contracts. If this is not possible, a contract is made after the current contracts finish.

7.3. Franchise system contract period

According to the franchise system introduction in the PP, the validation of the waste management contract period was to be completed after three years. When accounting for depreciation of trucks and supplies, franchisees found that three years is too short a period to pay back the investment. However, procurement regulations in Nairobi sets a contract period at a maximum of three years, and it is therefore difficult to make an exception for the franchise system. In this regard, it is mentioned in the contract that the franchisee with no issues of non-performance or other problems in the three-year contract period get first priority to get a continuous contract, and should be listed.

7.4. Preferential treatment for contractors bidding again at the end of the contract period

As the end of the franchise contract period draws near, NCC implements new bidding. Contractors operating waste management in their respective zones have experience and, except in cases where the quality of their work has been unsatisfactory, NCC will give favourable treatment to them (for re-contracting).

8. Franchise System Briefings

8.1. Franchise system briefings for all PSP

A number of information sessions on the franchise system were held for all PSP in

Zone 7. If a new franchisee will be introduced, then it is necessary to gather all PSP and explain the details of the specification documents through newspapers, television, and radio broadcasts.

8.2. Franchise system briefings for households

In the zone 7, information flyers were distributed to households and apartments, and the sessions were held in neighbouring schools, but these efforts failed to draw much attention of the participants. One reason for this is thought to be that people whose waste disposal fees were included in the common area fee for the households had little concern for the franchise system because they were not paying for waste disposal directly. However, NCC established an information desk at a shopping mall as a more effective means of reaching people directly.

8.3. Briefings for businesses

Information sessions for businesses such as hotels and restaurants were organised in an effort to gain cooperation, and were run as a large general meeting for the sake of efficiency. Large-scale institutions with high waste volumes could take their queries directly to NCC and the franchisees. This proved very effective.

8.4. Briefings on the franchise system at churches and mosques.

It is effective to hold briefings in person with an information desk near the entrance when worshippers come to attend a service. In case that NCC staff members are too busy to visit the place of worship, it is possible to play a pre-prepared introductory video about the franchise to provide explanation in advance.

8.5. Exhibition to upper grade students in elementary schools.

Briefings can be held in environment classes to help students understand the disposal process, 3R, and franchise system. The students can then tell their parents about it, and in that way indirectly reaching the parents as well.

8.6. Briefings in low income areas

Mostly CBOs collect waste from each family in low income areas for a fee, and carry it to the collection point. However, not all families are members of the CBOs. Some people who do not offer fees to CBO dump their wastes illegally. It is required that NCC make citizens understand the importance of cooperating with respective CBO, and that cooperating with CBO will improve the environment in the area.

8.7. Briefing about waste separation

As in 9-2 and 9-6 below, waste separation is to be performed with 3 kinds of bags provided to citizens in the new waste management system in Nairobi. As waste separation has never been done in Nairobi before, NCC should explain to the citizens why it is needed. Explanation about waste separation will be performed in every briefing mentioned above.

9. Preparation Process for Successful Franchise Bidding

9.1. Managing the way of waste collection in low income areas

NCC carried out an investigation according to P4 "Part 6 Investigation of CBO in franchise zone" before ordering the franchise system. The successful bidder confirms the contents with NCC. The bidders are required to prepare vehicles to

carry all waste from collection points to the Dandora landfill daily. The fee from CBO is the same as the one CBO currently pays to NCC, and the bidders pay the deficit. [subsidise from high and middle income areas]

9.2. Outline of waste collection in high and middle income areas

- As a general rule, waste collection is done twice per week at most. Waste bags in three colours are distributed (see details in Section 9-6) and explained in order to promote waste separation, and the fee for waste collection is settled with the client.
- In cases in which customers have remaining time in their contracts with current PSP, customers are requested to cease contract with the them. If this is not possible, the new franchise contract will be made at the end of the PSP contract period will be over.

9.3. Drawing of the route map

Contractors should make plans to collect waste twice per week (e.g. Monday and Thursday, Tuesday and Friday, Wednesday and Saturday), base the route maps on those plans, and obtain approval with NCC. Street cleaning plans also should be made, mapped, and approved by NCC in the same way.

9.4. Waste collection truck procurement

Upon approval from NCC, a required number of waste collection trucks can be procured based upon the number of vehicles specified for the route map. Arrangements will then be made to deliver the trucks before the beginning of the franchise. The specifications of the trucks may be inspected by NCC.

9.5. Employment of waste collection workers

The number of workers should be determined based on the waste collection plan, hired, trained and allocated in time for the start of waste collection activities.

9.6. Preparation of bin liners (3 types)

Bin liners should be prepared in 3 types and colour-coded as follows: blue for plastic recyclables, green for organic waste, and brown for other types of waste. They should be 70 cm × 100 cm in size and 80µ in thickness, and delivered to customers in time for the beginning of the franchise contract period.

9.7. Setting the waste collection fee for high- and middle-income areas

In the franchise system, contractors pay a franchise fee of 15% to NCC for general waste collection expenses, which includes transport of waste from low-income areas to the Dandora landfill, and for street cleaning. To obtain the revenues for this, a waste collection fee is charged to customers in the high- and middle-income areas. It is advisable to take into consideration the total waste volume when setting the waste collection fee. Waste collected from apartments is high in volume and can be collected efficiently, lowering the fee for waste collected from single houses. However, current waste collection fees for individual houses may be higher or lower in the high-income areas, as it seems easier to make citizens understand so the collection fee should be set flexibly to perform internal support in the zone.

9.8. Deferment of franchise fee payments

Contractors in the franchise system are required to pay a fee of 15% to NCC each quarter. However, payment is exempt for the first 3 months for preparation

period.

9.9. Issues with customers and waste collection contracts

When contractors began waste collection in Zone 7, the following comments were collected from customers. These opinions and the responses to them are listed below and should be considered in future planning.

- (Comment) There are times when gatekeepers are absent and it is impossible to hand over an explanation document.
(Response) Take managers' contact information for contact. Alternatively, the property owner can be contacted as well.
- (Comment) the Presidential residence, embassy, hotels, and hospitals have high security and cannot be accessed.
(Response) Submit a list of high-security complexes to the NCC and visit these areas with an NCC official.
- (Comment) There are times when citizens display hostility during visits, and waste collection cannot be performed.
(Response) Waste collectors are asked to carry an identification card or an official letter from the NCC to be presented to the customer. If this is still insufficient, visit the customer again with an NCC official.
- (Comment) New waste collectors are unnecessary as the current ones are satisfactory.
(Comment) The waste handling fee is higher than previously, and this not approved.
(Response) Make a detailed explanation of the franchise system using an informational pamphlet. If this is still insufficient, visit the customer again with an NCC official.
- (Comment) I am handling waste privately in my own home, so therefore I do not need waste collection service.
(Response) Make a detailed explanation of the franchise system using an informational pamphlet. If this is still insufficient, visit the customer again with an NCC official.
- (Comment) Inspectors are harassed by current PSP.
(Response) Report the names of harassers to NCC to be dealt with.

9.10. Coping with citizen enquiries

Franchise contractors are required to establish an office with a landline telephone number for fielding enquiries. NCC will establish a similar franchise system management office for dealing with enquiries from citizens.

9.11. Eliminating opposition to contractors in the franchise areas

After the establishment of the franchise system, contractors are able to perform waste collection. As such, it is necessary to urge any PSP still working within their contract periods to vacate the franchise areas. In the event that any PSP are found operating without a contract, the NCC enforcement team will be contacted, and dealing with the situation will be a priority.

10. License Inspection before Bidding (PQ test)

10.1. Objective of PQ examination

After taking a PQ examination, any PSP that passes inspection can bid, but not all PSP can proceed to the bidding stage immediately.

10.2. Screening items

Items to be confirmed as follows: business licenses for the current fiscal year, company registration, license of waste collection and transportation, payment certificate of collecting vehicle registration, resumes of related engineers, accounting inspection record of last 2 years and statement of bank account for the current business year, registration of NEMA. After that, those who pass the 8 items of the screening below can participate in the next bidding stage.

- Practical experience in waste collection
- Number of contracted customers
- Resources (Number of managers, number of clerks and engineers, number of workers)
- Number of waste collection trucks.
- Waste transport capacity
- Daily waste collection volume
- Monthly transport performance to Dandora disposal site for the previous 2 years
- Tax certificates from the previous 2 years
- Financial situation (Annual sales)

For PQ specification in Zone 7, refer to Annex 1 Pre-Qualification Document in Zone 7.

11. Specification for Bidding

Create the bidding specification in Zone 7 by referring to Annex 2 Tender Document in Zone 7.

12. Gantt Chart of Franchise Bidding

- The schedule is as follows.
- Preparation of PQ planning sheet
- Notification of PQ
- Submission of PQ bidding planning sheet
- PQ examination
- Result of PQ examination
- Preparation of bid planning sheet
- Notification of bid
- Submission of bid planning sheet
- Examination of bid documents
- Result of bid examination
- Discussion with successful bidder
- Contract
- Preparation of franchise system
- Starting the franchise system

Keep the following points in mind

- It takes at least 4 weeks to complete the many tasks included in Items 7 to 8 above.
- Items 9 and 11 can also take time, so NCC must finish the tasks by the due date.

Preparation of franchise system is estimated for 2 months. However, it should be changed from 2 months to 3 months due to the many tasks involved. Figure-1 is shown as an example of standard schedule for franchise system installation

considering the points mentioned above.

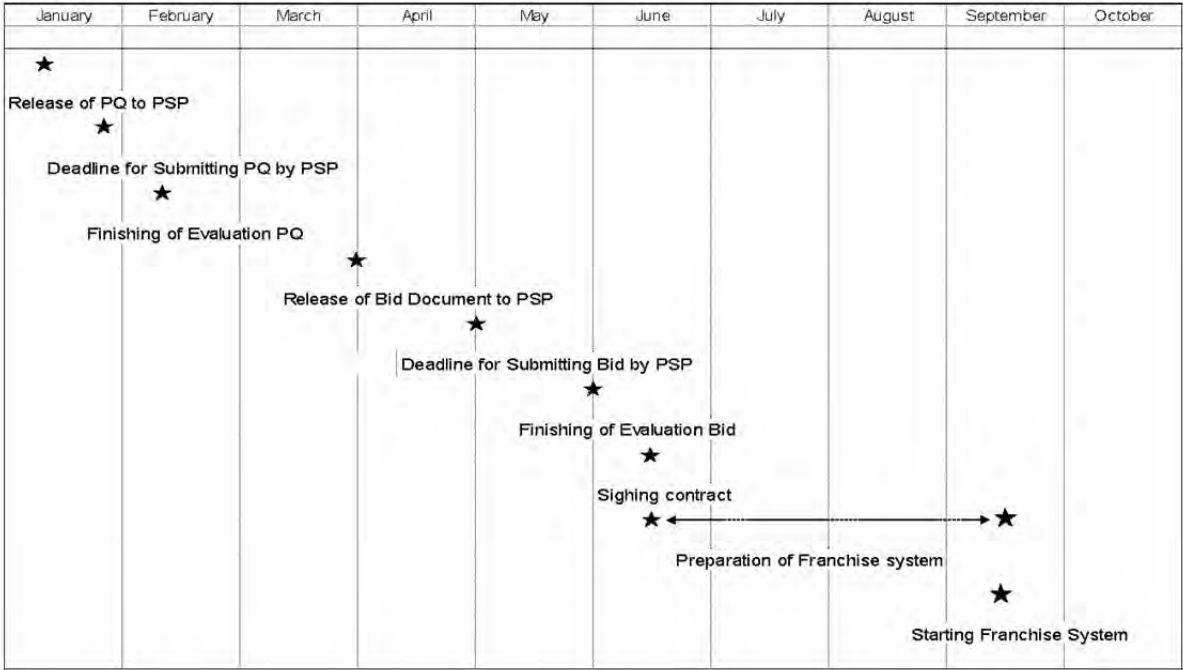


Figure 1: Franchise system preparation Gantt chart (example)

Attachment 1
Pre-Qualification Document in Zone 7

NAIROBI CITY COUNTY



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Kenya

CONTRACT NO. NCC/T/DOE/2013-2014

**PRE-QUALIFICATION FOR STREET SWEEPING, SOLID
WASTE COLLECTION, TRANSPORTATION AND DISPOSAL
SERVICES -
KILIMANI, KILELESHA AND KANGEMI
(FRANCHISE ZONE NO.7)**

RECEIPT NO......

M/S.....

SERIAL NO.

COUNTY SECRETARY P.O. BOX 30075 NAIROBI	DIRECTOR OF PROCUREMENT CITY HALL ANNEX 1ST FLOOR
--	---

NAIROBI CITY COUNTY

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TENDER NOTICE

PREQUALIFICATION FOR STREET SWEEPING, SOLID WASTE COLLECTION, TRANSPORTATION AND DISPOSAL SERVICES – KILIMANI, KILELESHA AND KANGEMI (FRANCHISE ZONE NO. 7)- CONTRACT NO. NCC/T/DOE/2013-2014

The **NAIROBI CITY COUNTY** invites applications from interested eligible bidders for the works of street sweeping, solid waste collection, transportation and disposal services in Kilimani, Kileleshwa and Kangemi (Franchise Zone No. 7) for the period **2014 to 2015**.

Prequalification documents, containing forms to be submitted, may be obtained from the office of the **Director of Procurement, City Hall Annex, 1st Floor. Room 105**, during normal working hours, upon payment of a non – refundable fee of **Kenya shillings one thousand (KSh.1, 000/=) only and payable per prequalification document**.

Completed prequalification documents in plain sealed envelopes clearly marked:

“PREQUALIFICATION OF STREET SWEEPING, SOLID WASTE COLLECTION, TRANSPORTATION AND DISPOSAL SERVICES - KILIMANI, KILELESHA AND KANGEMI (FRANCHISE ZONE NO. 7)”

FOR PREQUALIFICATION NO:

and addressed to:

**COUNTY SECRETARY
NAIROBI CITY COUNTY
P.O BOX 30075-00100
NAIROBI.**

Should be deposited in the TENDER BOX situated at the Director of Procurement City Hall Annex, 1st floor room 105, so as to be received, not later than **12.00 noon on Thursday 23rd January, 2014**.

**LILIAN W NDEGWA
COUNTY SECRETARY**

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Definition of Terms

- a) “Bidder” - Party that offers to contest for a tender
- b) CBO - Community Based Organization: Institution consisting of members from the local community who engage in solid waste management activities
- c) “Collection Capacity” - Demonstrated ability to collect waste from prospective clients
- d) Compliance - Adherence to set rules and guidelines
- e) “Financial Proposal” - Written offer expressing capacity to manage funds appropriately
- f) “Financial status” - Statement depicting how funds have been managed.
- g) “Franchise System” - A model whereby a successful tenderer is awarded a definite and exclusive contract to provide a defined service in a specific area.
- h) “Franchisee” - The party that will be awarded the tender to serve zone 7.
- i) “Joint Venture” - A business agreement in which the parties pool resources and work together for a finite time.
- j) “Lead Partner” - Principal party in a joint venture
- k) NEMA - National Environment Management Authority
- l) “Partner” - One of the parties in a joint venture
- m) “Pre-qualification” - Initial evaluation of a party’s capacity to contest in the bid.
- n) “PSP” - Private Service Provider particularly for solid waste collection, transportation and disposal.
- o) Recyclables - Waste items that can be transformed into usable products
- p) Segregation at Source - Separation of waste into defined categories at the point of production

- q) “Solid Waste Collection” - Transfer of solid waste from designated /undesignated collection points to the assigned solid waste collection truck.
- r) “Solid Waste Disposal” - Finally getting rid of solid waste in the designated site.
- s) “Solid Waste” - Municipal solid waste including waste from households, businesses and institutions, construction and demolition waste in small quantities, general solid wastes from hospitals (excluding hazardous wastes), waste from smaller industries that is not classified as hazardous, and wastes from streets, public areas and open drains. It is not concerned with wastes from agriculture, larger industries or the mining industries which normally handle their own wastes.
- t) “Solid Waste Transportation” - Transfer of solid waste from the collection points to the final disposal site.
- u) “Technical Proposal” - Written offer expressing capacity in terms of special skills, knowledge and mechanics
- v) “Tenderer” - A party that offers a tender to serve the franchise zone 7.
- w) “Zone 7” - One of the 9 zones in Nairobi consisting of Kilimani, Kileleshwa and Kangemi; that has been selected to pilot the franchising system of waste collection and transportation.
- x) “Zoning” - Division of the County into particular sections based on socio-economic characteristics.

A. SUMMARY OF THE PILOT PROJECT

01. INTRODUCTION OF THE PILOT PROJECT

1.1 Background of the Pilot Project

The City of Nairobi is the capital of the Republic of Kenya. It is the largest administrative, commercial and industrial centre of the country and has been experiencing rapid urbanisation due, largely, to the migration from rural areas and the natural increase of population. The population of the city in 2009 was estimated at 3.14 million, and it is predicted to reach 5.94 million by the year 2030.

The establishment of a proper solid waste management system is therefore an urgent issue requiring prompt resolution. The final disposal site at Dandora, an open dumping type landfill with a capacity of 500,000 cubic metres (m³) has already received 1.8 million m³ and this has a detrimental effect on the surrounding environment. In addition, the solid waste management done by the city is insufficient and does not cover the collection of solid wastes generated at present, especially, in low income residential areas. The situation has been creating serious problems in hygiene, as well as environmental and aesthetic conditions to the people of Nairobi City.

Kenya Vision 2030 is the country's new development blueprint covering the period 2008 to 2030. It aims to transform Kenya into a newly industrialised "middle-income country providing a high quality life to all its citizens by the year 2030." The Vision was developed through an all-inclusive and participatory stakeholder consultative process, involving Kenyans from all parts of the country. It also benefited from suggestions by some of the leading local and international experts on how the newly industrialising countries around the world have made the leap from poverty to widely-shared prosperity and equity.

Kenya Vision 2030 is divided into three fundamental pillars: the Economic, Social and Political pillars. The social pillar aims at realising a just and cohesive society enjoying equitable social development in a clean and secure environment, and it envisions Kenya becoming a nation that has a clean, secure and sustainable environment by 2030. So as to realise this strategy, the document explains that one of the specific strategies is to improve pollution and waste management.

On the other hand, based on its guidelines for aid in Kenya which focus on "environmental conservation," the Government of Japan (hereinafter referred to as "GOJ") has been providing assistance for the improvement of urban sanitation and environment to ensure urban hygiene and protect water quality in the face of the pollution of lakes and rivers arising from the increased of urban effluent and industrial wastewater and the increased amount of waste due to urbanisation. The GOJ had conducted three technical assistance programmes; namely, *The Study on Solid Waste Management in Nairobi City in the Republic of Kenya* in 1998 to formulate a master plan; *The Preparatory Survey on Integrated Solid Waste Management in Nairobi City in the Republic of Kenya* in 2010 to update the master plan; and *The Preparatory Survey (F/S) on Nairobi Solid Waste Management Project in the Republic of Kenya* in 2011 to confirm the feasibility of the project consisting of the decommissioning of the Dandora dumpsite, construction of a new landfill site at Ruai and procurement of waste collection vehicles and thus facilitate its qualification for financing under a Japanese Yen loan.

The collection and transportation of municipal solid waste is presently implemented by the Nairobi City County (hereinafter referred to as "NCC") as the executing agency for SWM in Nairobi, subcontractors of NCC and private service providers (hereinafter referred to as "PSP"). The revised master plan formulated in 2010 proposes a greater and well-structured waste collection and transportation through the involvement of the private sector and community-based

organisations (CBOs) in slum areas, and greater financial autonomy and more transparency with the creation of the solid waste management (SWM) special account to improve NCC’s financial management of waste collection and transportation.

The Ministry of Local Government of the Government of Kenya (hereinafter referred to as “GOK”) had authorised this revised master plan as the Master Plan of SWM of Nairobi. To materialise the revised master plan, NCC had requested the GOJ to provide technical assistance to carry out the *Project for Capacity Development of Solid Waste Management of Nairobi City* as a Japanese loan project. In response to the request, the Japan International Cooperation Agency (hereinafter referred to as “JICA”), the official agency responsible for the implementation of technical cooperation programmes of the GOJ, dispatched a survey mission in August 2011 for the purpose of confirming the details of the Project, which were later agreed upon with the GOK. This Pilot Project for Introduction of Franchise System and Heightening of Public Awareness (hereinafter referred to as “PP”) will be carried out as one of activities to develop capacity of NCC personnel and finally to expand the waste collection and transportation services in Nairobi City.

1.2 Principles of the Pilot Project

The revised master plan envisages that the franchise system for street sweeping, waste collection and transportation in the city would be ideal in turning around the waste management system in the City. To avoid any long-term contract risks, it is introduced in a stepwise and gradual manner.. In addition, the area subject to the pilot project is selected based on a zoning concept as proposed in the revised master plan. For the franchise system to function well in the entire pilot zone, an internal cross-subsidy system is established where revenues from high-income areas will cross subsidize those from the low-income areas.

1.3 Objective of the Pilot Project

The objective of the Pilot Project (PP) is to collect data and information, thereby identifying challenges and developing necessary measures to address them. The newly introduced system of street sweeping, waste collection and transportation would then be introduced to the rest of the Nairobi City County.

1.4 Description of the Pilot Project Area

For the purpose of this pilot project, refer to Table 1.1 and Figure 1.1 whose digital details may be obtained from the office of the Director of Environment.

Table 1.1 Population and Waste Generation amounts Unit: ton/day

Area	Current Population	Household Waste amount	Commercial Waste	Market Waste	Total
Kilimani	44,000	27	34	0	61
Kileleshwa	31,000	17	8	0	25
Kangemi	92 ,000	30	-	10	40
Total	167,000	74	42	10	126

Note1: The current population is estimated based on the Kenya Census 2009.

The average population increasing ratio from 1999 to 2009 is Kilimani 2.6%, Kileleshwa 0.4%, and Kangemi 3.1%.

Note2: The waste amount is estimated based on JICA Survey in 2009 and NCC data in 2013. The bidding firms must compute the waste volume at the time of tender in reference to the provided estimates.

Note3: Household waste in Kangemi includes Commercial waste.

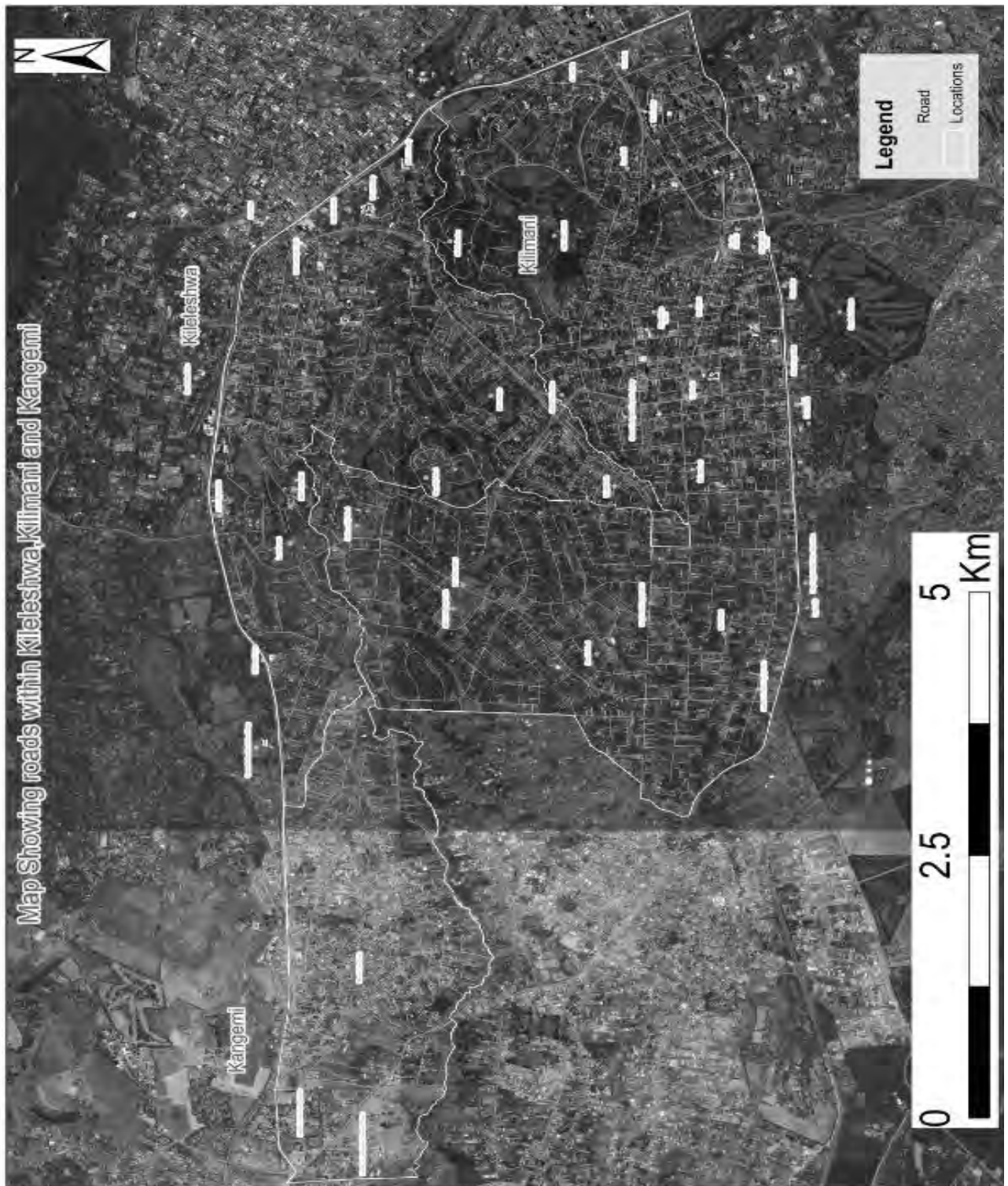


Figure 1.1 Geographical area of the Zone No. 7 (Note: Digital map to be provided to bidders)

The areas subject to the PP are shown in the area inside a yellow boundary of a map above.

02. FRANCHISE SYSTEM OPERATION

The franchise system is designed for provision of street sweeping, waste collection and transportation services where successful tenderer or “Franchisee” shall be a single PSP or a single joint venture (hereinafter referred to as “JV”) will have exclusive authority to provide those services in the described area and in turn collect fees from recipients of those services to sustain the same.

2.1 Selection Procedure of the Successful Tenderer or “Franchisee”

The franchisee shall be selected from the pre-qualified tenderers. The PSP or JV that is tendering shall submit documents described in the forms provided in the prequalification document. Criteria shall be based on the following:

- (1) Sweeping and Collection capacity;
- (2) Compliance Status; and
- (3) Financial Status.

2.2 Association or Joint Venture

Each PSP shall submit only one (1) bid, either as an independent tenderer or in partnership as a Joint-Venture. Any lead firm that submits or participates in more than one application shall be deemed ineligible and disqualified. However, a PSP, if participating in this bid as a sub-contractor or a partner in a joint venture and therefore not responsible for the entire performance under the contract, may participate in more than one proposal only in that capacity.

03. SCOPE OF WORKS

3.1 Responsibilities of the Franchisee in the Pilot area

The Franchisee shall collect, transport and dispose waste discharged from the following sources:

- (1) Households;
- (2) Restaurants;
- (3) Hotels;
- (4) Shops;
- (5) Offices;
- (6) Schools (both Private and Public);;
- (7) Public market (Kangemi);
- (8) Other Public facilities (Parks, Social halls, Churches, road reserves, riparian way leaves etc.);
- (9) Road sweepings; and
- (10) Collection of carcasses

3.2 Road sweeping

Road sweeping in all the roads in the pilot area will be as per guidelines provided by the technical officer in charge of solid waste management.

3.3 Waste Collection Time and Frequency

The Franchisee shall inform the customers of their collection schedule prior to the commencement of the operation. In addition, collection and transportation shall be conducted at least 2 times a week for residential areas, but collection from any other source will be done based on need and call. Waste disposal will only be done between 6 a.m. to 6 p.m.

3.4 Waste Bags and Containers

The County Government has adopted three colour coding system for waste containment. In this respect, the franchisee shall provide appropriate number of liner bags or containers to their clients in three colours as detailed below:-

Green liner bag/container:	Organic waste
Blue liner bag/ container :	Plastics and Papers
Brown liner bag/container	: Others

Except for waste under items (7&10) where, the franchisee can innovate any other best way of containing.

Information including PSP Name, logo, Address, Phone number and any other that may be required from time to time must be clearly printed or marked on one side of the liner bags and the containers. For liner bags, the franchisee will have to provide those of at least 80 micron thickness measuring 70 cm by 100 cm. For the containers, the following will suffice depending on the needs of the clients: 70 litres; 120 litres; 240 litres and 360 litres.

3.5 Waste Charge

It will be the responsibility of the Franchisee to propose the waste charge upon which an agreement will be reached with the County Government. Such rates will be guided by the current charges as follows:

- (1) Households (Kilimani and Kileleshwa) 500-800KSh/household/month
- (2) Households (Kangemi) 80-200KSh/household/month
- (3) Restaurants, Hotels, Shops, Offices, Private school in Kilimani and Kileleshwa (70 litre container,400/ per collection, 120 litre container 700/ per collection,240 litre container 1200/ per collection, 360 litres container per collection 1600/)
- (4) Public market (Kangemi) Kshs/ton 200-600
- (5) Public facilities (Public school, Social halls, Government Offices, etc.) Kshs/liner bag 50-100

Further, the franchisee will be expected to collect all the agreed waste charge to ensure effective and efficient services.

3.6 Franchise Fee

The Franchisee shall pay the following franchise fee to NCC at the end of every three month after the operation.

Franchise fee is 15% of total income of the Franchisee.

3.7 Ownership of Segregated Recyclable Waste

The Franchisee will have ownership of any recyclable waste segregated at source or by the Franchisee.

3.8 Expiry of Authority of Solid Waste Management Service Provision in the Pilot Project Area

Any authority previously granted for provision of solid waste management services in the pilot project area will cease to be valid immediately upon award of the contract to the successful franchisee.

04. UNDERTAKINGS OF NCC IN THE PILOT PROJECT

4.1 Monitoring for Non-Licensed PSP

The County Government will ensure that no any other actor will provide solid waste management services in the pilot project area.

4.2 Public Awareness of the Franchise System

The County Government is responsible for continuous awareness creation in the pilot project area.

4.3 CBO Activities

The County Government will facilitate agreeable and sustainable partnerships between the franchisee and CBOs working in the low income areas of the pilot project.

B. PRE-QUALIFICATION INSTRUCTIONS

01. INTRODUCTION

The **Nairobi City County (NCC)** invites interested candidates who must meet the set criteria to bid for pre-qualification for procurement of street sweeping, solid waste collection, transportation and disposal services in Zone 7.

02. PRE-QUALIFICATION OBJECTIVE

The main objective is to shortlist potential providers of solid waste management services who meet the set criteria for possible engagement thereafter for operating in the pilot project area.

03. INVITATION OF PREQUALIFICATION

Bidders registered with registrar of companies under the laws of Kenya in respect to services are invited to submit their **PRE-QUALIFICATION BIDS** to the **COUNTY SECRETARY, NAIROBI CITY COUNTY**. Bids will be submitted in complete either singly or in joint venture.

04. PRELIMINARY EVALUATION

Prospective contractors must have carried out successful similar works. Additionally, bidders are required to **submit copies** of the following mandatory documents:-

- (a) Current Year Single Business Permit for the firm bidding;
- (b) PIN Certificate of the firm bidding;
- (c) Certificate of incorporation of the firm bidding;
- (d) VAT certificate of the firm bidding;
- (e) Valid license to transport waste and acknowledgement of waste license application/license payment for vehicle registration number from NCC
- (f) Proof of purchase of bidding document (Receipt);
- (g) Collection and Transportation Permit from NCC;
- (h) Relevant experience and proof of qualified staff, (Attach CV);
- (i) Audited financial reports for at least financial years 2011/2012 and 2012/2013;
- (j) Certified bank statement for at least financial years 2011/2012 and 2012/2013;
- (k) Policy Document; and
- (l) NEMA Clearances

NOTE

Any bidder who does not submit the above mandatory documents shall be considered non-responsive and will not proceed to the next level of evaluation.

EVALUATION CRITERIA FOR STREET SWEEPING, SOLID WASTE COLLECTION, TRANSPORTATION AND DISPOSAL SERVICES – KILIMANI, KILELESHA AND KANGEMI (FRANCHISE ZONE NO. 7).

No.	Criteria	Requirements	Evaluated by	Score
1.	Experience	Years of experience	<1Year 1-2 Years >2-3 Years >3-4 Years >4 Years	2 4 6 8 10
2.	Clientele base	Number of Clients	<100 101-200 201-300 301-400 >401	2 4 6 8 10
3.	Human capacity (Application Form 3A)	Management staffs Supervisors/Artisans/Other Technical staffs etc. Low cadre staffs	1-2 3-5 1-5 6-10 11-15 >16 <50 51-100 101-150 >151	1 2 1 2 3 4 1 2 3 4
4.	Trucks (Application Form 3; For Kangemi where access is limited, ensure introduction of vehicles which are flexible enough to manoeuvre the narrow accesses)	Number	0-5 6-9 10-15 >15	2 4 6 10
5.	Total fleet capacity	Tonnage	<25 26-50 51-75 >75	2 4 6 10
6.	Daily waste handling capacity	Tonnage	<25 26-50 51-75 >75	2 4 6 10
7.	Compliance			

No.	Criteria	Requirements	Evaluated by	Score
	(Application Form 4)	Evidence of delivery of waste to the final disposal site : Copies of records of waste depositing at Dandora for at least 2 years (2012-2013)	<25% 26-50 51-75 100%	2 4 6 10
	(Application Form 4A)	Evidence of tax compliance Copies of records of tax payment certification for at least 2 years (2012-2013)	Non-compliant Partial compliance Full compliance	0 5 10
8.	Financial Status (Audited accounts & Certified bank statement for at least 2 years :2011/2012 &2012/2013)	Financial turnover	5-7.5 Million 7.6-10 Million 11-15 Million >15 Million	2 4 6 10

05. PRE-QUALIFICATION DOCUMENT

This document includes questionnaire forms and documents required of prospective service providers.

In order to be considered for pre-qualification, prospective suppliers must provide all the information herein requested.

06. QUESTIONS ARISING FROM DOCUMENTS

Questions that may arise from pre-qualification documents should be directed to the Director of Procurement, Nairobi City County.

P.O. BOX 30075-00100
NAIROBI

07. ADDITIONAL INFORMATION

The NAIROBI CITY COUNTY reserves the right to request submission of additional information from prospective bidders.

Request for quotations will be made available only to those bidders whose Pre-qualifications bids are accepted by the Nairobi City County after clearing **all the requirements** described above.

The prequalified PSP or JV will be shortlisted and have the right to attend in the opening of bids. The eligible tenderer shall be able to receive tender documents at a fee of Kshs. 1,000. The evaluation will be based both on technical and financial proposals.

C. PRE-QUALIFICATION DATA INSTRUCTIONS

01. PRE-QUALIFICATION DATA FORMS

The attached questionnaire forms 1, 2, 2A, 3, 3A, 4, 4A, 5 and 6 are to be pre-qualified for submission of tender for specific tender.

02. MANNER OF DOCUMENTATION

The pre-qualified application forms which are not filled out completely and submitted in the prescribed manner will not be considered. All the documents that form part of the proposal must be written in English and in Ink.

03. USAGE OF SUBMISSION DATA

It is understood and agreed that the prequalification data on prospective bidders is to be used by the Nairobi City County to discretionally determine and according to its role, judge the qualification of prospective bidders to perform in respect to the tender category as described by the client.

04. QUALIFICATION

Prospective bidders will not be considered qualified unless in the judgment of the Nairobi City County that they possess street sweeping, solid waste collection capacity, compliance, and financial status sufficient to satisfactorily execute the contract for delivery of works.

REGISTRATION OF CONTRACTORS APPLICATION FORM

I/We.....hereby apply for registration as a contractor of the Pilot Project for Introduction of Franchise System and Heightening of Public Awareness.

Post office address.....
Town.....
Name and building.....
Room/office..... floor no.....
Telephone No s.....
Full name of applicant.....

Signature.....

BUSINESS & ORGANIZATION INFORMATION

MANAGEMENT PERSONNEL.....
CHIEF EXECUTIVE OFFICER.....
Treasurer.....
Other.....

PARTNERSHIP FOR THE APPLICANT CONSTITUTES A JOINT VENTURE OR AN ASSOCIATION, I.E. LEAD FIRM AND SUB-CONTRACTORS, PLEASE DESCRIBE THIS.

Names of partners.....

.....
.....

Business founded or incorporated.....

Under present management since.....

Net worth equivalent Kshs.....

Bank reference and address.....

.....

Bonding company reference and address.....

.....

Enclose copy of the joint venture agreement.

STANDARD FORMS

Notes on completion of Standard Forms

- Application Form 1 - General information
This form is to be completed by all applicants. Where the applicant proposes to use sub-contractors the information should be supplied in this format. Where there is a joint venture, each partner shall complete the form.
- Application Form 2 - General Experience Record
This form is to be completed by all applicants. Separate sheets should be used for each partner of a joint venture. Applicants are not required to enclose testimonials, certificates or publicity materials with their applications.
- Application Form 2A - Joint Venture Summary
This form is to be completed by joint venture applicants only.
- Application Form 3 - Status of Existing Waste Collection Vehicles
This form is to be completed by all applicants meeting the requirement set out in the instructions to candidates. Separate sheets shall be used for each member of or joint venture.
- Application Form 3A - Status of Existing Number of Employees
This form is to be completed by all applicants meeting the requirement set out in the instructions to candidates. Separate sheets shall be used for each member of or joint venture.
- Application Form 4 - Record of Waste Amount transported to the final disposal facility (Dandora)
This form is to be completed by all applicants meeting the requirement set out in the instructions to candidates. Separate sheets shall be used for each member of or joint venture. In addition, all applicants shall attach copies of records of waste loading from Dandora weighbridge for the last 2 years (2012-2013).
- Application Form 4A - Record of Tax Compliance
This form is to be completed by all eligible applicants
Separate sheets shall be used for each member of or joint

venture. In addition, all applicants shall attach copies of tax payment certificate for the last 2 years (2012-2013).

- Application Form 5 - Financial Status
This form shall be completed by eligible applicant and each member of a joint venture. It should contain financial information to demonstrate that they meet the requirements stated in the instructions to candidates. Separate sheets should be used to provide complete banker information, if necessary. A copy of the audited balance sheet if available should be attached. The information should include the summary of actual assets and liabilities for the last five years.
- Application Form 6 - Questionnaire
This form is to be completed by all applicants.

APPLICATION FORM 1

GENERAL INFORMATION

1.	Name of firm	
2.	Head office address	
3.	Telephone	Contact
4.	Fax	E-mail
5.	Place of incorporation/registration	Year of incorporation/registration

Nationality of owners		
	Name	Nationality
1.		
2.		
3.		
4.		
5.		

APPLICATION FORM 2

GENERAL EXPERIENCE RECORD

Name of Applicant

Annual turnover data (Waste collection and transportation service only)		
Year	Turnover	Kshs.
1.		
2.		
3.		
4.		
5.		

APPLICATION FORM 2A

JOINT VENTURE SUMMARY (where applicable)

Names of all partners of a joint venture
1. Lead partner
2. Partner
3. Partner
4. Partner
5. Partner
6. Partner

Total value of annual waste collection and transportation service turnover, in terms of work billed to clients, in KSh.

Annual turnover data (waste collection and transportation service only): KSh.

Partner	Form 2 Page no.	Year 1	Year 2	Year 3
1. Lead Partner				
2. Partner				
3. Partner				
4. Partner				
5. Partner				
6. Partner				
	Total			

APPLICATION FORM 3

STATUS OF EXISTING WASTE COLLECTION VEHICLES

Name of Applicant

Note: Use a separate sheet for each partner of a joint venture

No.	Name/ Make	Model No.	Type	Load Capacity(t)	Registration year
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
Total	—	—	—		—

APPLICATION FORM 3A

STATUS OF EXISTING NUMBER OF EMPLOYEES

Name of Applicant

Note: Use a separate sheet for each partner of a joint venture

Category	Number of employees
Office worker	
Driver	
Loader	
Sweepers	
Mechanic	
Other	
	Total

APPLICATION FORM 4

RECORD OF WASTE AMOUNT CARRIED INTO FINAL DISPOSAL FACILITY AT DANDORA

Name of Applicant

Note: Use a separate sheet for each partner of a joint venture

Month	Waste amount (t/ month)	
	Year of 2012	Year of 2013
January		
February		
March		
April		
May		
June		
July		
August		
September		
October		
November		
December		
Total		

APPLICATION FORM 4A

RECORD OF TAX PAYMENT

Name of Applicant

Note: Use a separate sheet for each partner of a joint venture

	Payment amount (KSh.)	
	Year of 2012	Year of 2013
Income tax		
Value-Added tax		
Corporate tax		
(Please add the other taxes, if any)		
Total		

Copy of tax payment certification shall be attached.

APPLICATION FORM 5

FINANCIAL STATUS

Name of Applicant

Note: Use a separate sheet for each partner of a joint venture

Banker	Name of banker
	Address of banker
 Telephone Contact name and title
	Fax E mail

Financial information in Ksh.	Actual : previous two years		Projected: next two years	
	Year of 2012	Year of 2013	Year of 2014	Year of 2015
1. Total assets				
2. Current assets				
3. Total liabilities				
4. Current liabilities				
5. Profits before taxes				
6. Profits after taxes				

Source of finance	Amount Kshs.
1.	
2.	
3.	
4.	

APPLICATION FORM 6

Questionnaire

The Nairobi City County in its efforts to streamline its payment process is updating its contractor data bank.

You are therefore required to provide the following information; the same will be used to generate a payment voucher for contractors.

1. NAME OF SUPPLIER/CONTRACTOR

.....
.....

2. PIN NUMBER.....

3. VAT NUMBER.....

4. CERTIFICATE OF REGISTRATION NO.....

DATE OF REGISTRATION.....

5. SINGLE BUSINESS PERMIT FOR YEAR 2013

NO.....CODE.....AMOUNT PAID

6. ADDRESS: P.O BOX.....

CODE.....

TOWN.....

COUNTRY.....

7. ROAD/STREET.....

8. PHYSICAL LOCATION DESCRIPTION

.....
.....
.....

FILLED BY

(NAME).....SIGN.....

DESIGNATION.....DATE.....

OFICIAL RUBBER STAMP/SEAL.....

SWORN STATEMENT

Having studied the pre-qualification information for the above project, we/I hereby state:

(a) That information furnished in our application is accurate to the best of our /my knowledge.

(b) That in case of being pre-qualified we acknowledge that this grants us the right to participate in due time in the submission of a tender or quotation on the basis of provisions in the tender or quotation documents to follow.

(c) We enclose all the required documents and information required for the pre-qualification evaluation.

Date.....

Applicant's Name.....

Represented by.....

Signature.....

Official Stamp or seal.....

(Full name and designation of the person signing and stamp or seal)

Attachment 2
Tender Document in Zone 7



**NAIROBI CITY COUNTY
DEPARTMENT OF ENVIRONMENT**

**BID DOCUMENT
(REQUEST FOR PROPOSAL)**

M/S

CONTRACT NCC/DOE/T/242/2013-2014

**STREET SWEEPING, SOLID WASTE COLLECTION, TRANSPORTATION
AND DISPOSAL SERVICES
(FRANCHISE ZONE 7)**

2014

**COUNTY SECRETARY
NAIROBI CITY COUNTY
P.O.BOX 30075- 00100
NAIROBI**

**DIRECTOR OF PROCUREMENT
CITY HALL ANNEX
1ST FLOOR**

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NAIROBI CITY COUNTY

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City Hall
P.O. Box 30075-00100
Nairobi
Kenya

1. **NCC/DOE/T/232/2013-2014 – STREET SWEEPING , SOLID WASTE COLLECTION, TRANSPORTATION AND DISPOSAL –Kilimani, Kileleshwa and Kangemi (Franchise Zone 7) ZONE – FOR PERIOD 2014/16**

Interested eligible bidders may inspect and purchase a complete set of tender documents from the office of the Director of Procurement, First Floor, City Hall Annex upon payment of a non-refundable fee of Kenya Shillings One Thousand (Kshs. 1,000/=) Only.

The complete tender document in a plain sealed envelope clearly bearing only the tender number and title of the Contract should be deposited in the Tender Box placed at the corridor of 1st floor City Hall Annex addressed to: -

County Secretary
Nairobi City County,
P.O. Box 30075-00100
NAIROBI.
E-mail: adm@nairobi-city.org
Website: www.nairobi-city.org

So as to reach him on or before **12.00 Noon on Tuesday, 15th April, 2014**. The tenders will be opened soon thereafter at the Procurement Board Room, City Hall Annex, 1st Floor in the presence of bidders representatives who choose to attend.

Tenders must be accompanied by Tender Security in the form and amount specified in the Tender Documents.

Tenderers are requested to strictly abide by the requirements to avoid disqualification.

Nairobi City County is not bound to accept the lowest or any tender.

LILIAN W. NDEGWA
COUNTY SECRETARY

DEFINITION OF TERMS

- a) **Basic Unit Franchise Fee** - The fifteen (15%) of current contractor's income calculated from waste charge.
- b) **Bidder** - Party that offers to contest for a tender.
- c) **CBO** - Community Based Organization: Institution consisting of members from the local community who engage in solid waste management activities.
- d) **Collection Capacity** - Demonstrated ability to collect waste from prospective clients.
- e) **Compliance** - Adherence to set rules and guidelines.
- f) **Franchise fee** - The fifteen (15%) of current contractor's **total** income of waste collection and transportation contract payable to the Procuring Entity every three month after the operation.
- g) **Financial Proposal** - Written offer expressing capacity to manage funds appropriately and honoring of financial obligation.
- h) **Financial status** - Statement depicting how funds have been managed.
- i) **Franchise System** - A model whereby a successful tenderer is awarded a definite and exclusive contract to provide a defined service in a specific area.
- j) **Franchisee** - The party that will be awarded the tender to serve zone 7.
- k) **Joint Venture** - A business agreement in which the parties pool resources and work together for a finite time.
- l) **Lead Partner** - Principal party in a joint venture.
- m) **NEMA** - National Environment Management Authority
- n) **Partner** - One of the parties in a joint venture.
- o) **Pre-qualification** - Initial evaluation of a party's capacity to contest in the bid.
- p) **PSP** - Private Service Provider for solid waste collection, transportation and disposal.

- q) Recyclables - Waste items that can be transformed into usable products.
- r) Segregation at Source - Separation of waste into defined categories at the point of production.
- s) Solid Waste Collection - Transfer of solid waste from designated /undesignated collection points to the assigned solid waste collection truck.
- t) Solid Waste Disposal - Finally getting rid of solid waste in the designated site.
- u) Solid Waste - Municipal solid waste including waste from households, businesses and institutions, construction and demolition waste in small quantities, general solid wastes from hospitals (excluding hazardous wastes), waste from smaller industries that is not classified as hazardous, and wastes from streets, public areas and open drains. It is not concerned with wastes from agriculture, larger industries or the mining industries which normally handle their own wastes.
- v) Street sweeping - Removal of solid wastes e.g. silt, litter, pebbles etc. from public roads i.e. way levees, streets, highways, avenues, alleys and other pathway for public use.
- w) Solid Waste Transportation - Transfer of solid waste from the collection points to the final disposal site.
- x) Technical Proposal - Written offer expressing capacity in terms of special skills, knowledge and mechanics.
- y) TOR - Terms of Reference which explains the objectives, scope of work, activities, and respective responsibilities of the party involved in Nairobi City County and the Bidder, and expected contract result and deliverables.
- z) Tenderer - A party that offers a tender to serve the franchise zone 7
- aa) Zone 7 - One of the 9 zones in Nairobi consisting of Kilimani, Kileleshwa and Kangemi; that has been selected to pilot the franchising system of waste collection and transportation
- bb) Zoning - Division of the County into particular sections based on socio-economic characteristics

SECTION I INSTRUCTIONS TO BIDDERS

A. GENERAL

I.A.1 Bid Schedule

The schedule for the execution of this bid and the implementation of the inspection of bidder's offices/premises and vehicles during the evaluation are as follows:-

- i) Release of Bid Document (Request for Proposal): **Tuesday, 25th March, 2014**
- ii) Deadline for submitting Bids: **Tuesday, 15th April, 2014**
- iii) Finishing of evaluation of Bids: **Tuesday, 20th May, 2014**
- iv) Signing contract: **Thursday, 5th June, 2014**
- v) Deadline for submitting Final Work Plan: **Friday, 4th July, 2014**
- vi) Starting of Franchise System: **Friday, 1st August, 2014**

I.A.2 Eligible Bidders

To be eligible to respond to this tender, the Bidder must demonstrate that they or the principals assigned to the project, are fully licensed to do work of this nature and should also submit the completed Bidder's Questionnaire, Qualification Information & Form of Bid included with this tender. The **Nairobi City County** reserves the right to visit Contractor's site(s) to inspect equipment, facilities and licenses to determine if the Bidder has the required resources, is legally licensed and is qualified to perform the work as described in this tender.

I.A.3 Association of Joint Venture

While preparing the technical proposal, the Bidder should attend the following:

- i) For a proposal, a pre-qualified Bidder may boost its capacity for the assignment by
 - a) association with non-pre-qualified firms, with the Bidder as the lead firm and solely liable under the contract; or
 - b) forming a joint venture with non-pre-qualified firms, with the Bidder and the partners of the joint venture jointly and severally liable under the contract.

If the Bidder constitutes a joint venture, the Bidder submits **(i) a copy of the joint venture agreement with its technical and financial proposals** and **(ii) a power of attorney** (executed by all partners) that authorises the designated lead partner of the joint venture to act for the joint venture and to legally bind such joint venture in any contractual or similar documentation. Any joint venture agreement and joint venture power of attorney is attached to the Bidder's technical and financial proposals.

- ii) A pre-qualified Bidder (including any joint venture partner) can associate with another pre-qualified Bidder.
- iii) A pre-qualified Bidder, for a joint venture or an association (i.e., lead firm and sub-contractors), may broaden its capacity by adding additional partners or associates/sub-contractors, subject to the restrictions in (b) above, in its proposal.

- iv) The joint venture agreement identifies the lead partner. All partners in a joint venture sign the proposal unless the lead partner is nominated to do so in the power of attorney.
- v) If the Bidder form a joint venture or association with non-pre-qualified firms, the non-pre-qualified firms **MUST** submit the following documents in the technical proposal (**see Schedule 1, under Section V Schedule of Requirements**):
 - a) Current Year Single Business Permit for the firm bidding;
 - b) PIN Certificate of the firm bidding;
 - c) Certificate of incorporation of the firm bidding;
 - d) VAT certificate of the firm bidding;
 - e) Valid license to transport waste and acknowledgement of waste license application/license payment for vehicle registration number from NCC; and
 - f) NEMA Clearances.

I.A.4 Bidder's Memorandum

All bidders shall provide in **Section V Schedule of Requirements** and be evaluated in combination with technical and financial proposal.

I.A.5 One Bid per Bidder

Each Bidder shall submit one bid for Franchise Zone 7.

I.A.6 Cost of Bidding

The Bidder shall bear all the costs associated with the preparation and submission of its bid and the **Nairobi City County** hereinafter referred to as the "Procuring Entity" or "The County" will in no case be responsible for those costs, regardless of the conduct or outcome of the Biding process.

I.A.7 Site Visit

The Bidder, at the bidders own responsibility and risk is encouraged to visit and examine the site of required services and its surrounding areas, such as Dandora dumpsite and obtain all information that may be necessary for preparing the bid and entering into a contract for the services. The costs of visiting the site shall be at the bidders own expense.

B. BIDDING DOCUMENT

I.B.1 Contents of Bidding Document

The Bid document comprises the documents listed here below together with any addenda and amendments issued in accordance with conditions set herein:-

- i) Form of invitation to Bid (Tender Notice)
- ii) Instructions to Bidders
- iii) Terms of Reference
- iv) General Conditions of Contract
- v) Special Conditions of Contract
- vi) Schedule of Requirements

The Bidder is expected to examine carefully all instructions, forms, terms, and specifications in the bidding documents. Failure to furnish all information required by the bidding documents or to submit a bid not substantially responsive to the bidding document in every respect will be at the Bidder's risk and may result in rejection of its bid.

I.B.2 Clarification of Bidding Documents

A prospective bidder requiring any clarification of the Bid documents may notify the "Procuring Entity" in writing or by telephone or facsimile at the Procuring Entity's mailing address indicated in the Tender Notice. The Procuring Entity will respond in writing to any request(s) for clarification that it receives earlier than fourteen (14) days prior to the deadline for submission of Bids.

Written copies of the Procuring Entity's response(s) (including an explanation of the query but without identifying the source of the inquiry) will be sent to all prospective Bidders that have purchased and received the Bid documents.

I.B.3 Amendments of Bidding Documents

At any time prior to the deadline for submission of Bids, the Procuring Entity may, for any reason, whether at its own initiative or in response to a clarification requested by a prospective Bidder, modify the Bid documents by issuing addendum.

Any addendum thus issued shall be part of the bidding documents and shall be communicated in writing to all purchasers of the bidding documents. Prospective bidders shall acknowledge receipt of each addendum to the Procuring Entity by signing on every page and returning a copy of the same to the **Director of Procurement** before opening of bids. Each addendum shall be firmly attached to the bidding document when returning the same to the Procuring Entity.

To give prospective Bidders reasonable time in which to take an addendum into account in preparing their Bids the procuring entity may, at its discretion extend the deadline for the submission of Bids.

C. PREPARATION OF BIDS

I.C.1 Language of Bid

The Bid and all correspondence and documents relating to the Bid exchanged by the Bidder and the Procuring Entity shall be written in the English Language. Supporting documents and printed literature furnished by the Bidder with the Bid may be in another language provided they are accompanied by an appropriate translation of pertinent passages in the above stated language. For the purpose of interpretation, the English language shall prevail.

I.C.2 Bid Prices

The Bidder shall indicate on the appropriate price schedule the unit prices for the services it proposes to charge under the Contract in accordance with **Clause II.B.5**.

Bidders are required to insert the appropriate rate of Value Added Tax (VAT) in force at the time of Bidding.

I.C.3 Currencies of Bid

Bids shall be priced in Kenya shillings.

I.C.4 Prices Adjustment

Prices for all services provided under this contract shall remain fixed for the three-year term of the Contract after which they may be subject to review.

I.C.5 Bid Validity

The Bid shall remain valid for a period of ninety (90) days from the specified date of Bid closing. A Bid valid for a shorter period shall be rejected by the Procuring Entity as non-responsive.

In exceptional circumstances prior to expiry of the bid validity period, the Procuring Entity may request that the Bidders extend the period of validity for a specified additional period. The request and the Bidders responses shall be made in writing. A Bidder may refuse the request without forfeiting its bid security. A Bidder agreeing to the request will not be required nor permitted to modify his Bid, but will be required to extend the validity of his Bid Security correspondingly.

I.C.6 Bid Security

The Bidder shall furnish as part of its bid, a **bid security** in the amount of **Kshs. 200,000** either in form of bank guarantee or bankers cheque payable to the **Nairobi City County**, valid for at least **120 days** from date of bid opening.

The Bid Security **MUST** be submitted together with the Bid when depositing in the Tender Box at the entrance to the Director of Procurement's office, City Hall Annex, First Floor, Room 105.

The Procuring Entity will reject any Bid not accompanied by an acceptable Bid security as non-responsive.

Bid securities of unsuccessful bidders will be discharged/ returned as promptly as possible as but not later than thirty (30) days after the expiration of the period of Bid validity prescribed by the Procuring Entity.

The successful Bidder's bid security will be discharged upon the Bidder signing the Contract and furnishing the required performance security.

The Bid security may be forfeited.

- i) If the Bidder withdraws its Bid after Bid opening during the period of Bid validity or
- ii) In the case of a successful Bidder, if it fails within the specified time limit to:-
 - a) Sign the Contract in accordance with **Clause I.F.7** of instructions to Bidders.
 - b) Furnish the necessary performance security in accordance with **Clause I.F.8** of instructions to Bidders.

I.C.7 Format and Signing of Bids

The Bidder shall prepare two copies of the Bid, clearly marking each "**ORIGINAL BID**" and "**COPY OF BID**" as appropriate. In the event of any discrepancy between them, the original shall prevail.

The original and copies of the Bid shall be typed or written in **indelible ink** and shall be signed by the Bidders or a person or persons duly authorized to bind the Bidder to the Contract. Proof of authorization shall be furnished in the form of a written power of attorney which shall accompany the Bid. All pages of the Bid, except for un-amended printed literature, shall be initialed by the person or persons signing the Bid.

The complete Bid shall have no interlineations or erasures or overwriting except as necessary to correct errors made by the Bidder in which case such **corrections shall be initialed by the persons signing the Bid.**

I.C.8 Duration of Services

The Contract shall run for a period of **three (3) years** effective from the date the award letter is issued and the contractor has accepted the award in writing. This award letter is a form of contract; however, it does not exempt any contractor from signing the contract agreement.

This Contract may be terminated before the expiry of the three (3) year period. In such an event, the Contractor will be informed in good time (2 months in advance) and in writing.

In the event that this Contract may be extended beyond the Contract period, then the Contractor would be informed by the Procuring Entity in writing and such an extension shall not exceed ninety (90) days.

D. SUBMISSION OF BIDS

I.D.1 Sealing and Marking of Bids

The Bidder shall seal the original and each copy of the Bid in separate envelopes, duly marking the envelope as “ORIGINAL” and “COPY”. The envelopes shall then be sealed in an outer envelope.

The outer envelope shall:

- i) be addressed to the:-
County Secretary,
Nairobi City County,
P.O. Box 30075 - 00100
Nairobi.
- ii) bear the following identification only:
STREET SWEEPING, SOLID WASTE COLLECTION AND DISPOSAL SERVICES – FRANCHISE ZONE 7
And the words
DO NOT OPEN BEFORE AT 12.00 noon on Tuesday, 15th April, 2014 as per Bid Notice.

The inner envelopes shall indicate the name and address of the Bidder to enable the Bid to be returned unopened in case it is declared “Late”.

If the outer envelope is not sealed and marked as instructed above, the Procuring Entity will assume no responsibility for the misplacement or premature opening of the Bid. A Bid opened prematurely for this cause will be rejected by the Procuring Entity and returned to the Bidder.

I.D.2 Deadline for Submission of Bids

Bids must be received by the Procuring Entity at the address specified above not later than **AT 12.00 noon on Tuesday, 15th April, 2014** (as per Bid notice herein.)

The Procuring Entity may, at its discretion, extend the deadline for the submission of Bids by amending the Bid documents in accordance with **Clause I.B.3** in which case all

rights and obligations of the procuring entity and candidates previously subject to the deadline will thereafter be subject to the deadline as extended.

I.D.3 Late Bids

Any Bid received by the Procuring Entity after the deadline prescribed in **Clause I.D.2** will be returned unopened to the Bidder.

I.D.4 Modification and Withdrawal of Bids

The Bidder may modify and withdraw his bid submission provided that written notice of the modification or withdrawal is received by the Procuring Entity prior to the prescribed deadline for submission of bids.

The Bidder's modification or withdrawal notice shall be prepared, sealed, marked and delivered in accordance with provisions for the submission of Bids as stipulated under **Clause I.D.1** above. A withdrawal notice may also be sent by telex or cable but followed by a signed confirmation copy, postmarked not later than the deadline for submission of Bids.

No Bid may be modified after the deadline for submission of Bids.

No Bid may be withdrawn in the interval between the deadline for submission of Bids and the period of Bid validity specified by the Bidder on the Bid form. Withdrawal of Bid during this interval may result in the Bidder's forfeiture of his Bid security.

E. BID OPENING AND EVALUATION

I.E.1 Opening of Bids

The Procuring Entity will open all Bids in the presence of Bidders' representatives who choose to attend at City Hall on the date, place and time given on the Bid Notice herein.

The Bidders' representatives who are present shall sign a register evidencing their attendance.

Bidders' names, Bid modifications or withdrawals, Bid prices and the presence or absence of required Bid security and such other details as the procuring entity, at its discretion, may consider appropriate, will be announced at the opening.

The Procuring Entity will prepare minutes of the Bid opening.

I.E.2 Process to be Confidential

After the public opening of Bids, information relating to the examination, clarification, evaluation and comparisons of Bids and recommendations concerning the award of Bid shall not be disclosed to Bidders or other persons not officially concerned with such process until the award of Bid is announced.

Any effort by the bidder to influence the Procuring Entity in the process of examination, classification, evaluation, comparison of bids and decision concerning award of contract shall result in the rejection of its bid.

I.E.3 Clarification of Bids

To assist in the examination, evaluation and comparison of Bids, the Procuring Entity may, at its discretion, ask the Bidder for a clarification of its Bid. The request for clarification and the response shall be in writing and no change in the price or substance of the Bid shall be sought, offered or permitted.

I.E.4 Examination of Bids and Determination of Responsiveness

Prior to the detailed evaluation of bids, the Procuring Entity will determine whether each bid is substantially responsive to the requirements of the bidding documents.

For the purpose of this Clause, a substantially responsive bid is one, which conforms to all the terms, conditions and specifications of the bidding documents without material deviation or reservation. A material deviation or reservation is one that affects in any substantial way the price, scope, quality, completion, timing or administration of the works to be undertaken by the bidder under the contract. Or which in any substantial way is inconsistent with the bidding documents, the Procuring Entity's rights or the bidder's obligations under the contract and the rectification of which would affect unfairly the competitive position of other bidders who have presented substantially responsive bids at reasonable price.

A bid determined to be substantially non-responsive will be rejected by the Procuring Entity and will not subsequently be made responsive by the bidder by way of correction of the non-conformity.

The Procuring Entity may accept any non-material deviation or reservation provided that the acceptance thereof does not prejudice or affect the relative ranking order of any bidder in the evaluation of bids.

I.E.5 Correction of Errors

Bids determined to be substantially responsive will be checked by the Procuring Entity for any arithmetical errors in computation and summation. The Procuring Entity will correct errors as follows:

- i) Where there is discrepancy between amounts in figures and in words, the amount in words will prevail;
- ii) Where there is discrepancy between the unit price and the total amount derived from the multiplication of the unit price and the quantity, the unit price as quoted will normally govern unless in the opinion of the Procuring Entity there is an obviously gross misplacement of the decimal point in the unit price, in which event, the total amount as quoted will govern; and
- iii) In the event that as a result of checking the arithmetical errors, the multiplication of unit rates, the quantities and the summation, the Corrected Bid Price differs from the Quoted Bid Price by the Bidder, the correction by the Procuring Entity shall prevail.

If the bid is corrected for arithmetic errors and a bidder does not accept the correction of the said errors as outlined above, the bid will be rejected.

I.E.6 Evaluation and Comparison of Bids

The Procuring Entity will evaluate and compare only those bids determined to be substantially responsive to the requirements of the bid documents.

The evaluation of bid by the Procuring Entity will take into account, in addition to the Bid amounts, the following factors:

- i) Arithmetic errors corrected by the procuring entity in accordance with relevant clause herein;
- ii) Non-material deviations from or reservations to the Bid documents that are quantifiable; and,

- iii) Such other factors of a Technical, Financial, Contractual or Administrative nature that the Procuring Entity considers may have a significant impact on Bid execution price and payments, including the effect of items or unit rates that are unbalanced or unrealistically priced.

Offers, deviations and other factors that are in excess of the requirements of the Bid or otherwise result in the accrual of unsolicited benefits to the procuring entity shall not be taken into account in Bid evaluation.

I.E.7 Evaluation Methodology

The Bids evaluation committee will evaluate Bidders in terms of technical proposal and financial proposal. The ratio of technical and financial evaluation shall be 70 and 30 respectively. Procuring Entity will take into consideration when awarding the contract the sum of the scores for each criterion. The following two requirements carry a 100% maximum score with a cut off score of 65%.

I.E.8 Evaluation Criteria of Technical Proposals

Requirements/Criteria shall be evaluated in accordance with the following listing and the weights assigned to each criteria:

- i) **Personnel: 25%**
- ii) **Head Office Backup: 5%**
- iii) **Work plan: 60%**
- iv) **Experience, past performance, references and bidder capability: 10%**

A. BID TECHNICAL EVALUATION MATRIX

No	Description of Criteria	Max Score	Requirements	Evaluated as	Score
1.	PERSONNEL	25			
	Qualification of key personnel to be deployed indicating the minimum academic qualification and experience. Clause IV.3 and IV.4, Section IV Special Conditions of Contract		See Schedule 4, Section V Schedule of Requirements		
	Project Management (10 marks)				
	(i) Academic qualifications and CV's attached (3 marks)	3	Attach copies of academic Certificate(s) and CV's	Ph D Master's Bachelor's & Others	3 2 1
	(ii) Professional qualification (2 marks)	2	-ditto-	Yes No	2 0
	(iii) Previous experience (5 marks)	5	Years of experience • Same projects (i.e., Street Sweeping waste collection & transportation work)	More than 5 years 5 – 3 years 3 – 1 years More than 5	5 4 3 2

No	Description of Criteria	Max Score	Requirements	Evaluated as	Score
			<ul style="list-style-type: none"> Similar projects (related to cleansing & renovation work) 	years 5 – 3 years None	1 0
	Supervisors (8 marks) Experience of supervisors.	8	Years of experience <ul style="list-style-type: none"> Same projects (i.e., waste collection & transportation work) 	More than 5 years 5-4 years 3-1 years Less than 1 year	8 4 2 0
	Drivers (7 marks) Experience of drivers.	7	Valid driving licence and minimum of 3 year experience	5-4 years 3-1 years Less than 1 year	7 3 0
2.	HEAD OFFICE BACKUP	5			
	Evidence of physical address of the Head Office (2 marks) Clause IV.1, Section IV Special Conditions of Contract	2	Attach copies of title, lease or rental agreement See Schedule 5	Yes No	2 0
	Establishment of a complaint and public liaison office (3 marks) Clause IV.9	2	Name, title and contacts of a person in charge of the office	Yes No	2 0
		1	Organisational chart of the office	Yes No	1 0
3.	WORK PLAN	60			
	Comprehensive Street Sweeping, Waste Collection and Transportation Plan Clause I.E.12		See Schedule 6		
	Allocation plan of Street Sweeping, waste collection and transportation vehicles and crews to cover with Zone 7 (10 marks)	10	Suitability of numbers and type of vehicles and other equipment and crews proposed depending on the area.	V good Good Fair Poor	10 6 3 0
	Collection and transportation route (8 marks) Clause IV.14	6	Map to be attached	Yes No	6 0
		6	Appropriateness of the route(distance, traffic and time taken)	Good Fair Poor	6 2 0
	Methodology of collection of waste	10	Appropriateness of	V. Good	10

No	Description of Criteria	Max Score	Requirements	Evaluated as	Score
	charges (10 marks)		method of the collection depending on areas to be covered	Good Satisfactory Poor	6 3 0
	Management and monitoring of Street Sweeping , waste collection and transportation work(monitors tools,schedules,plans and reporting formats) (8 marks)	8	Appropriateness of management and monitoring plans depending on areas to be covered	V. good Good Satisfactory Poor	8 4 2 0
	Action Plan from the Signing of the Contract to the Commencement of the Pilot Project- (Mobilization) (20 marks) Clause I.F.7	20			
	What kind of actions will be needed (4 marks)	4	Description of what kind of actions will be needed	Good Satisfactory Poor	4 2 0
	How these actions will be carried out (4 marks)	4	Description of how these actions will be carried out	Good Satisfactory Poor	4 2 0
	When these actions will be made (4 marks)	4	Description of when these actions will be made	Good Satisfactory Poor	4 2 0
	Who will conduct these actions (4 marks)	4	Description of who will be conducted these actions	Good Satisfactory Poor	4 2 0
	Time frame of the action plans (4 marks)	4	Chart of the time frame	Good Satisfactory Poor	4 2 0
4.	EXPERIENCE	10			
	Experience that the firm has been providing Street Sweeping , solid waste collection services or as other contracts (8 marks) Schedule 7	5	Number of letters of reference from county government or any other local authority or client (original)	More than 3 letters 3 – 1 Nil	5 3 0
		3	Number of letters of award completion certificate from county government or any other local authority or client (copies)	More than 3 letters 2 letters 1 letter Nil	3 2 1 0

No	Description of Criteria	Max Score	Requirements	Evaluated as	Score
	Current commitments (2 marks) Schedule 7	2	Copies of contract agreements	Yes No	2 1
	TOTAL TECHNICALSCORE (1+2+3+4)	100			

I.E.9 Evaluation Criteria of Financial Proposals

The Bids evaluation committee will evaluate the financial proposals' responsiveness to the TOR, applying the evaluation criteria as stated in **Sub Clause (i) & (ii) below**. Each responsive proposal receives a financial score.

Requirements/Criteria shall be evaluated in accordance with the following listing and the weights assigned to each criteria:

- v) **Financial status: 50%**
- vi) **Proposed waste charge payable to franchisee by waste generators: 50%**

B. BID FINANCIAL EVALUATION MATRIX

No	Description of Criteria	Max Score	Requirements	Amount in Ksh.	Score
1	Financial Status (Audited accounts & Certified bank statement for at least 2 years: 2011/2012 &2012/2013)	50	Turnover	5-7.5 Million 7.6-10 Million 11-15 Million >15 Million	10 20 30 50
2	Proposed waste charge payable to franchisee by waste generators	50			50
	Street Sweeping and waste Collection from Households (Kilimani and Kileleshwa)	10	Charge per month collection	Above 800 701-800 601-700 501-600 500 and below	1 3 6 9 10
	Street Sweeping and waste Collection from Public facilities	10	Charge per liner bag collection	Above 100 80-100 60-80 50-60 Below 50	1 3 6 9 10
	Waste Collection from Public market (Kangemi)	10	Charge per ton	Above 600 501-600 351-500 201-350 200 and Below	1 3 6 9 10

No	Description of Criteria	Max Score	Requirements	Amount in Ksh.	Score		
	Collection from Designated CBO's Holding points (Kangemi)	10	Charge per tonne collection	Above 2000	1		
				1501-2000	3		
				1001-1500	6		
				500-1000	9		
				Below 500	10		
	Street Sweeping and waste Collection from Commercial Establishments	2.5	Collection per 70 litres container	Above 400	1.5		
				Below 400	2.5		
				2.5	Collection per 120 litres container	Above 700	1.5
						Below 700	2.5
2.5	Collection per 240 litres container	Above 1200	1.5				
		Below 1200	2.5				
2.5	Collection per 360 litres container	Above 1600	1.5				
		Below 1600	2.5				
	TOTAL FINANCIAL SCORE (1+2)		100				

A-Technical Score

B-Financial Score

I.E.10 Ranking

In order to ensure technical to financial score ratio is maintained at 70% to 30% respectively, computation of the final score will be done using the formula indicated below:-

$$\text{Final Score (\%)} = \frac{\text{Total Financial Score} \times 30}{100} + \frac{\text{Total Technical Score} \times 70}{100}$$

After such final ranking, the first-ranked bidder will be invited for contract negotiations. In the event that the first-ranked bidder declines or negotiation on the offer fails, then the second-ranked bidder will be invited and if need be any other evaluated and ranked bidder thereafter.

I.E.11 Head Office Backup

The Bidders shall organize and operate a backup support by their head office. The backup support shall function as measures against sudden incidents, response to urgent request from customers through establishment of a complaint and public liaison office as stipulated in **Clause IV.9**, alternation of waste collection and transportation plan, allocation of urgent expenses, and so forth.

I.E.12 Contents of Work Plan

The Bidders shall submit a Work Plan in the technical proposal. The contents of the Work Plan shall include at least but not limited to the following:

i) **Comprehensive Waste Collection and Transportation Plan**

The plan should present how to organize collection and transportation crews, allocate their resources, operate the collection and transportation, work with proper collection route maps, set up the frequency of collection, collect waste charges, and monitor their performance under the implementation of the Pilot Project (PP) described in **Section II Terms of Reference**.

ii) **Action Plans from the Signing of the Contract to the Commencement of the PP**

The Bidders should also present any actions required for start-up of the PP. The Action Plans should mention clearly what kind of actions will be needed, how these actions will be carried out, when these actions will be made, who will be conducted these actions in order of appropriate time frame. It is recommended to use proper charts and tables for better understanding of the plans.

I.E.13 Inspections of Bidders Premises and Vehicles

The Procuring Entity or its representative shall have the right to visit the bidder's premises to inspect the vehicles to confirm their conformity to the contract specifications during the evaluation.

The inspections shall be conducted on the premises of the bidder or its subcontractor(s). If conducted on the premises of the bidder or its subcontractor(s), all reasonable facilities and assistance, including access to vehicle data, shall be furnished to the evaluators at no charge to the Procuring Entity.

I.E.14 Preference for Domestic Bidders

Domestic bidders shall not be eligible for any margin of preference in Bid evaluation.

I.E.15 Minority or Women Business Enterprises (MBE/WBE) Participation

It is the desire of the **Nairobi City County (NCC)** to increase the participation of minority or women-owned businesses in its contracting and procurement programs. While the City does not have any preference or set aside programs in place, it is committed to a policy of equitable participation for these firms. Bidders are requested to include in their proposals a narrative describing their past accomplishments and intended actions in this area. If bidders are considering minority or women owned enterprises participation in their proposal, those firms, and their specific duties have to be identified in the proposal. If a bidder is considered for award, he will be asked to meet with NCC staff so that the intended MBE/WBE participation can be formalized and included in the subsequent contract.

F. AWARD OF CONTRACT

I.F.1 Negotiations

Subject to any amendment, negotiations are held after the Bids evaluation committee. The date and the venue of negotiations will be communicated to the first-ranked bidder from the Procuring Entity at the time of the Bids evaluation committee. Representatives conducting negotiations for the bidder must have written authority to negotiate and conclude a contract.

I.F.2 Technical Negotiations

Negotiations include a discussion of the technical proposal, the proposed work plan with a waste collection and transportation plan and schedule, organization and personnel, and any bidder's suggestions to improve the TOR. The Procuring Entity and the bidder finalize the TOR.

I.F.3 Financial Negotiations

The financial negotiations include a discussion of the proposed waste charges, and the method of collection of the charges and payment of the Franchise Fee. The quantities of expected customers may be increased or decreased from the estimation shown or otherwise agreed in the financial proposal.

I.F.4 Procuring Entity's Right to Accept or Reject Any or All Bids

The Procuring Entity reserves the right to accept or reject any Bid, and to annul the Bidding process and reject all Bids at any time prior to Contract award, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the procuring entity's action.

The Procuring Entity reserves the right at the time of Contract award to increase or decrease the quantity of services originally specified in the schedule of requirements without any change in unit price or other terms and conditions. This will be variation of the scope/quantity that is only limited to 10% of the contract amount.

I.F.5 Conclusion of the Negotiations

Negotiations conclude with a review of the draft contract. To complete negotiations, the Procuring Entity awards the contract to the selected bidder. If negotiations fail, the Procuring Entity invites the next-ranked bidder depending on the selection method to negotiate a contract.

I.F.6 Notification of Award

Prior to the expiration of the period of tender validity, the Procuring Entity shall notify the successful Bidder in writing that its bid has been accepted.

The notification of award will signify the formation of the contract subject to the signing of the Contract between the bidder and the Procuring Entity pursuant to **Clause I.F.7**. Simultaneously the other bidders shall be notified that their bids were not successful.

Upon the successful Bidder's furnishing of the performance security pursuant to **Clause I.F.8**, the Procuring Entity will promptly notify each unsuccessful Bidder and will discharge its Bid security, pursuant to **Clause I.C.6**.

I.F.7 Signing of Contract

At the same time as the Procuring Entity notifies the successful Bidder that its Bid has been accepted, the procuring entity will send the Bidder the Contract form provided in the Bid documents, incorporating all agreements between the parties.

Upon expiry of fourteen (14) days of receipt of the Contract form the successful Bidder shall sign the Contract and return it to the Procuring Entity.

The contract will be definitive upon its signature by the two parties.

The parties to the contract shall have it signed within 30 days from the date of notification of contract award unless there is an administrative review request.

I.F.8 Performance Security

Within thirty (30) days of receipt of the notification of Contract award, the successful Bidder shall furnish the Procuring Entity with the performance security in the sum of **Kshs. 300,000.00**. The performance security shall be a Bank guarantee, cash or bankers cheque payable to the **Nairobi City County**.

The form of performance security provided in the Bid documents may be used or some other form acceptable to the Procuring Entity provided that such other format incorporates all conditions contained in the form provided herein.

The proceeds of the performance security shall be payable to the procuring entity as compensation for any loss resulting from the Bidders failure to complete its obligations under the Contract (including hire of equipments / vehicles if the Bidder fails to execute the Contract.)

The performance security will be discharged by the procuring entity and returned to the candidate not later than thirty (30) days following the date of completion of the Bidders' performance obligation under the Contract.

I.F.9 Corrupt or Fraudulent Practices

The Procuring Entity requires that Bidders observe the highest standard of ethics during the procurement process and execution of Contracts. A bidder shall sign a declaration that he has not and will not be involved in corrupt or fraudulent practices.

The Procuring Entity will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the Contract in question.

Further a Bidder who is found to have indulged in corrupt or fraudulent practices risks being debarred from participating in Public Procurement in Kenya.

I.F.10 Discounts Offered and Nil Included Rates

The Bidders are reminded that no 'nil' or 'included' rates or 'lump sum' discounts will be accepted. The rates for various items should include discounts if any.

I.F.11 Sub Contracting

Bidders are referred to **Clause III.7** of the General Conditions of Contract herein.

I.F.12 Prevention of Corruption

The Procuring Entity reserves the right to cancel and to recover from the Bidder the amount or any loss from such cancellation.

If the Contractor shall have offered or given or agreed to give to any person any gift or consideration of any kind as an inducement or reward for doing or for bearing to do so or having done or forborne to do action in relation to obtaining or execution of the Contract with the Procuring Entity, or for showing or for bearing to show favor to any person in relation to the Contract or to any other Contract with the Procuring Entity, or if the like acts have been done by any person employed by such Contractor or acting on his behalf (with or without the knowledge of the Contractor) or if in relation to any Contract with the Procuring Entity the Contractor or any person employed by him or acts on his behalf shall have committed an offence under Prevention of Corruption Act.

SECTION II TERMS OF REFERENCE

A. GENERAL

II.A.1 Outline of the Franchise System

The franchise system is designed to provide a waste collection and transportation framework that allows for a critical mass of collection points to create efficiency by granting to one successful tenderer with raising public awareness on proper solid waste management. The successful tenderer or “Franchisee” shall be a single private service provider (hereinafter referred to as “PSP”) or a single joint venture (hereinafter referred to as “JV”) that is the exclusive authority to provide waste collection and transportation services in three designated area which are Kilimani, Kileleshwa and Kangemi (Franchise Zone 7).

II.A.2 Background of the Pilot Project

The City of Nairobi is the capital of the Republic of Kenya. It is the largest administrative, commercial and industrial centre of the country and has been experiencing rapid urbanization due, largely, to the migration from rural areas and the natural increase of population. The population of the city in 2009 was estimated at 3.14 million, and it is predicted to reach 5.94 million by the year 2030.

The establishment of a proper solid waste management system is therefore an urgent issue requiring prompt resolution. The final disposal site at Dandora, an open dumping type landfill with a capacity of 500,000 cubic metres (m³) has already received 1.8 million m³ and this has a detrimental effect on the surrounding environment. In addition, the solid waste management done by the city is insufficient and does not cover the collection of solid wastes generated at present, especially, in low income residential areas. The situation has been creating serious problems in hygiene, as well as environmental and aesthetic conditions to the people of Nairobi City.

Kenya Vision 2030 is the country’s new development blueprint covering the period 2008 to 2030. It aims to transform Kenya into a newly industrialised “middle-income country providing a high quality life to all its citizens by the year 2030.” The Vision was developed through an all-inclusive and participatory stakeholder consultative process, involving Kenyans from all parts of the country. It also benefited from suggestions by some of the leading local and international experts on how the newly industrialising countries around the world have made the leap from poverty to widely-shared prosperity and equity.

Kenya Vision 2030 is divided into three fundamental pillars: the Economic, Social and Political pillars. The social pillar aims at realising a just and cohesive society enjoying equitable social development in a clean and secure environment, and it envisions Kenya becoming a nation that has a clean, secure and sustainable environment by 2030. So as to realise this strategy, the document explains that one of the specific strategies is to improve pollution and waste management.

On the other hand, based on its guidelines for aid in Kenya which focus on “environmental conservation,” the Government of Japan (hereinafter referred to as “GOJ”) has been providing assistance for the improvement of urban sanitation and environment to ensure urban hygiene and protect water quality in the face of the pollution of lakes and rivers arising from the increased of urban effluent and industrial wastewater and the increased amount of waste due to urbanisation. The GOJ had

conducted three technical assistance programmes; namely, The Study on Solid Waste Management in Nairobi City in the Republic of Kenya in 1998 to formulate a master plan; The Preparatory Survey on Integrated Solid Waste Management in Nairobi City in the Republic of Kenya in 2010 to update the master plan; and The Preparatory Survey (F/S) on Nairobi Solid Waste Management Project in the Republic of Kenya in 2011 to confirm the feasibility of the project consisting of the decommissioning of the Dandora dumpsite, construction of a new landfill site at Ruai and procurement of waste collection vehicles and thus facilitate its qualification for financing under a Japanese Yen loan.

The collection and transportation of municipal solid waste is presently implemented by the Nairobi City County (hereinafter referred to as “NCC”) as the executing agency for SWM in Nairobi, subcontractors of NCC and private service providers (hereinafter referred to as “PSP”). The revised master plan formulated in 2010 proposes that waste collection and transportation shall be improved with the involvement of private sector and community-based organisations (CBOs) in slum areas, and financial accountability shall be made transparent with the creation of the solid waste management (SWM) special account to improve NCC’s financial management of waste collection and transportation.

The Ministry of Local Government of the Government of Kenya (hereinafter referred to as “GOK”) had authorised this revised master plan as the Master Plan of SWM of Nairobi. To materialise the revised master plan, NCC had requested the GOJ to provide technical assistance to carry out the Project for Capacity Development of Solid Waste Management of Nairobi City as a Japanese loan project. In response to the request, the Japan International Cooperation Agency (hereinafter referred to as “JICA”), the official agency responsible for the implementation of technical cooperation programmes of the GOJ, dispatched a survey mission in August 2011 for the purpose of confirming the details of the Project, which were later agreed upon with the GOK. This Pilot Project for Introduction of Franchise System and Heightening of Public Awareness (hereinafter referred to as “PP”) will be carried out as one of activities to develop capacity of NCC personnel and finally to expand the waste collection and transportation services in Nairobi City.

II.A.3 Principles of the Pilot Project

The revised master plan advises that the franchise system for waste collection and transportation in the city should be introduced through a stepwise and gradual manner to avoid the long-term contract risks. In addition, the area subject to the pilot project selected based on a zoning concept is the bottom line to carry out the PP. To execute the franchise system well by assuring reasonable profit of PSP, the zone covered with the PP should be decided in consideration of the internal cross-subsidy system where revenue from high-income areas is transferred to the fund for the provision of solid waste management services in low-income areas is introduced.

II.A.4 Objective of the Pilot Project

The objective of the Pilot Project (PP) is therefore to collect data and information, and then identify problems and necessary measures for expansion of the newly introduced system into the waste collection and transportation in Nairobi City in order to operate, maintain and monitor the franchise system on a long term basis.

B. RESPONSIBILITIES OF THE FRANCHISEE

II.B.1 Target Waste to be Collected and Transported

The Franchisee shall collect, transport and dispose waste discharged from the following sources:

- i) Households;
- ii) Restaurants;
- iii) Hotels;
- iv) Shops;
- v) Offices;
- vi) Schools (both Private and Public);
- vii) Public market (Kangemi);
- viii) Other Public facilities (Parks, Social halls, Churches, etc.);
- ix) Road sweepings;
- x) Carcass of animals on the streets; and
- xi) Hedge and grass trimmings.

II.B.2 Road Sweeping

Road sweeping in all the roads in the pilot area will be as per guidelines provided by the technical officer in charge of solid waste management.

II.B.3 Waste Collection Time and Frequency

The Franchisee shall inform the customers of their collection schedule prior to the commencement of the operation. In addition, collection and transportation shall be conducted at least 2 times a week for residential areas, but collection from any other source will be done based on need and call. Waste disposal will only be done between 6 a.m. to 6 p.m.

II.B.4 Waste Bags and Containers

The County Government has adopted three colour coding system for waste containment. In this respect, the Franchisee shall provide appropriate number of liner bags or containers to their clients in three colours as detailed below:-

- | | | |
|--------------------------------|---|---------------------|
| i) Green liner bag/container | : | Organic waste |
| ii) Blue liner bag/ container | : | Plastics and Papers |
| iii) Brown liner bag/container | : | Others |

Except for waste under **items (vii & x) of Clause II.B.1 above** where, the franchisee can innovate any other best way of containing.

Information including PSP Name, logo, Address, Phone number and any other that may be required from time to time must be clearly printed or marked on one side of the liner bags and the containers. For liner bags, the franchisee will have to provide those of at least 80 micron thickness measuring 70 cm by 100 cm. For the containers, the following will suffice depending on the needs of the clients: 70 litres; 120 litres; 240 litres and 360 litres.

The Franchisee shall prepare the appropriate number of liner bags or containers before the commencement of the PP and present one of them as a sample to NCC at least one month before the commencement for NCC's approval.

II.B.5 Waste Charges

The Franchisee shall be responsible for collection of waste charges that will be set up depending on sources of discharged waste. The specific waste charges for each category and the method of collection shall be clearly described in the Financial Proposal as prescribed in **Clause 1.E.9** and Technical Proposal, **Clause 1.E.8** and respectively. The category that the Franchisee shall specify the respective waste charges in the technical proposal shall cover but not limited to the following:

- i) Households (Kilimani and Kileleshwa);
- ii) Households (Kangemi);
- iii) Restaurants, Hotels, Shops, Offices, Private school in Kilimani and Kileleshwa;
- iv) Public market (Kangemi); and
- v) Public facilities (Public school, Social halls, Government Offices, etc.).

II.B.6 Franchise Fee

The Franchisee shall pay the Franchise Fee at fifteen percent (15%) of current contractor's total income of waste collection and transportation contract to the Procuring Entity every three month after the operation.

II.B.7 Unit Franchise Fee

For the purposes of this tender document, Unit Franchise Fee will be determined as fifteen (15%) of current contractor's income calculated from waste charge as indicated in **Schedule 10**.

II.B.8 License Fee

The Franchisee shall pay the following license fees to the Procuring Entity at the commencement of the operation:

- i) Security Bond Kshs. 500,000
- ii) Policy Document
- iii) Single Business License
- iv) Waste collection and transportation permit
- v) Any other legal payment deemed necessary

II.B.9 Ownership of Segregated Recyclable Waste

The Franchisee will have ownership of any recyclable waste segregated at source or by the Franchisee.

II.B.10 Duration of Franchise Contract

Duration of the contract will be three (3) years; that is, it starts **from August 2014 and ends up to July 2017**. If the Franchisee does not perform well, the Procuring Entity has the right to terminate the Contract.

II.B.11 Submission of Reports

The Franchisee shall submit two (2) kinds of reports to the Procuring Entity as shown in the following contents and deadlines:

- i) Monthly Report

- a) Contents of Monthly Report should include the number of contracted households, commercials, public institutions, and so on, the amount of waste to be collected and transported, the amount of collected waste charges for each category, collection efficiency (the number of customers who have paid for the waste charges divided by the number of total contracted customers), claims from customers and NCC, a plan for the next month, and comparison between records of the previous month and this month.
 - b) The Monthly Report shall be submitted on and before 10th of every month to the Director of Environment.
- ii) Annual Report
- a) Contents of Annual Report should include all information of Monthly Report with analysis of the monthly projection of each category. In addition, a balance sheet, statement of profit and loss, cash flow statement for the respective year shall be made and attached in the Annual Report. Based on these financial statements, the Franchisee shall conduct Break-Even Point Analysis and state its result in the Report. All claims shall also be presented in the Report clearly in categorizing into main issues with their responses and measures to prevent from receiving the same claims in the future.
 - b) The Annual Report shall be submitted within 10 days after end of the Contract period to the Director of Environment.

II.B.12 Establishment of Complaint and Public Liaison Office

The Franchisee shall establish and operate a complaint and public liaison office as stated in **Clause IV.9, Special Conditions of Contract**.

II.B.13 Status of the Current Authority Letter (Existing License)

Any authority letter for waste collection in Kilimani, Kileleshawa and Kangemi will be expired on 31st December 2013 as mentioned in the authority letter, and the other authority letter will be issued to extend the expiration date until the commencement of the operation. No PSP except for the Franchisee shall implement the waste collection and transportation work in these areas after the expiration date.

C. UNDERTAKINGS OF NAIROBI CITY COUNTY IN THE PILOT PROJECT

II.C.1 Monitoring for Non-Licensed PSP

Any PSPs operating in the PP areas after the implementation of the PP will be strictly revoked their authority letter and will be announced on public. NCC will make all possible efforts to monitor and inspect non-licensed PSPs in order to secure the exclusive right of the Franchisee. Three (3) divisional supervisors and one (1) enforcement officer will be stationed in each zone to carry out the monitoring and inspection, respectively.

II.C.2 Penalty for Offender/ Violator

Any resident who commit illegal dumping of waste will be charged as fine at the range of Kshs. 500-100,000 by the Procuring Entity.

II.C.3 Public Awareness of the Franchise System

The Procuring Entity will conduct the following public awareness activities for the residents of the PP areas:

- i) Stakeholders meetings;
- ii) Advertisements in newspapers, TV or radio;
- iii) Distribution of flyers, leaflets, handbills and so on; and
- iv) Clean up campaigns.

II.C.4 Supporting CBO's Activities

The Procuring Entity will consult CBOs to succeed the PP; for example, the Procuring Entity will support CBOs to promote the use of designated liner bags to citizens.

SECTION III GENERAL CONDITIONS OF CONTRACT

III.1 Definitions

In this Contract the following terms shall be interpreted as indicated:

- i) "Bags" means standardised, branded plastic, nylon, or burlap sacks designed to contain SOLID WASTE with sufficient wall strength to maintain physical integrity of the container when lifted by the opening. Total weight of a BAG and its contents shall not exceed 15 kilograms.
- ii) "Bankruptcy" means a party's inability to pay its debts as they mature.
- iii) "Bundle Waste" means tree parts, shrubs, brush trimmings, newspapers, magazines, cartons or other SOLID WASTE securely tied as a package not exceeding 1 meter in length or 15 kilograms in weight.
- iv) "Contractor" means the individual, firm, partnership, joint venture, corporation or association performing refuse collection, transportation and disposal under Contract with the Nairobi City County.
- v) "Contractor Staff" mean all personnel specifically designated by the Contractor to be responsible for delivering services under this AGREEMENT, including SOLID WASTE collection workers, vehicle drivers, workshop mechanics and their supervisors.
- vi) "Construction or demolition debris" means waste building materials resulting from construction, remodelling, repair, or demolition operations, with sights or volumes greater than those allowed for Bags, Bundle waste, or Dustbins.
- vii) "Corrupt Practice" means the offering, giving, receiving or soliciting of any thing of value to influence the action of a public official in the procurement process or in Contract execution;
- viii) "Dead Animals" means animals or portions thereof equal to or greater than 5 kilograms in weight which have expired from any cause, except those properly slaughtered or killed for human consumption.
- ix) "Default Notice" means written notice from the Council to the Contractor that there has been a default in performance of the services required under this agreement.
- x) "Disposal site" means a designated refuse depository for the processing or final disposal of refuse including but not limited to sanitary landfills, transfer stations, incinerators and waste processing separating centres, licensed, permitted or approved by all governmental bodies and agencies having jurisdiction.
- xi) "Fraudulent Practice" means a misrepresentation of facts in order to influence a procurement process or the execution of a Contract to the detriment of the procuring entity, and includes collusive practice among Bidder (prior to or after Bid submission) designed to establish Bid prices at artificial non-competitive levels and to deprive the procuring entity of the benefits of free and open competition.
- xii) "Refuse" means discarded waste materials in solid or semi liquid state, consisting of garbage, rubbish or a combination thereof.
- xiii) "Hazardous Waste" means waste which is toxic, flammable, corrosive, radioactive, explosive or otherwise dangerous in accordance with definitions, established by the National Environment Management Authority (NEMA), and

shall also include motor oil, diesel fuel, gasoline (petrol), paint, solvents, dry cell and vehicle batteries, pesticides, and infectious or otherwise hazardous medical wastes from hospitals and clinics, metallic and/or oily sludges or solvents from commercial and industrial establishments, batteries, asbestos materials, pesticides, radioactive wastes, etc.

- xiv) "Month" means all the calendar days of the month.
- xv) "Plant" means all vehicles, equipment, animals, and facilities to be acquired or leased by the Contractor for purposes of performing the services required under this agreement.
- xvi) "Premises" means any land, building, and/or structure, or portion thereof.
- xvii) "Regulatory framework" means any laws, regulations, decrees and policies officially developed and approved by the government, including the local, and central government, for the purposes of regulating Solid Waste generation, collection, transport, recycling, reuse, treatment, and disposal.
- xviii) "Sanction" means penalties to be paid by the Contractor to the Council through adjustments in payments by the Council to the Contractor or otherwise, upon issuance by the Council of a Default Notice.
- xix) "Solid waste" means all waste material generated by households, institutions, commercial establishments, and industries and discharge from their premises for collection; all litter and clandestine piles of such wastes; and includes street litter, street sweepings, drain cleansings, Bulk Waste, Bundle Waste, dead animals and other waste materials, except Hazardous Waste.
- xx) "Week" means 7 consecutive days starting on Monday and ending on the following Sunday.
- xxi) "Zone" means designated area of service as part of this service agreement.
- xxii) "The Contract" means the agreement entered into between the Procuring entity and the Bidder, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.
- xxiii) "The Contract Price" means the price payable to the Bidder under the Contract for the full and proper performance of its Contractual obligations.
- xxiv) "The Procuring Entity" means the Nairobi City County.
- xxv) "The Bidder" means the individual or firm supplying the services under this Contract.
- xxvi) "Force Majeure" means an event which is beyond the reasonable control of a Party and which makes a Party's performance of its obligations under the contract impossible or so impractical as to be considered impossible under the circumstances.

III.2 Application

These General Conditions shall apply in all Contracts made by the Procuring Entity for the procurement of goods.

The standard general conditions of Contract for procurement of goods and services (issued by the Public Procurement Directorate) shall apply to this Contract unless the same have been expressly modified by conditions of particular application herein.

III.3 Applicable Law

The law governing the Contract shall be the laws of Kenya respectively unless otherwise stated.

III.4 Language

The language of the Contract shall be the English language unless otherwise stated.

III.5 Taxes

The Contractor shall in respect of this Contract assume full and exclusive liability for payment of all taxes, duties, levies, charges and contributions, of any nature whatsoever that are from time to time approved by either:

- i) The Government of Kenya or
- ii) Any other fiscal or other authority whatsoever, in respect of:
- iii) Employees or agents of the Contractor and its subcontractors and
- iv) The gains of the Contractor or its subcontractors arising directly or indirectly out of the performance of the services.

The Contractor hereby covenants and undertakes to defend indemnify and hold harmless the Procuring Entity from any and all claims, suits, costs, liabilities, judgments, fines, penalties, demands, loss or damage including any and all expenses, disbursements, costs, legal fees, sums and amounts which the Procuring Entity suffers, incurs or is put to result from or in any way connected with any assessment or imposition for which the Contractor is liable.

III.6 Force Majeure

If the performance of any obligations on the part of the selected Bidders shall be prevented or delayed by FORCE MAJEURE (which term shall include but not limited to weather, strikes, lock-out, boycotts, warlike actions, civil commotions, riots, embargoes, revolutions, earthquakes, fire, explosions catastrophe, governmental order or regulation, act of God or other similar contingency beyond the reasonable control of the Contractor or the Procuring Entity), the Bidder shall inform the Procuring Entity of the occurrence of such an event and thereupon his obligation(s) shall be suspended for as long as the said circumstances continue to exist. The parties of this Contract shall make every effort to minimize the effect of any of the above mentioned circumstances.

The start and termination of FORCE MAJEURE must be reported within the day of occurrence of the event, otherwise this event will not be recognized as FORCE MAJEURE.

The event of FORCE MAJEURE must be certified by official documents from relevant Government Departments.

III.7 Assignment

The Bidder shall not assign, in whole or in part, its obligations to perform under this Contract, except with the Procuring Entity's prior written consent.

III.8 Termination for Default

The Procuring Entity may, without prejudice to any other remedy for breach of Contract, by written notice of default sent to the Bidder, terminate this Contract in whole or in part:

- i) If the Bidder fails to deliver any or all of the services within the period(s) specified in the Contract, or within any extension thereof granted by the Procuring Entity;
- ii) If the Bidder fails to perform any other obligation(s) under the Contract and
- iii) If the Bidder, in the judgment of the Procuring Entity has engaged in corrupt or fraudulent practices in competing for or in executing the Contract.

If the Contractor's employment is terminated and is not reinstated, the Procuring Entity shall:

- i) Cease to be under any obligation to make further payment until the costs, loss and / or damage resulting from or arising out of the termination of the Contractor's employment shall have been calculated and provided such calculations shows a sum or sums due to the Contractor;
- ii) Be entitled to exercise a lien over any of the equipment belonging to the Contractor for any sum due hereunder or otherwise from the Contractor to the Council;
- iii) Be entitled to employ and pay other persons to provide and complete the provision of the services or any part thereof and to use all such Contractors' materials, clothing, equipment, vehicles or other goods for the purposes thereof; and
- iv) Be entitled to deduct from any sum or sums which would have been due from the Council to the Contractor under that Contract or any other Contract or be entitled to recover the same from the Contractor as a debt, any loss or damage to the Council resulting from or arising out of the termination of the Contractors' employment. Such loss or damage shall include the reasonable cost to the Council of the time spent by its officers in terminating the Contractors employment and in making alternative arrangements for the provision of the services or any part thereof.

III.9 Termination for Insolvency

The Procuring Entity may (without prejudice to its other rights) terminate this Contract forthwith by notice in writing to the Bidder if a voluntary agreement is approved or an administration order is made, or a receiver or administrative receiver is appointed over any of the Bidder's assets or an undertaking or a resolution or a petition to wind up the Bidder's company is passed or presented (other than for the purposes of amalgamation or reconstruction) or if any circumstances arise which entitle the court or creditor to appoint a receiver, administrative receiver or administrator or to present a winding up petition or make a winding up order.

III.10 Resolution of Disputes

The Procuring Entity and the Bidder shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

If, after thirty (30) days from the commencement of such informal negotiations both parties have been unable to resolve amicably a Contract dispute, either party may require adjudication in an agreed national or international forum, and/or internal arbitration.

III.11 Change of Ownership

In the event that the Contractor's business assets are sold, the Nairobi City County maintains the right to hold original owner solely liable. If, however, the Procuring Entity determines that the new ownership can adequately and faithfully render the service called for in this Contract for the remaining term of the Contract, then the Procuring Entity may elect to execute novation, allowing the new ownership to assume the rights and duties of this Contract and releasing the previous ownership of all obligation and liability. The new ownership would then be solely liable for any work and/or claims attendant to this agreement.

III.12 Illegal and Invalid Provision

Should any term, provision or other part of this Contract be declared illegal it shall be excised and modified to conform to the appropriate laws or regulations. Should any term, provision or other part of this Contract be held to be inoperative, invalid or unenforceable, then such provision or portion thereof shall be reformed in accordance with applicable laws or regulations. In both cases of illegal and invalid provisions, the remainder of the Contract shall not be affected but shall remain in full force and effect.

III.13 Joint and Several Liability

If the Contractor is comprised of more than one individual, corporation or other entity, each of the entities comprising the Contractor shall be jointly and severally liable.

III.14 Binding Effect

The provisions, covenants, and conditions in this Contract apply to bind the parties, their legal heirs, representatives, successors, and assigns.

III.15 References

Bidders must include a list of references with respect to their general reputation of the bidder along with the bidder's skills and qualifications necessary to diligently and properly perform the work in accordance with the Contract. References are to be from clients to whom the Proponent has supplied similar services. At least three (3) references, complete with the person to contact, their telephone number, and the type of products/services provided should be included with the Bid. Please attach either completion certificates or letter of reference from respective client (e.g. Local authority, other government agencies, Residents Association, Hotels or Real estate management etc). Please refer to **Schedule 3, Section V Schedule of Requirements**.

The Procuring Entity reserves the right to check the references of any and all Bidders at any time during the evaluation process. References may be contacted by phone and/or in writing and any information received will be used to assist the evaluation committee to determine if a Bidder is compliant with this bid document.

The Procuring Entity will not enter into a contract with any Bidder whose references, in the opinion of the Procuring Entity, are found to be unsatisfactory.

SECTION IV SPECIAL CONDITIONS OF CONTRACT

IV.1 Office Facilities

The Bidder is required to takeover solid waste collection, transportation and disposal services functions from the Procuring Entity for the specific Zone. The bidder **must** maintain a local telephone number herein referred to as a customer care number physical address, e-mail address and qualified attendants as may be necessary to ensure communication between the Procuring Entity and Bidder and to receive and process complaints and/or to receive instructions and directions from the Procuring Entity.

IV.2 Liquidated Damages

If the Bidder fails to deliver any or all the services within the period(s) specified in the Contract, the Procuring Entity shall, without prejudice to its other remedies under the Contract, demand from the Contract price liquidated damages sum equivalent to 0.5% of the delivered price of the delivered services per month up to a maximum deduction of 10% of the delivered services. After this the Procuring Entity may consider termination of the Contract.

IV.3 Project Manager

The Bidder shall assign a Project Manager who is responsible for implementation of the PP entirely. The Project Manager shall carry out the PP as a representative of the Bidder on a professional manner including managing and supervising all personnel related to the PP, preparing and submitting the required reports to the Procuring Entity, compiling and responding all the claims, and developing measures to improve their daily operation, but not limited to these actions herein.

IV.4 Supervisors / Drivers

- i) The titles, agreed job descriptions, minimum qualifications, and estimated periods of engagement in the carrying out of the Services of the Bidder's are in the Key Personnel listed by titles as well as by name in **Schedule 4, Section V Schedule of Requirements** of the Bid Document will be approved by the Procuring Entity.
- ii) All drivers must have a current driver's licence with minimum driving of 5 years. The Procuring Entity reserves the right to discontinue the use of any driver for failure to perform in a satisfactory manner.
- iii) The Procuring Entity reserves the right to reject the contractor's personnel who, in the Procuring Entity's judgment, are not adequately qualified to perform the work or for just cause (lack of courtesy, profanity, repeated lack of compliance with operating procedures, unsafe operation). The Contractor shall make arrangements for a replacement.
- iv) The Contractor's employees shall consistently show the highest levels of customer services and courtesy.
- v) The Contractor's employees shall display professional attitudes and behaviour, and be dressed in clean uniforms at and other relevant protective clothing all times.

IV.5 Vehicles and Equipment

- i) The Contractor's vehicles and equipment used for performing services shall be adequate and mechanically sound to perform the services required by the Contract as may be reasonably determined by the Procuring Entity from time to time.
- ii) The vehicles must fully contain the waste, eliminating potential nuisance such as odours, windblown litter and uncontrolled leachate discharge.
- iii) For special collections of solid waste, including bulky waste, garden wastes and large animal carcasses the Contractor shall provide suitable vehicles such as flatbeds or tippers with appropriate lifting hoists as necessary.
- iv) The Contractor shall paint all vehicles used for the routine collection of non-hazardous solid waste with a band on cabin depicting the colour assigned to the respective Zone and provide uniforms and other relevant protective clothing to the workers. The Contractor's name, telephone number, and vehicle number shall be visibly displayed on all collection vehicles in letters and figures not less than fifteen (15) cm high.
- v) As vehicles and equipment become fully depreciated or reach the end of their useful life, the Contractor shall immediately purchase, rent or lease vehicles and equipment to satisfy such requirements or replace such retired vehicles and equipment.
- vi) The Contractor shall ensure that all vehicles and equipment are registered and operate in compliance with all applicable laws and regulations.
- vii) The Contractor shall keep all vehicles and equipment used for performing services in good repair, appearance and sanitary condition. All vehicles shall be washed and thoroughly disinfected every day.
- viii) Each vehicle shall have at least one broom and shovel at all times to clean up solid waste that may have spilled or otherwise scattered during the process of collection and transportation.
- ix) All lights, horns, warning devices, mufflers, fuel tanks and emission controls on said vehicles shall be kept operable at all times, with an average fleet downtime of no more than twenty five percent. A sufficient supply of spare parts shall be kept on hand to ensure the timely and continuous fulfilment of this Contract.
- x) When vehicles are down for maintenance or repair it shall be the Contractor's obligation to provide a replacement vehicle from the spares in its fleet or a comparable replacement through rental or leasing arrangements and in cases where the colours are different, the contractor shall inform the employer accordingly.
- xi) All vehicles and equipment shall be operated by qualified and licensed operators.
- xii) All vehicles shall be sufficiently secure and provided with tarpaulin cover so as to prevent any spilling or littering of solid waste. No vehicle shall be wilfully overloaded.
- xiii) The Contractor shall provide all collection vehicles with drainage tanks, so that the leachate leaking from the solid waste are captured and contained on the truck and spillage of such leachate to the streets is prevented. The leachate captured

and held within the drainage tanks are to be emptied only at the officially designated disposal site.

- xiv) All vehicles shall maintain a manifest of time and movement, in all areas of collection including: departure time from the parking area at the start of work, arrival time and departure from the officially designated discharge location, site of collection and arrival time at the parking area at the end of work. Trucks which have their loads weighed or measured shall have this data included in the vehicle manifest. Downtime and nature of any breakdown and repair activities shall also be recorded in the manifest. Data from the trucker books shall be collated and presented in a monthly report of service delivery from the Contractor to the Department of Environment, NCC. In addition the Department shall have access to the trucker books upon demand.
- xv) All collection vehicles shall have some form of communication device on board (cell phone) to enable close supervision of the service between the Procuring Entity and the Contractor.
- xvi) The Contractor will ensure that waste is stored in standardized branded bags in their areas of operation for onward transportation to the final disposal site.
- xvii) All vehicles/plants used for collection must be taken for inspection by the Chief Mechanical and Transport Engineer, Ministry Public Works. The bidder will be required to submit a mechanical inspection report by Chief Mechanical and Transport Engineer, Ministry Public Works to ascertain their road worthiness and load carrying capacity as per of this bid.
- xviii) All vehicles must have a 15cm band on the cabin depicting the colour assigned to the respective Franchise Zone 7.
- xix) All vehicles/ plants used for collection must be subjected to inspection by the Chief Mechanical and Transport Engineer – Ministry of Public Works during the contract duration to ascertain their roadworthiness.

IV.6 Contract Performance Monitoring

The Contractor shall allow the Procuring Entity to have access at all times to inspect the work being conducted under this agreement, to inspect all records and documents maintained by Contractor regarding work performed under this agreement, and to inspect the plant, including spare parts inventories, stores, and workshop repair facilities.

The Contractors shall at all times work under the supervision of the Procuring Entity staff.

IV.7 Monitoring

The Procuring Entity has responsibility for monitoring and controlling the services conducted under this agreement.

IV.8 Cooperation

All works conducted under this agreement shall be subject to performance monitoring by the Procuring Entity. The Contractor shall cooperate fully with the efforts of the Procuring Entity to monitor and control the services.

IV.9 Complaints

The Contractor shall receive and respond to all complaints regarding services provided under this Contract within 72 hours as contained in the Procuring Entity service charter.

Any complaints received by the Procuring Entity will be directed to the Contractor's office. Should a complaint go unresolved for longer than two (2) days, the Procuring Entity will have the right to demand an explanation or resolution to its satisfaction.

The Contractor shall establish and operate a complaint and public liaison office within its assigned Franchise Zone 7 of service. The Contractor shall also establish and operate a telephone line with a full time answering service or machine at the said office for receipt of complaints and public comments. Said office shall have at least one responsible person in charge and present during collection hours and shall be open during all collection hours.

IV.10 Service Coverage Area

The works are located in **Franchise Zone 7 (Kilimani, Kileleshwa, Kangemi)** within the jurisdiction of the Nairobi City County as **the location map (Appendix 2)**.

The above Zone only indicates the TOR associated with this Contract and the Director of Environment may where necessary substitute the Zone with others within the jurisdiction of the County without substantially altering the overall scope of the works. The contract price shall be deemed to include for such changes and payment for measured works carried out on such alternative Zones shall be made using the relevant rates and prices entered in the Bills of Quantities. The Contractor shall be fully responsible for the cleanliness of the Zone, including removal of all non-hazardous solid wastes as required in **Clause II.B.1**.

IV.11 Number of Trips for Normal Beat

The Contractor shall provide a minimum number of 1 trip per day per Zone 7 for the fleet of vehicles under the normal beat.

IV.12 Hours of Services

The Contractor will work for 8-12 hours a day from Monday to Saturday and any other emergency that may occur subject to adequate Notice.

IV.13 Holidays

Collection service shall be provided on all holidays including Christmas Day.

IV.14 Routes and Schedule of Collections

The Contractor shall provide the Procuring Entity with maps and schedules of collection routes as presented in the Work Plan and keep such information current at all times. In the event of changes in routes or schedules that will alter the day of pickup the Contractor will notify the Procuring Entity accordingly.

Not less than fourteen (14) days prior to commencing service, the Contractor agrees to furnish for the Procuring Entity's approval the initial schedules and maps of all routes to be used in serving the area as specified in this Contract.

Any changes in routes / or schedules will also be subject to the Procuring Entity's approval which will not be unreasonably withheld.

IV.15 Containment

The Contractor shall cover and properly contain all solid waste loads with tarpaulins, nets or other means as appropriate to the type of vehicle or equipment being used during haul of solid waste from the collection service area to the disposal site.

IV.16 Unforeseen Occurrences

The Director of Environment or duly authorised representative shall be at liberty to call upon the Contractor to urgently attend to any emergency or unforeseen occurrence, **Clause III.6, General Conditions of Contract** notwithstanding.

IV.17 Identification

The Contractor shall provide all Contractor staff with identification cards, with their name, photo and identification number and require them to carry the said identification cards at all times for monitoring purposes. When required to do so by any of the Department of Environment's staff, the Contractor's staff shall submit their identification cards for inspection.

IV.18 Uniforms

The Contractor shall provide readily recognizable, brightly coloured shirts (or vests or waist coats) and trousers of a single design and colour to all its workers, to be worn at all times when performing services under this agreement, so that they can be readily observed and their performance can be readily monitored. Uniforms shall be replenished as they become worn or damaged.

IV.19 Protective Wear

The Contractor shall provide protective shoes and gloves to all workers, for use at all times during the performance of services under this agreement.

IV.20 Liability and Indemnity

The Contractor shall hold harmless, defend and indemnify the procuring entity from any claim or damage arising from the actual or alleged negligence of the Contractor in the performance of services and from willful or criminal acts allegedly occurring during services, including the times when the Contractor's vehicles are in transit.

IV.21 Insurance

The Contractor's vehicles shall bear vehicle insurance and general liability insurance coverage with insurance companies reasonably acceptable to the procuring entity throughout the term of this agreement and throughout any extension or renewal thereof, providing for replacement value in the case of the theft or damage and liability in the case of accident.

IV.22 Damage to Public or Private Property

Extreme care shall be taken to safeguard all existing facilities, site amenities, sewerage systems, vehicles, etc. on or around the job site. Damage to public and/or private property shall be the responsibility of the Contractor and shall be repaired and/or replaced at no additional cost to the Procuring Entity.

IV.23 Certificate of Insurance

Prior to the commencement date under this agreement, certificates of insurance or verified copies of all insurance policies shall be provided to the Procuring Entity, together with a certificate of the insurer that the policy or policies are in full force and effect and that the same will not be altered, amended or terminated without thirty (30) days written notice having been given to the Procuring Entity.

All insurance policies shall be renewed at least fifteen days before expiry.

IV.24 Personnel

The Contractor warrants that it has and will throughout the Contract have the experience and capability including sufficient and competent project manager, supervisors and other personnel to efficiently and expeditiously perform the services. If in the opinion of the Procuring Entity there is any inadequacy in the number or competence of persons engaged in performing the services, then the Contractor shall on request at no extra cost to the Procuring Entity provide additional or alternative competent persons.

The Contractor shall ensure that all Contractor staff employed under the Contract are at all times properly and sufficiently qualified, trained, competent, careful, skilled, honest, experienced, instructed and supervised as the case may be with regard to the services and in particular:

- i) The task or tasks such persons has to perform;
- ii) All relevant provisions of the Contract;
- iii) All relevant policies, rules, procedures and standards of the Procuring Entity;
- iv) All relevant rules, procedures and regulatory requirements concerning health and safety at work;
- v) Fire risks and fire precautions;
- vi) The need to maintain the highest standards of hygiene, courtesy, integrity and consideration; and
- vii) The need to recognise situations which may involve actual or potential danger to personal injury to any person at any location and where possible, without personal risk, to make safe such situations.

The Procuring Entity shall have the right to make a complaint regarding any employee of the Contractor who violates any provision hereof or who is wanton, negligent, or discourteous in the performance of his/her duties.

IV.25 Supervisor

The Contractor shall provide four (4) permanent supervisor of work dedicated just to the Franchise Zone. The Contractor shall schedule route supervision from Monday to Sunday providing relief personnel coverage when a permanent rout supervisor is off.

IV.26 Defaults in Performance of Service

At any times after the commencement date of the Contract the Procuring Entity may investigate each case where the Contactor has failed to properly perform the services in accordance with the provisions of the Contact. Where the Procuring Entity is satisfied that in any particular case the Contractor has failed to perform the services completely in accordance with the provisions of the Contract, the Procuring Entity shall be entitled to terminate the Contract.

In addition, where the service which has not been performed in accordance with the provisions of the Contract is in the opinion of the Procuring Entity, of such a type or provided in such a frequency that the termination would be inappropriate and Procuring Entity shall be entitled to issue a default notice for rectification.

If the Contractor fails to remedy the services deficiency which is the subject of a rectification notice, the Procuring Entity shall be entitled to issue a termination notice.

Without prejudice to the generality of the foregoing, the following matters shall be included in the types of service deficiencies for which notices may be issued:

- i) Failure to properly collect, in compliance with the schedule, any solid waste within the Zone;
- ii) Failure to clear spillages;
- iii) Failure to clear backlogs of waste;
- iv) Failure to perform for a period of 3 months (90 days) continuously;
- v) Spillage of garbage on the roads during transportation; and
- vi) Failure to use standardised/ branded bags.

The time periods during which the Contractor is to remedy deficiencies shall be reasonable having regard to, inter alia, the nature of and the frequency of the services. Each time period shall commence when the Contractor is initially notified and shall require the Contractor to effect the following in respect of any deficiency involving or associated with collection of solid waste.

- i) In respect of each notification made to the Contractor by 1.00 p.m. on any working day the Contractor shall remedy each deficiency by 6.00 p.m. on the same day **Clause IV. 12** above notwithstanding.
- ii) In respect of each notification made to the Contractor after 1.00 p.m. on any working day the Contractor shall remedy each deficiency by 1.00 p.m. on the following working day.
- iii) Each notice may refer to one or more than one elemental service deficiency.
- iv) All notices shall be recorded and used by the Procuring Entity in determining the Contractor's overall services performance and shall also be used in determining financial penalties and whether the Procuring Entity may terminate the Contract.

IV.27 Financial Penalties

For the purpose of assessing whether financial penalties are recoverable by the Procuring Entity from the Contractor the following method shall be used:

Each notice issued shall correspond to the following default points.

Default Notice:	2 points
Termination notice:	3 points

Default Points in any one month	Increase of monthly Franchise Fee
0-10	Nil
11-20	0.5%
21-30	1.0 %
31-40	1.5 %
41-50	2.0 %

IV.28 Tipping Charges

All vehicles delivering garbage to the designated dumping site **MUST** pay the approved tipping charges prevailing at the time. Tipping charges will be the responsibility of the Contractor.

IV.29 Vehicles Identification

The Contractor shall submit list of all vehicles to be used to the office of the Director of Environment. In the event that the Contractor introduces new vehicles, express

authority must be given by the Director of Environment in **writing**. The Contractor shall indicate vehicle characteristics, i.e. copy of the log book.

IV.30 Dumping Site

For purposes of this contract the designated dumping site is Dandora. Waste disposal will only be done between 6 a.m. and 6 p.m. In the event of any relocation within the duration of the contract, the same will be communicated to all the Contractors in writing. New rates shall then be negotiated and mutually agreed upon between the Contractor and the Procuring Entity to reflect the change in distance.

IV.31 Complaints

All complaints by the Contractors shall be directed in **writing** to the Director of Environment.

IV.32 Issuance of Policy Documents and Fees

- i) The Bidder will be issued with one Bid document. A non-refundable fee of Kshs. 5,000 cash or bankers cheque payable to the Nairobi City County shall be paid for the document.
- ii) All documents, which have been issued for the purpose of Biding, will remain the property of Nairobi City County.
- iii) Documents will be collected from the Director of Procurement.

IV.33 Contractor's Obligation

All eligible contractors will be required to work within the Nairobi City County by-laws and within any other administrative arrangement put in place by the Procuring Entity.

All eligible contractors will be required to comply with any other existing legislation governing the waste management sector.

IV.34 Machine Operations

- i) This is not a mandatory requirement for this Contract.
- ii) The scheduling of the machine operations will be at the discretion of the Director of Environment.
- iii) Machine operations will be executed as and when **necessary** in the Zone. Before such a decision is made, written request from the zonal supervisors in respective zone will have been received by the Director of Environment.

IV.35 Development of Final Work Plan

The Contractor is required to submit a **Final Work Plan** within thirty (30) days of the Contract Signing Date. The Final Work Plan should address each of the activities as prescribed for the Work Plan in the technical proposal, **Schedule 6, under Section V Schedule of Requirements** and incorporate refinements and modifications discussed and agreed upon between the Procuring Entity and the bidder prior to the execution of the Contract.

SECTION V SCHEDULE OF REQUIREMENTS

A. QUALIFICATION INFORMATION INDEX

The following particulars are to be provided by the Bidder within the appropriate spaces provided, or on separate pages if necessary:-

Schedule 1	Particulars of Bidder
Schedule 2	Financial Status
Schedule 3	Reference
Schedule 4	Qualification and Experience of Key Personnel
Schedule 5	Office / Facilities/ Workshop
Schedule 6	Work Plan
Schedule 7	Experience of the Firm
Schedule 8	Certificate of Bidder's or Representative's Sufficiency of Bid Documents and Particulars
Schedule 9	Joint Venture and Sub-Contracting
Schedule 10	Financial Details and Proposed Waste Charges
Schedule 11	Form of Bid
Schedule 12	Confidential Business Questionnaire
Schedule 13	Bid Security Form
Schedule 14	Performance Security Form
Schedule 15	Form of Agreement

Note: Failure to complete all these Schedules in full or the giving of false information may invalidate the Bidder and cause forfeiture of the Bid Bond. Particulars are to be entered in the appropriate place on the following pages or separate pages additionally.

SCHEDULE 2 FINANCIAL STATUS

2.1 Name and Address of Bankers (State Branch and Postal Address)

.....

2.2 Name of Account held at that Branch and Account Number

.....

2.3 Bidder to sign here authorising his Bank Manager to release details of the Account to City Treasurer, Nairobi City County, P.O. Box 30037 Nairobi, or his authorised representative, upon production of this signed authority

.....
.....
.....
.....

2.4 Nominal Share Capital

2.5 Paid up Share Capital

2.6 Number of shares issued

2.7 Annual Turnover on last audited accounts (**Attach a copy of audited Accounts**).....

2.8 Maximum value of supply/hire Contracts worked on concurrently within the last two years.

2.9 How many individual Contracts were represented in 2.8 above?

.....
.....
.....

2.10 Maximum value of all Bids worked on concurrently within the last two years

.....

2.11 How many individual Bids were represented in the answer 2.10?

.....

.....DateSignature of Bidder

SCHEDULE 3 REFERENCE

The Bidder shall submit a minimum of three (3) references related to recent projects within the past five (5) years that the Bidder was involved in. Each reference shall include a name, phone number, a contact person and description of services provided. **Please attach either completion certificates or letter of reference from respective client** (e.g. Local authority, other government agencies, Residents Association, Hotels or Real estate management etc).

1. Company Name:.....

Address:.....

Contact Name:.....

Telephone:.....

Description of services offered

.....

.....

.....

2. Company Name:.....

Address:.....

Contact Name:.....

Telephone:.....

Description of services offered

.....

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.....

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3. Company Name:.....

Address:.....

Contact Name:.....

Telephone:.....

Description of services offered

.....
.....
.....
.....

4. Company Name:.....

Address:.....

Contact Name:.....

Telephone:.....

Description of services offered

.....
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.....
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.....
.....

.....Date.....Signature of Bidder

SCHEDULE 4 QUALIFICATION AND EXPERIENCE OF KEY PERSONNEL

Position	Name	Academic & Professional qualifications	Years of Experience	Years of Experience in proposed position	Description of duties/ responsibilities
Project Manager					
Supervisor 1		Not Applicable (NA)			
Supervisor 2		NA			
Supervisor 3		NA			
Supervisor 4		NA			
Driver 1		NA			
Driver 2		NA			
Driver 3		NA			
Driver 4		NA			
Driver 5		NA			
Driver 6		NA			
Driver 7		NA			

Attach CV's and academic/ professional certificates

Note: The Bidder shall list in this schedule the key personnel he will employ from headquarters and from site office to direct and execute the work together with their qualifications, experience, position held and nationality. Attach CV's & certified copies of Certificates.

.....DateSignature of Bidder

SCHEDULE 5 OFFICE/FACILITIES/WORKSHOP

The Bidder shall SUPPLY details hereunder of its office, workshop and any other facilities and location which are proposed to be utilized in connection with the proposed contract. **Attach copies of title, lease or rental agreement as evidence of Physical Address.**

.....
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The Bidder shall SUPPLY details hereunder of its complaint and public liaison office which is proposed to be utilized in connection with the proposed contract. **Describe name, title and contracts of a person in charge of the office. Attach an organisational chart of the office.**

.....
.....
.....
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.....

.....DateSignature of Bidder

SCHEDULE 6 WORK PLAN

The Bidder shall describe details hereunder of a technical proposal that cover with the following two plans. **Add more pages to present fully descriptions of these plans. The detailed contents of each plan should be referred to Clause I.E.11.**

- (1) Comprehensive Waste Collection and Transportation Plan
 - (a) Organisation and allocation of collection and transportation crews
 - (b) Operation of the collection and transportation work with proper collection route maps (Attach a collection route map)
 - (c) Setting frequency of collection
 - (d) Collection method of waste charges
 - (e) Monitoring the performance under the implementation of the Pilot Project

- (2) Action Plans from the Signing of the Contract to the Commencement of the Pilot Project
 - (a) What kind of actions will be needed
 - (b) How these actions will be carried out
 - (c) When these actions will be made
 - (d) Who will be conducted these actions in order of appropriate time frame

SCHEDULE 7 EXPERIENCE OF THE FIRM

CLIENT NAME (name of company or organisation)	CLIENT CONTACT (contact persons name, address & phone number)	CONTRACT DESCRIPTION (type of work undertaken)	CONTRACT DURATION (commencement & completion dates)	CONTRACT VALUE (KSHS.)

.....DateSignature of Bidder

**SCHEDULE 8 CERTIFICATE OF BIDDER'S OR
REPRESENTATIVE'S SUFFICIENCY OF BID
DOCUMENTS, AND PARTICULARS**

1. This is to certify that I,

(Name of Bidder or his representative)

of this firm of.....

(Name of Bidder)

Studied and examined the Contract documents of

**BID FOR SOLID WASTE COLLECTION, TRANSPORTATION AND
DISPOSAL SERVICES IN FRANCHISE ZONE7.**

2. Having previously studied the Bid Document, I have made myself familiar with
all the local conditions likely to influence the works and the cost thereof.

Signed

(Bidder or his representative)

Date

3. I further certify that I have examined and inspected the samples required /
specifications /data necessary to properly formulate our Bid, made ourselves
familiar with the local conditions and availability likely to influence the Bid and
costs thereof; Examined and checked some documents as described various
documents as described in the paragraph numbered 2 of the Form of Agreement
and hereby confirm:

(i) That any discrepancies or ambiguities have been explained to our
complete satisfactions as witness the exchange of correspondence
between ourselves.

(ii) In the event that no correspondence is appended that all parts of the
documents are in agreement with each other.

(iii) That the information contained in the documents is accurate, adequate
for its specified duty or duties, and sufficiently detailed for use to prepare
a sensible programme of activities as appended to this Bid and to
adequately and correctly price our Bid.

- (iv) That all the goods specified herein are available or can be available in adequate time during the currency of the Bid in the grades and quantities shown in the document, and that goods inadequacies will only be accepted for granting of time extension in the event of circumstances arising under expected risks or due to any action or directive of Government affecting all known suppliers of the affected material within Kenya, due to the circumstances beyond the reasonable control of all being concurrently affected thereby.
4. It is hereby certified that the information given in Schedule of Requirements and/or appended to this Bid is given in good faith and in the belief that it accurately represents the affairs of the Bidder at the date for submission of this Bid. It is understood that false information given herein these Schedules may render this Bid liable for disqualification.
5. It is further confirmed that no law suit, criminal or civil, lies has ever lain against the Bidder corporately or against any director individually and that the Bidder corporately has never been associated with any company, taken into receivership or liquidation or has individually himself or herself never had a suit for bankruptcy filed against them.

DATED THIS DAY OF
20.....

SIGNATURE

.....

NAME (BLOCK LETTERS)

.....

IN THE CAPACITY OF

.....

DULY AUTHORIZED TO SIGN FOR AND ON BEHALF OF

.....
.....

OF (POSTAL ADDRESS)

.....

SCHEDULE 9 JOINT VENTURE AND SUB-CONTRACTING

The Bidder shall state in the table provided details of any joint venture and subcontractors which it proposes to use in performance of the CONTRACT. The naming of any proposed joint venture and subcontractor shall imply acceptance or approval by Nairobi City County and Nairobi City County's rights shall not be prejudiced by any statement as to prospective joint venture and subcontractors hereunder.

Name and Address of Joint Venture	Nature of Activity Joint Venture	Area of Work Joint Ventured

Name and Address of Sub Contractor	Nature of Activity Subcontracted	Area of Work Subcontracted

.....DateSignature of Bidder

SCHEDULE 10 FINANCIAL DETAILS AND PROPOSED WASTE CHARGES

SNo.	Description	Item	Amount in (Ksh.)
1	Financial Status (Audited accounts & Certified bank statement for at least 2 years: 2011/2012 & 2012/2013)	Turnover	
2	Proposed waste charge payable to franchisee by waste generators		
	(A) Collection from Households (Kilimani and Kileleshwa)	Charge per month collection	
	(B) Public facilities	Charge per liner bag collection	
	(C) Public market (Kangemi)	Charge per ton	
	(D) Collection from Households (Kangemi)	Charge per month collection	
	(E) Collection from Commercial Establishments	Collection per 70 litres container	
		Collection per 120 litres container	
		Collection per 240 litres container	
		Collection per 360 litres container	
TOTAL FOR A+B+C+D+E (Under SNo. 2 above)			
Basic Unit Franchise Fee= A+B+C+D+E Multiplied by 15%			

SCHEDULE 11 FORM OF BID

Date.....

Bid No.....

To.....

.....

.....

(Name and Address of Procuring Entity)

Gentlemen and /or Ladies

1. Having examined and understood the Bid documents in totality for the execution of the works as described therein, we, the undersigned, offer to execute, complete and maintain the whole of the said Works in conformity with the Conditions of Contract, Specifications, and Terms of Reference and in conformity with all Quality standards for the sum of Kenya Shillings

.....

.....

.....

.....

.....(in words)

Kshs..... (in figures) **being**

payment of Basic Unit Franchise Fee **to the Procuring Entity** as may be calculated in accordance with **SCHEDULE 10** above.

2. We acknowledge that the Appendix forms part of our Bid
3. We undertake, if our Bid is accepted, to deliver the said services in accordance with the special conditions of the Contract.
4. If our Bid is accepted, we will obtain the performance bond in a sum of Kshs.for the performance of the Contract, in the form prescribed by.....(procuring Entity).

5. We agree to abide by this Bid for a period of.....days from the date fixed for Bid opening in the instruction to Bidders and it shall remain binding upon us and may be accepted any time before the expiry of the period.
6. Until a formal Contract is prepared and executed, this Bid together with your written acceptance thereof and your notification of award, shall constitute a binding Contract between us.
7. We are fully equipped with equipment, vehicles and/or plant. Further, we are competent and have adequate Financial Resources and qualified personnel to execute the type of Works included in this bid. We are in a position to fulfil the said Contract in totality.
8. We understand that you are not bound to accept the lowest or any Bid you may receive.

Dated this..... dayof 2013

Name and Signature in the
capacity ofduly authorised

To sign Bid, for and on behalf of

.....

P.O. Box

SCHEDULE 12 CONFIDENTIAL BUSINESS QUESTIONNAIRE

You are requested to give the particulars indicated in part 1 and either Part 2(a). 2(b) or whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

Part 1 – General

Business Name

Location of business premises; Country/Town

Plot No..... Street/Road

Postal address Tel No.

Nature of Business.....

Current trade License No. Expiring Date

Maximum Value of business, which you can handle at any time:
 Kshs. (Shillings)

Name of your bankers

Branch

Part 2 (a) – Sole Proprietor

Your name in full Age

Nationality Country of Origin

Citizenship details

Part 2 (b) - Partnership

Give details of partners as follows:

Name in Full	Nationality	Citizenship Details	Shares
1.....
2.....
3.....

SCHEDULE 13 BID SECURITY FORM

Whereas(name of Bidder) hereinafter called the Bidder, has submitted its Bid dated(date of submission of Bid) for the(description of goods / services), (hereinafter called 'the Bid'),

KNOW ALL PEOPLE by these presents that We

.....

..... of having our registered office at.....(hereinafter called the Bank) are bound unto.....(name of Procuring Entity), hereinafter called the Procuring Entity, in the sum of For which payment will and truly to be made to the said Procuring Entity, the Bank binds itself, its successors, and assigns by these presents. Sealed with the Common Seal of the said Bank thisday of20.....

The CONDITIONS of this obligation are:

1. If the Bidder withdraws its Bid during the period of Bid validity specified by the Bidder on the Bid Form; or
2. If the Bidder, having been notified of the acceptance of its Bid by the Procuring Entity during the period of Bid validity,
 - a. Fails or refuses to execute the Contract form, if required; or
 - b. Fails or refuses to furnish the performance security, in accordance with the Instructions to Bidders.

We undertake to pay the Procuring Entity up to the above amount upon receipt of its first Written Demand, without the Procuring Entity having to substantiate its Demand, provided that in its Demand the Procuring Entity will note that the amount claimed by it is due to it, owing to the occurrence of one or both of the two conditions specify the occurred condition or conditions.

This guarantee will remain in force up to and including thirty (30) days after the period of Bid validity and any demand in respect thereof should reach the Bank not later than the above date

.....(signature of the Bank)

SCHEDULE 14 PERFORMANCE SECURITY FORM

(Note: Bidder should not complete the form of performance. Only the successful Bidder(s) will be required to provide performance security in accordance with the forms or in similar form acceptable to the Procuring Entity)

To.....(Name of Procuring Entity)

WHEREAS (Name of Bidder)

hereinafter called the Bidder) has undertaken, in pursuance of Contract No.

..... (reference Number of the Contract)

dated

..... 20..... (description of goods / services) (hereinafter called the 'Contract')

AND WHEREAS it has been stipulated by you in the said Contract that the Bidder shall furnish you with a bank guarantee by a reputable Bank for the sum specified therein as security for compliance with the Bidder's performance obligation in accordance with the Contract

AND WHEREAS we have agreed to give the Bid a guarantee.

THEREFORE WE hereby affirm that we are guarantors and responsible to you / on behalf of the Bidder, upon a total of

..... (Amount of guarantee) as aforesaid, without you needing to prove or show ground or reasons for your demand or the sum specified therein.

This guarantee is valid until the (Day) of 20.....

Signature and seal of the Guarantors..... (Name of Bank or financial / institution).....

(Address).....

...

(Date)

SCHEDULE 15 FORM OF AGREEMENT

SOLID WASTE COLLECTION, TRANSPORTATION AND DISPOSAL SERVICES (To be completed only by successful bidder/Bidder)

This agreement made the day of 20
BETWEEN the Nairobi City County (hereinafter called “the Employer” of the one part
and.....of
..... (hereinafter called “the Client”) of the
other part.

WHEREAS the Employer is desirous that certain works / services should be
provided, viz: -

SOLID WASTE COLLECTION, TRANSPORTATION AND DISPOSAL SERVICES

And has accepted by a letter of acceptance dated (Date of letter of
acceptance)..... Accepted a Bid by the Client for the supply and
delivery of such goods / services, NOW THIS AGREEMENT WITNESSETH as
follows: -

1. In this Agreement, words and expressions shall have the same meaning as are
respectively assigned to them in the Conditions of Bid hereinafter referred to.
2. The following documents shall be deemed to form and be read and construed as
part of the agreement, viz.: -
 - (a) The Form of Bid with Appendix dated
 - (b) Surety undertaking
 - (c) The Form of Agreement
 - (d) The Form of Performance Bond
 - (e) The Conditions of Contract
 - (f) Specific Conditions
 - (g) Schedule of Requirements
3. In consideration of the payments to be made by the Employer to the Client as
hereinafter mentioned the Client HEREBY COVENANTS with the Employer

to provide the goods and services in conformity in all respects with the provisions of the Bid.

4. The Employer HEREBY COVENANTS to pay to the Client in consideration of the provisions of the goods and services and remedying of defects therein the Contract price or such other as may be described by the Contract.

IN WITNESS WHEREOF the parties hereto have set their respective Common Seals to be hereunto affixed (or have hereunto set their respective hands and seals) the day and year first above written.

The Common Seals
..... Was
hereunto affixed in the presence of: -
Signed, sealed and delivered by the said

.....
.....
In the presence of Signed
for and on behalf of the Employer
.....

Governor, Nairobi City County

B. APPENDIX

1. APPENDIX TO FORM OF BIDDER

Conditions of Bid.

Amount of Bid Bond or Guarantee	Kshs 200,000/=
Amount of performance Bond	Kshs 300,000/=
Time of Commencement from Director of Environment's order to commence	14 Days
Amount of Liquidated damages	0.5% per month
Limit of liquidated damages	10% of sum stated in letter of acceptance
Limit of retention money	5 % of Contract sum
Percentage of Retention Money	10%
Time within which payment of accepted certificate is to be made	90 days after certificate has been certified by the Director of Environment.
Appointment of arbitrator	Institute of Arbitrators (Kenya Chapter)

Date this day of 20

Signature In the capacity of

..... duly authorised to sign.

- To be filled by the Bidder

Bids on behalf

..... (in block capitals)

Address

.....

Witness

.....

Occupation

2. LOCATION MAP

Franchise Zone 7 Map (Kilimani, Kileleshwa, Kangemi)



*ANNEX 4.3 Guideline for CBOs Involvement in Waste Collection in
Nairobi City County*

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Guideline for CBOs Involvement in Waste Collection in Nairobi City County

March 2016

Guideline for CBOs Involvement in Waste Collection

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Attachment

1. Example of selection criteria
2. Example of resident survey sheet
3. Example of CBO demarcation and route map

Chapter 1: Introduction

1-1: Objective and Background of the Guideline

Nairobi City County (NCC) is responsible for Solid Waste Management (SWM) in the city. Among various waste management practices, waste collection and transportation is performed by NCC, private companies, and Community Based Organisations (CBOs) -- especially in informal settlements. In the informal settlements, CBO collects waste from households and business establishment and transport it to certain waste collection points where NCC or a franchisee will then take and transport it to final disposal site.

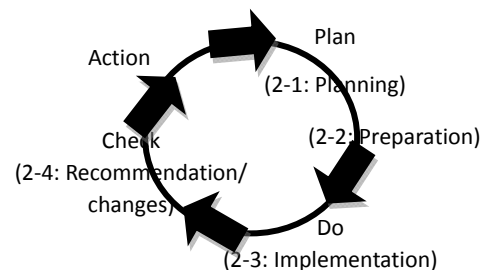
Approximately half of 3 million Nairobi population is said to be living in informal settlements where no NCC or private waste collectors enter and serve. In this regards, NCC needs to involve CBOs for solid waste management to attain clean and healthy environment in Nairobi.

This guideline is mainly aimed for assisting NCC to plan, implement, and check solid waste collection program in slum areas in conjunction with CBOs, but also help CBO to direct themselves to cooperate in the program.

1-2: Structure of the Guideline

This guideline is composed of 3 parts, namely 1) Introduction, 2) steps for implementing a pilot project, and 3) reference data.

In 1) introduction, background and objective is discussed. In 2) Steps for implementing a pilot project which is a main part of this document, is discussed to simulate plan-do-check-action (PDCA) cycle. In 3) reference data, some materials used in the past Pilot Project are contained.



Chapter 2: Steps for Implementing a Pilot Project

2-1: Outline for Pilot Project (PP) planning

Project framework should be considered in planning stage. Planning involves a) establishing clear objective(s), and b) determining the scope and duration.

[Explanation]

- a) Establishing clear objective(s)

Objectives may differ from PP to PP depending upon the condition of the area or intention of the NCC (or DoE's policy on SWM in an area).

EXAMPLE:

- **To improve public health / sanitary condition of the community by reducing illegally dumped waste.**
- **To realise the sustainability of the CBO activity, in particular, waste collection and transportation service by improving waste collection and transportation practices.**

b) Determining the scope and duration

Depending upon the objective(s), scope and duration may be considered. For example, establishment of proper SWM service in an informal settlement can be a scope, whereas in some other case, introducing recycling or composting may become a scope of the project. Duration may also be decided by a) scope, b) objective(s), c) available manpower, and/or d) budget.

EXAMPLE:

- **Targeting three neighboring villages in an informal settlement, establish reliable / responsible / sustainable waste collection & transportation system, including recycling &/or composting.**
- **Establish reputable and responsible CBO which engages in SW collection & transportation in a particular area.**
- **Other things to consider: Type of area (economic, social, tribal and other settings)**

2-2: Outline for Pilot Project (PP) Preparation

In this stage, considerations such as preparation and implementation of interviews for local leaders, target CBOs, and local residents, should be made for following activities as well as analysis of the interview result.

The activities in this stage include a) selecting target site/CBO, b) identifying stakeholders, c) identifying capacity of CBO, d) conducting needs assessment, e) developing a project design including communication strategy, f) monitoring and evaluation, and i) revising the PP design for next phase.

[Explanation]

a) Selecting target site(s)/CBO

Selecting a correct candidate site(s) / target(s) CBO is a key for successful implementation of PP. Failure to select a competent target(s) will likely to create unnecessary challenges or otherwise easily avoided in later time.

Interview sheets, targeting different local leaders, should be prepared prior to the interview. The result of the survey is used to select the target site (s)/ CBO therefore, should be carefully constructed in a way to identify a suitable site/CBO.

EXAMPLE:

- **Preliminary study may include:**
 - ✓ **Identification of local leaderships (Member of County Assembly, NCC officials on ground and other relevant leaders)**
 - ✓ **Find out the capacity and reputation of candidate CBOs.**
- **Things to consider: careful survey (interview/questionnaire) is necessary as relying on single source (i.e. candidate CBO members for resident interviews) may give biased results.**

Category ¹⁾	Item ²⁾	Item to be assessed ³⁾	Specific Question ⁴⁾	Answer ⁵⁾	Points ⁶⁾	Weight (priority) ⁷⁾
General info-						
	Knowledge on Waste Management ²⁾	1. → Attendance of workshops on WM ³⁾	Have you attended workshops on WM in past 5 years? If so, please indicate number of times and the organizer of the workshop. ⁴⁾	Organizer ⁵⁾ WS1: ⁶⁾ WS2: ⁶⁾ WS3: ⁶⁾	Each WS gets: 1 Donor listed Tablexx: 3 ⁶⁾ NGO listed Tableyy: 2 ⁶⁾ Other: 1 ⁶⁾	
			How long are the workshop last? ⁴⁾	WS1: ⁶⁾ 1/2 day, 1 day, 2days or more ⁶⁾ WS2: ⁶⁾ 1/2 day, 1 day, 2days or more ⁶⁾ WS3: ⁶⁾ 1/2 day, 1 day, 2days or more ⁶⁾	Each WS gets: 1 2days or more: 3 ⁶⁾ 1 day: 2 ⁶⁾ 1/2 day: 1 ⁶⁾	
		2. → Certificate in env. training ³⁾	Do you have certificate in environmental training (preferably in WM)? If so, please indicate the field and issuer. ⁴⁾	Field: ⁵⁾ Issuer: ⁵⁾	If the field of the certificate is in WM: 3 ⁶⁾ Other field: 1 ⁶⁾	
		3. → ³⁾	<i>Add question and answer for duration of WS.⁴⁾</i>			
Slum (cluster)-						
Size ²⁾	Slum ³⁾	1. → Population and size ³⁾	What is the approximate population in your slum? ⁴⁾ What is the approximate size of area? ⁴⁾	→ → People ⁵⁾ → → Km2 ⁵⁾	For reference only: 1 No point given ⁶⁾	
	Village ³⁾	2. → population and size ³⁾	What is the approximate population of the village(s) you	→ → People ⁵⁾ → → Km ⁵⁾	For reference only: 1	

Example of table showing selection criteria (See Attachment 1)

b) Identifying stakeholders

Once target site(s) / CBO is selected, it is time to identify all stakeholders involved. People, in general, has tendency to cooperate in a project if they are involved (or at least informed) from early stage of a program. On the contrary, if they are informed at the very last minutes, their cooperation may well be very limited. Therefore, it is important to identify all relevant stakeholders at this stage. Note that identifying stakeholder can only be possible on the ground. Typical ways to identify the stakeholders are as follows:

EXAMPLE:

- Interview with
 - ✓ Authorities (check with national and county government bodies)
 - ✓ Assembly members of the area
 - ✓ CBOs and their members
 - ✓ Local residents of the area
 - ✓ NGO and other donor organisations

Brief explanation about the survey & how info will be used.

Content of questions followed by date, time, name of interviewer.

Interviews to the residents in CBO's activity area

In a frame work of this project between the Government of Kenya and the Government of Japan, the City Council of Nairobi (CCN) and the Japan International Cooperation Agency (JICA) are working with Community-Based Organizations (CBOs) to improve urban environment in your villages. The survey aims to illustrate the current circumstances of waste management in your villages. They will be compared with the situation at a later stage of the project, which will provide an opportunity to make a better environment in your village. You are therefore encouraged to answer the questions below which your interviewers are going to ask.

1 Understanding about waste and recyclables		
1.1	Is the following item waste or recyclable: 1. Metal, 2. Plastic, 3. Paper, 4. Organic waste and 5. Glass? => If all of them should be answered as recyclable, circle "Yes" on the right cell. If only some of them, then "Partially yes". If all of them should be answered as waste, circle "No".	Yes / Partially yes / No
1.2	Do you know designated waste collection points in your village? => If yes, ask where they are. Circle "yes" on the right cell, if that answer really describes location(s) of designated waste collection point.	Yes / No
1.3	Do you use a waste collection service provider?	Yes / No
1.4	Do you know what of the following materials is used to make compost (= fertilizer / manure): 1. Metal, 2. Plastic, 3. Organic waste, 4. Cloth or 5. Mixture of 1 to 4? If the answer is 3, circle "Yes" on the right cell.	Yes / No
2 Behavior with waste and recyclables		
2.1	Do you throw away wastes in your village?	Yes / No
2.2	Do you collect recyclables on the streets?	Yes / No
2.3	Do you sort recyclables from wastes at home?	Yes / No
2.4	Do you sell recyclables?	Yes / No
3 Attitudes for waste management		
3.1	Are you willing to pay for waste collection services?	Yes / No

Example of survey sheet for residents (See Attachment 2)

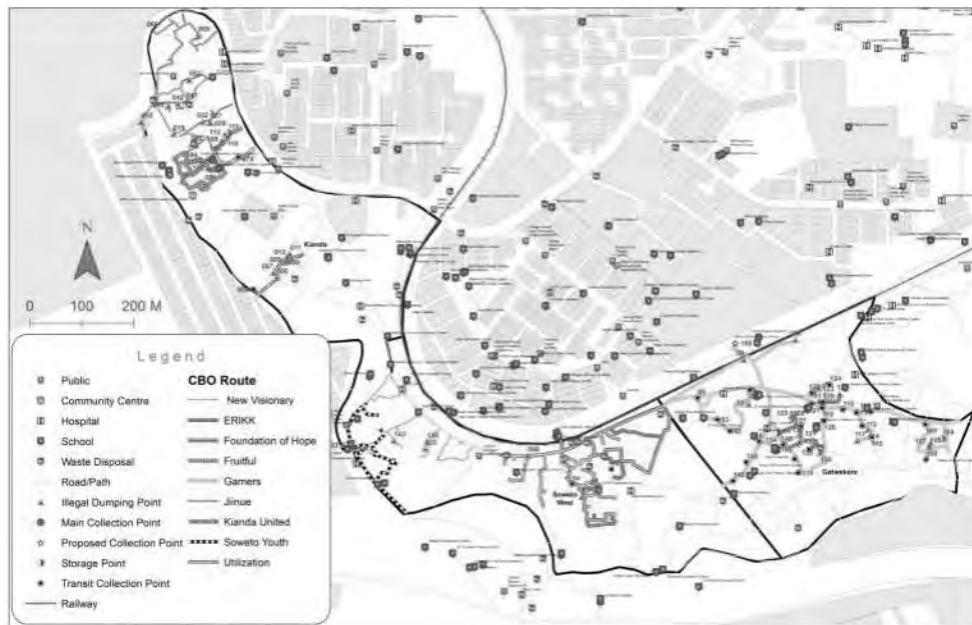
You may note that some of them are same as a) Selecting target site(s)/CBO, so it would be wise to consider how and what to interview beforehand.

c) Identifying capacity of CBO

Capacity of CBO means both a) physical capacity of the CBO to carry out SWM practice in a given area and b) human capacity in which constituent members' ability to understand and handle SWM practices. This can firstly be attained through interviews with local authorities, and then interviews with CBO leaders and members, as well as community members. An example of capacities identified in a CBO is as follows:

EXAMPLE:

- **Identifying area served or collection routes, including location of designated waste collection points, population / households.**
- **Identifying and profile of CBO itself, including general information, SWM practice, equipment/gear used, and operation schedule.**
- **Identify human capacity of CBO members, including knowledge on SWM and operational/ management knowledge / skills to run CBO as a group.**



Example of CBO demarcation and route map (Kibera) (See Attachment 3)

d) **Conducting needs assessment**

One of the important elements in designing how PP would be carried out comes from correct information from this needs assessment. Depending upon the scope, available manpower, and/or budget, a survey can be conducted to the target CBO, CBO members, local residents, and/or authorities. Contents may include training needs, management skills, hand tools and others. If enough funds are available, the survey can be outsourced and target a large number of residents.

EXAMPLE:

- **Equipment needs: rakes, wheelbarrows, handcarts, gumboots, gloves, etc.**
- **Administrative needs: organisational structure, management system, etc.**

Content may include:

1. CBO details
2. CBO Equipment
3. Equipment
Maintenance
4. Revenue & Costs.
5. Skills Occupational
challenges
6. Relations with other
stakeholders

CBO Waste Management Questionnaire – Kangemi

Name of interviewer Date ...

1. CBO details

Name & Address	
Year of establishment	
Volume of operations (kg/day)	
Number of workers	<input type="checkbox"/> 1. Male: <input type="checkbox"/> 2. Female:
Type of Registration	<input type="checkbox"/> 1. CBO <input type="checkbox"/> 2. Private Company
Area(s) of operation	
Number of Customers served	
Waste Disposal Point	

Example of CBO interview sheet

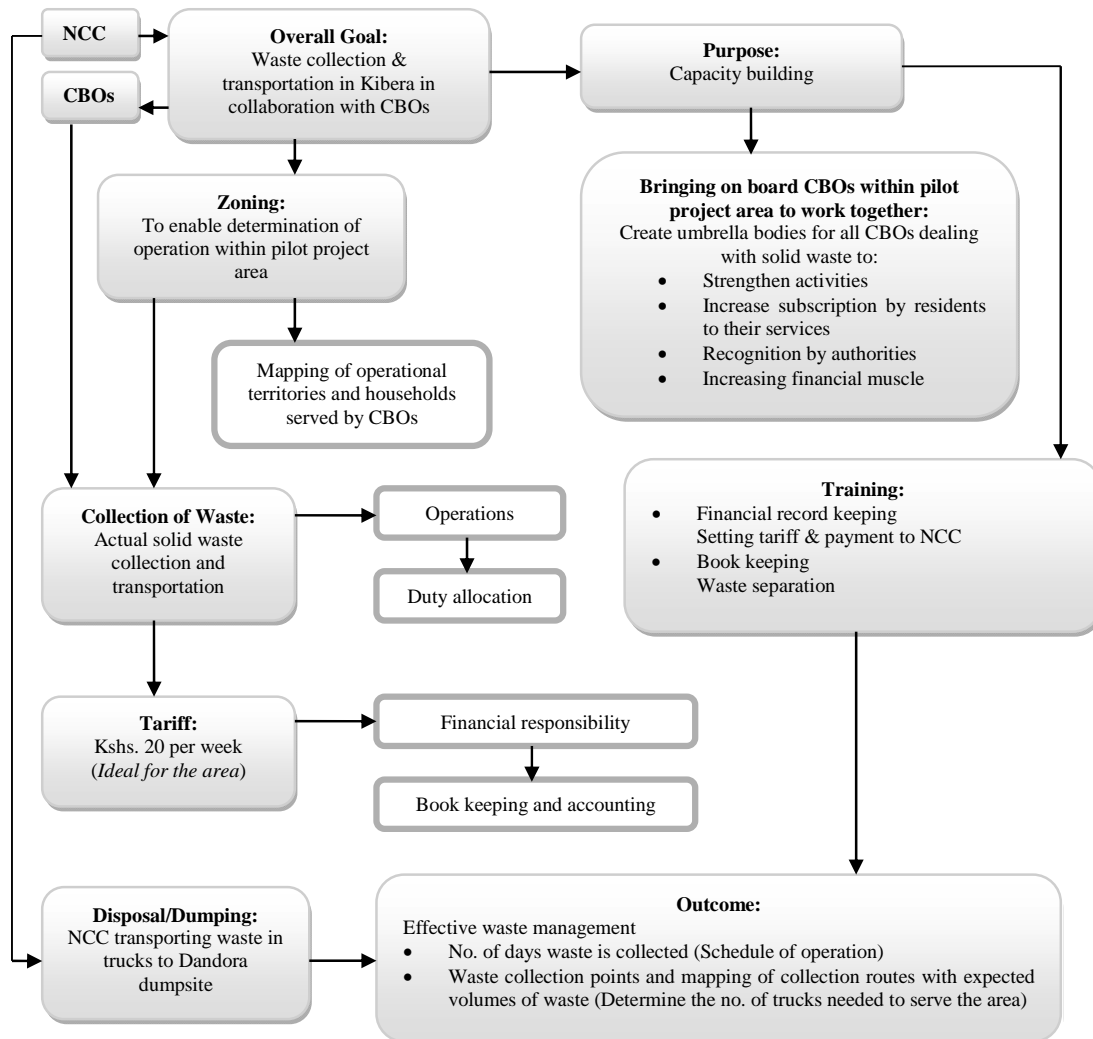
e) Developing a project design

Developing a project design involves careful observation of local conditions and characteristics of CBO.

Firstly, determine how you can reach the goal.

EXAMPLE:

- **Reforming CBO structure or consolidating nearby/ surrounding CBO(s) to form an umbrella body.**
- **Reforming fee structure to induce source separation.**
- **Introducing new system to promote recycling.**
- **Develop activities necessary and their timetable, as well as specifying who is in charge.**



Example of designing flow of project

2-3: Outline for PP Implementation and Monitoring

Implementation and monitoring is followed. This stage involves CBO or local residents, including consideration in public awareness raising campaign like cleanup activities.

[Explanation]

a) Implementation

Implementation on the ground may seem to be done by CBO and its members only; however, it is crucial all stakeholders play their role in the implementation stage as well. For example, if creating an umbrella group was the content of PP, serious of consensus building meeting must be organised/ hosted by NCC along with participations from relevant bodies. Of course, developing and/or giving guidance on various aspects of umbrella group cannot be overlooked.

EXAMPLE:

- **Carry out the project designed earlier.**
- **Cleanup campaign involving local residents, authorities, and others.**
- **Things to consider:**
 - ✓ **All stakeholders need to be involved**
 - ✓ **Timely implementation is necessary**
 - ✓ **Most (if not all) activities should be done within project area.**

S. No.	Proposed workshop topics	Proposed dates
1	<ul style="list-style-type: none"> • Financial management • Records management/Book keeping • Organizational efficiency and effectiveness 	13 th January 2015
2	<ul style="list-style-type: none"> • Solid waste management • CBO management 	6 th June 2015
3	<ul style="list-style-type: none"> • CBO management <ul style="list-style-type: none"> ○ Book keeping ○ Finance management ○ Linkages with industry 	7 th October 2015
4	<ul style="list-style-type: none"> • Entrepreneurship in SWM <ul style="list-style-type: none"> ○ Client retention ○ Recyclable technologies ○ Appropriate technologies 	9 th October 2015
5	<ul style="list-style-type: none"> • Occupational Health & Safety <ul style="list-style-type: none"> ○ PPEs & Hazards 	12 th October 2015

Example of workshops held for newly created umbrella group

b) Monitoring

Monitoring is very important as it can be used to see how the project is progressing and it can be used to compare the difference before, during, and after implementation. This ensures that the project progresses as expected, and if does not, corrective actions/ measures taken when necessary. Examples of monitoring items are, a) waste collection efficiency (volume of waste/ recyclables recovered per staff/time), b) waste collection volume, c) number of clients, d) revenue and/or expenditure of CBO activities, etc.

		2014				2015						
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.
GATWEKERA	Average no. of households served	450.	233.	233.	231.	279.	162.	375.	237.	-.	-.	-.
	Average volume of waste collected (M ³)	44.0.	15.2.	57.3.	38.5.	-.	1.9.	5.3.	10.4.	50.0.	28.47.	34.7.
SOWETO WEST	Average no. of households served	702.	612.	552.	492.	426.	448.	425.	348.	-.	-.	-.
	Average volume of waste collected (M ³)	53.4.	28.4.	44.3.	64.1.	-.	12.6.	85.0.	46.5.	50.0.	22.3.	45.
KIANDA	Average no. of households served	185.	185.	183.	193.	199.	220.	285.	257.	-.	-.	-.
	Average volume of waste collected (M ³)	19.0.	16.6.	13.3.	33.1.	-.	6.1.	24.0.	40.3.	65.0.	16.7.	31.8.

Example of monitoring result (Kibera)

2-4: Outline for analysis on result of the PP implementation and recommendation for improvement

Analysis of the result and recommendation is carried out accordingly. This activity should be conducted with concrete data, such as monitoring result and record of activity.

[Explanation]

All activities and monitoring data should be carefully reviewed. Based on the review, consider how this project can be improved/ revised in future project. It should be noted that the result should be also shared with all stakeholders as it serve as consensus building effort among NCC staff, CBO members, and public. It also strengthens the communication channel among all those stakeholders through sharing results of the project.

Information necessary to identify site selection criteria

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
General info	Knowledge on Waste Management	1. Attendance of workshops on WM	Have you attended workshops on WM in past 5 years? If so, please indicate number of times and the organizer of the workshop.	WS1:	Organizer	Each WS gets: Donor listed Tablexx: 3 NGO listed Tableyy:2 Other: 1
				WS2:		
				WS3:		
						WS1:
	WS2:	1/2 day, 1 day, 2days or more				
	WS3:	1/2 day, 1 day, 2days or more				
			Field	Issuer	If the field of the certificate is in WM: 3 Other field: 1	
Slum (cluster)						
Size	Slum	1. Population and size	What is the approximate population in your slum? What is the approximate size of area?	____ People ____ Km2	For reference only. No point given	
	Village	2. population and size	What is the approximate population of the village(s) you serve?	____ People ____ Km2	For reference only. No point given	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
			What is the approximate size of the village?			
Location	Name of area	3. Location	What is the name of informal settlement?		For reference only. No point given	
CBO						
How well organized ?	Recognition from local administration	1. Location chief	Is your CBO recognized by location chief?	YES NO	Yes: 1 No: 0	
		2. Village elder	Is your CBO recognized by village elder?	YES NO	Yes: 1 No: 0	
	Recognition from city council/ Social services	1. City Council	Is your CBO recognized by the City Council?	YES NO	Yes: 1 No: 0	
		2. Social Services	Is your CBO recognized by the Social Services?	YES NO	Yes: 1 No: 0	
	Objectives of the group, constitution.	1. Waste Management	Does your CBO has constitution? If so, is WM specified as a objective of the group?	Constitution: YES / NO WM as objective: Yes/No	WM as objective: Yes: 1 No: 0	
		2. History of the WM	How long your CBO has been working on WM?	< 1 year 1 year 2 years 3 years > 4 years	< 1 year: 1 1 year: 2 2 years: 3 3 years: 4 > 4 years: 5	
		3. Waste Collection / transportation	Does your CBO actively involves in waste collection and transportation?	YES NO	Yes: 1 No: 0	
		4. Recycling	Does your CBO actively involves in recycling? If so, which materials are recycled?	Plastics: YES/NO Metals: YES/NO Glass: YES/NO Papers: YES/NO	1 point each	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
				Organics: YES/NO		
		5. Composting	Does your CBO actively involves in composting?	YES NO	Yes: 1 No:0	
		6. Other	Does your CBO involved in any other WM activity? Please specify.	YES (specify _____) No	Yes: 1 No:0	
	Size of membership	1. Number of memberships	What is the number of your membership? (Specifically for WM)	1 - 9 10 - 19 20 - 29 30 - 39 40 or more	1 - 9: 1 10 - 19: 2 20 - 29: 3 30 - 39: 4 40 or more: 5	
	Record keeping	1. Membership	Do you have a record of memberships?	YES NO	Yes:1 No: 0	
		2. Fees	Do you have a record of fees?	YES NO	Yes:1 No: 0	
		3. Waste	Do you have a record of waste volume?	YES NO	Yes: 1 No:0	
		4. Recycled	Do you have a record of recyclables you've collected/sold? If so, is your record by types of recyclables or aggregated?	YES (by types) YES (aggregated) NO	YES (by types): 3 YES (aggregated): 1 NO: 0	
		5. Finance	Do you have a record of your finances?	YES NO	Yes:1 No: 0	
	Distance from nearest recycler	1. Availability of recyclers	Is there recyclers nearby your CBO?	Plastics : > 30min 30min - 1 hr < 1 hr	Plastic s > 30min 30min - 1 hr < 1 hr	3 2 1

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
				Metals	> 30min 30min - 1 hr < 1 hr	3 2 1
				Glass	> 30min 30min - 1 hr < 1 hr	3 2 1
				Papers	> 30min 30min - 1 hr < 1 hr	3 2 1
				Other (Specify)	> 30min 30min - 1 hr < 1 hr	3 2 1
How active are they?	How often they have meetings	1. Tracking/evaluating issues	How often do you meet to discuss WM issues?	Twice / wk Once / wk Once in 2wks Once / mth	Twice / wk: 4 Once / wk: 3 Once in 2wks: 2 Once / mth: 1	
		2. Copies of M/M	Do you have copy of M/M?	YES (all) YES (some times) NO	YES (all): 3 YES (some times): 2 NO: 1	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
How much fund they can allocate?	Accounting process	1. Amount of fund allocated to WM	How much is the fund for your CBO in a month, and what is the amount of fund allocated in WM?	___ksh/mth for all activity ___ksh/mth for WM	>A %: 1 B-C %: 2 <D %: 3	
How many people in waste management?		1. How many people in WM?	How many people are engaging in WM in your CBO?	1-4 5-9 10 - 14 15 - 20 21 -	1-4: 1 5-9: 2 10 - 14: 3 15 - 20: 4 21 -: 5	
Waste Collection						
How are they collecting?	Wheel barrow, handcart	1. Wheel barrow	How many wheel barrow does your CBO uses for a day of waste collection?	0-4 5-9 10-	For reference only. No point given	
		2. Handcart	How many handcart does your CBO uses for a day of waste collection?	0-4 5-9 10-	For reference only. No point given	
		3. Hand carry	What is the percentage of waste carried by hand.			
Frequency	Collection schedule	1. Frequency of waste collection	How often do you collect waste?	Twice / wk Once / wk Once in 2wks Once / mth	Twice / wk: 4 Once / wk: 3 Once in 2wks: 2 Once / mth: 1	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)	
Volume & Composition?	selling record of:	1. Plastics	Do you keep the record of selling plastics? If so, the record contains weight or prices? How long the record is kept?	YES: weight & price kept for 0-1 yr	4		
				kept for 1-2 yrs	YES: weight or price kept for 0-1 yr		
				kept for 3 or more yrs			5
				YES: weight or price (only 1)			6
				kept for 0-1 yr			YES: weight or price (only 1) kept for 0-1 yr
				kept for 1-2 yrs			
		kept for 3 or more yrs	2				
		2. Metal	Do you keep the record of selling metals? If so, the record contains weight or prices? How long the record is kept?	YES: weight & price kept for 0-1 yr	4		
				kept for 1-2 yrs	YES: weight or price kept for 0-1 yr		
				kept for 3 or more yrs			5
YES: weight or price (only 1)	6						
kept for 0-1 yr	YES: weight or price (only 1) kept for 0-1 yr						
kept for 1-2 yrs		1					
kept for 3 or more yrs	2						
NO	0						

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)	
					yr kept for 1-2 yrs kept for 3 or more yrs NO YES: weight & price kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs YES: weight or price (only 1) kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs YES: weight or price (only 1) kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs NO YES: weight & price kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs YES: weight or price (only 1)	2 3 0 4 5 6 1 2 3 0 4	
		3. Glass	Do you keep the record of selling glass? If so, the record contains weight or prices? How long the record is kept?	YES: weight & price kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs YES: weight or price (only 1) kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs NO			
		4. Organics	Do you keep the record of organic material recovered/compost sold? If so, the record contains weight or prices? How long the record is kept?	YES: weight & price kept for 0-1 yr kept for 1-2 yrs kept for 3 or more yrs YES: weight or price (only 1)			

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
				kept for 0-1 yr. kept for 1-2 yrs kept for 3 or more yrs NO	kept for 3 or more yrs YES: weight or price (only 1) kept for 0-1 yr. kept for 1-2 yrs kept for 3 or more yrs NO	6 1 2 3 0
		5. Other	Do you keep record of other recyclables? (please specify)	YES: specify ____ NO	YES: 1 NO: 0	
Waste Transp.						
Designated disposal point	Actual dump / disposal point?	1. Number of designated disposal points	Do you know where is(are) the designated disposal points? If so, how many are they where you can dispose your waste.	YES: NONE YES: 1 YES: 2 YES: 3 or more NO: (don't know)	YES: 2 NO: 0	
Volume that can be handled?		1. Volume of Waste	Do you know the volume of waste you can handles in any one collection day? If so, please indicate the volume.	YES (____kg) NO	YES: 2 NO: 0	
Illegal disposal points?	Depend on size and number of illegal sites.	1. Number of illegal disposal points	Do you know how many illegal dumping point (where you can observe quantity of disposed waste) in your service area?	YES: NONE YES: 1-3 YES: 4-6 YES: 7-9 YES: 10 or more NO	YES: 2 NO: 0	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
Volume of illegal dumpsite?	Length (m) x Width (m) x Height (m)	1.	If you answer yes to above, please indicate the number and approx. volume.	1) L x w x h (m) 2) L x w x h (m) 3) L x w x h (m) 4) L x w x h (m)	For reference only. No point given.	
Difficulty of truck collection?	Accessibility (traffic jam)	1.	Please assess the accessibility of collection truck in/to your area. (ie. road conditions, traffic jam, and other)	1) Easily accessible 2) Moderately accessible 3) Somewhat difficult 4) Difficult to access	1) 4 2) 3 3) 2 4) 1	
Recycling						
What materials are recycled?	What particular plastics, brands, are accepted?	1.	What type of plastics are recycled?	1) PET bottles 2) Polyethylene (film bag) 3) Hard plastics (HDPE) 4) Soft plastics (LDPE) 5) Other type of plastics	1) 1 type: 1 2) 2 types: 2 3) 3 types: 3 4) 4 types: 4 5) 5 or more types: 5	
How are they recycled?	Processed (shredded?)	1.	When you sell your collected plastics, do you process the plastics before you sell?	Wash Separate by type of plastics Separate by color Shred Other (pls specify)	No processing: 0 1 process: 1 2 processes: 2 3 processes: 3 4 processes: 4 5 processes or more 5	
	Competitors (recyclers/middle men)	1. Recyclers (Plastic)	Do you send your recyclables to recycling company directly? If not, how many competitors / middlemen are there in your CBO?	1) Directly dealing w/ company 2) 1-3 competitors / middlemen 3) 4-6 competitors / middlemen 4) 7 or more competitors / middlemen	1) 4 2) 3 3) 2 4) 1	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
		2. Recyclers (Metal)	Do you send your recyclables to recycling company directly? If not, how many competitors / middlemen are there in your CBO?	1) Directly dealing w/ company 2) 1-3 competitors / middlemen 3) 4-6 competitors / middlemen 4) 7 or more competitors / middlemen	1) 4 2) 3 3) 2 4) 1	
		3. Middlemen (Plastic)	Do you send your recyclables to recycling company directly? If not, how many competitors / middlemen are there in your CBO?	1) Directly dealing w/ company 2) 1-3 competitors / middlemen 3) 4-6 competitors / middlemen 4) 7 or more competitors / middlemen	1) 4 2) 3 3) 2 4) 1	
		4. Middlemen (Metal)	Do you send your recyclables to recycling company directly? If not, how many competitors / middlemen are there in your CBO?	1) Directly dealing w/ company 2) 1-3 competitors / middlemen 3) 4-6 competitors / middlemen 4) 7 or more competitors / middlemen	1) 4 2) 3 3) 2 4) 1	
		5. Other	Do you send your recyclables (please specify _____) to recycling company directly? If not, how many competitors / middlemen are there in your CBO?	1) Directly dealing w/ company (pls specify _____) 2) 1-3 competitors / middlemen 3) 4-6 competitors / middlemen	1) 4 2) 3 3) 2 4) 1	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
				4) 7 or more competitors / middlemen		
Amount of recyclable ?	X kg/ x tons	1.	How much waste and recyclable had you handled in the past 6 months?	Waste (total): ____kg Plastic: ____kg Metal: ____kg Glass: ____kg Organics: ____kg Other: ____kg	Ratio: 0-25%: 1 26-50%: 2 51-75%: 3	
Management of Organic waste						
How are they dealing with organic waste?	Volume of	1. Pig feed/ goat/ chicken	Do you know how much organic waste is used for pig feed? If so, please indicate the volume.	YES: ____kg	Ratio: feeding / total organic waste 1-25%: 1 26-50%: 2 51% - : 3 Compost / total organic waste 1-25%: 1 26-50%: 2 51% - : 3	
		2. Composting	Do you know how much organic waste is used for composting? If so, please indicate the volume.	YES: ____kg		
		3. Dumpsite	Do you know how much organic waste is going to dumpsite? If so, please indicate the volume.	YES: ____kg		
Possible location for composting available?	Site available (m ²)	1. Space 1	Is there possible space for making compost? If so, what is the size of the location.	YES: (____ m ²) NO	YES: 2 NO: 0	
		2. Space 2	Is there possible space for making compost? If so, what is the size of the location.	YES: (____ m ²) NO	YES: 2 NO: 0	
		3. Space 3	Is there possible space for making compost? If so, what is the size of the location.	YES: (____ m ²) NO	YES: 2 NO: 0	
Accessibility of the space	of	1. Space 1	What is the accessibility of the above space from access road?	1) Easily accessible 2) Moderately accessible	1) 4 2) 3	

Category	Item	Item to be assessed	Specific Question	Answer	Points	Weight (priority)
				3) Somewhat difficult 4) Difficult to access	3) 2 4) 1	
		2. Space 2	What is the accessibility of the above space from access road?	1) Easily accessible 2) Moderately accessible 3) Somewhat difficult 4) Difficult to access	1) 4 2) 3 3) 2 4) 1	
		3. Space 3	What is the accessibility of the above space from access road?	1) Easily accessible 2) Moderately accessible 3) Somewhat difficult 4) Difficult to access	1) 4 2) 3 3) 2 4) 1	
	Ownership of the space	1. Space 1	Do you know the ownership of the above mentioned space?	1) YES: Private 2) YES: Public 3) NO: don't know	1) 2 2) 2 3) 0	
		2. Space 2	Do you know the ownership of the above mentioned space?	1) YES: Private 2) YES: Public 3) NO: don't know	1) 2 2) 2 3) 0	
		3. Space 3	Do you know the ownership of the above mentioned space?	1) YES: Private 2) YES: Public 3) NO: don't know	1) 2 2) 2 3) 0	
		4.	Do you know the ownership of the above mentioned space?	1) YES: Private 2) YES: Public 3) NO: don't know	1) 2 2) 2 3) 0	
Public awareness						
	Willingness to pay	1.	Do you put waste in designated bag? X ksh/wk			
		1. 0-5 ksh/wk				
		2. 6-10 ksh/wk				
		3. 11-15 ksh/wk				
		4. 16- ksh/wk				

Interviews to the residents in CBO's activity area

In a frame work of this project between the Government of Kenya and the Government of Japan, the City Council of Nairobi (CCN) and the Japan International Cooperation Agency (JICA) Expert Team are working with Community-Based Organizations (CBOs) in order to improve urban environment in your villages.

This baseline survey aims to illustrate the current circumstances of waste management in your villages before the project starts. The current circumstances will be compared with the situation at a later stage of this project, which will provide an opportunity to make a better environment in your village. You are therefore kindly encouraged to answer the questions below which your interviewers are going to ask.

1 Understanding about waste and recyclables		
1.1	Is the following item waste or recyclable: 1. Metal, 2. Plastic, 3. Paper, 4. Organic waste and 5. Glass? => <i>If all of them should be answered as recyclable, circle "Yes" on the right cell. If only some of them, then "Partially yes". If all of them should be answered as waste, circle "No".</i>	Yes / Partially yes / No
1.2	Do you know designated waste collection points in your village? => <i>If yes, ask where they are. Circle "yes" on the right cell, if that answer really describes location(s) of designated waste collection point.</i>	Yes / No
1.3	Do you use a waste collection service provider?	Yes / No
1.4	Do you know what of the following materials is used to make compost (= fertilizer / manure): 1. Metal, 2. Plastic, 3. Organic waste, 4. Cloth or 5. Mixture of 1 to 4? <i>If the answer is 3, circle "Yes" on the right cell.</i>	Yes / No
2 Behavior with waste and recyclables		
2.1	Do you throw away wastes in your village?	Yes / No
2.2	Do you collect recyclables on the streets?	Yes / No
2.3	Do you sort recyclables from wastes at home?	Yes / No
2.4	Do you sell recyclables?	Yes / No
3 Attitudes for waste management		
3.1	Are you willing to pay for waste collection services?	Yes / No
3.2	If "YES" for 3.1. how much will you pay for waste collection services per week?	Kshs
3.3	Are you willing to contribute to reduction of waste on the streets in your village?	Yes / No
4 General information of the questionnaire answerers of this baseline survey		
4.1	Name of the answerer	
4.2	Household size	
4.3	Age	
4.4	Religion	
4.5	Tribe	
4.6	Name of the village & informal settlement	

Date of the interview conducted:

Name of the interviewer:

ANNEX 3, CSOs Activity Areas and Routes

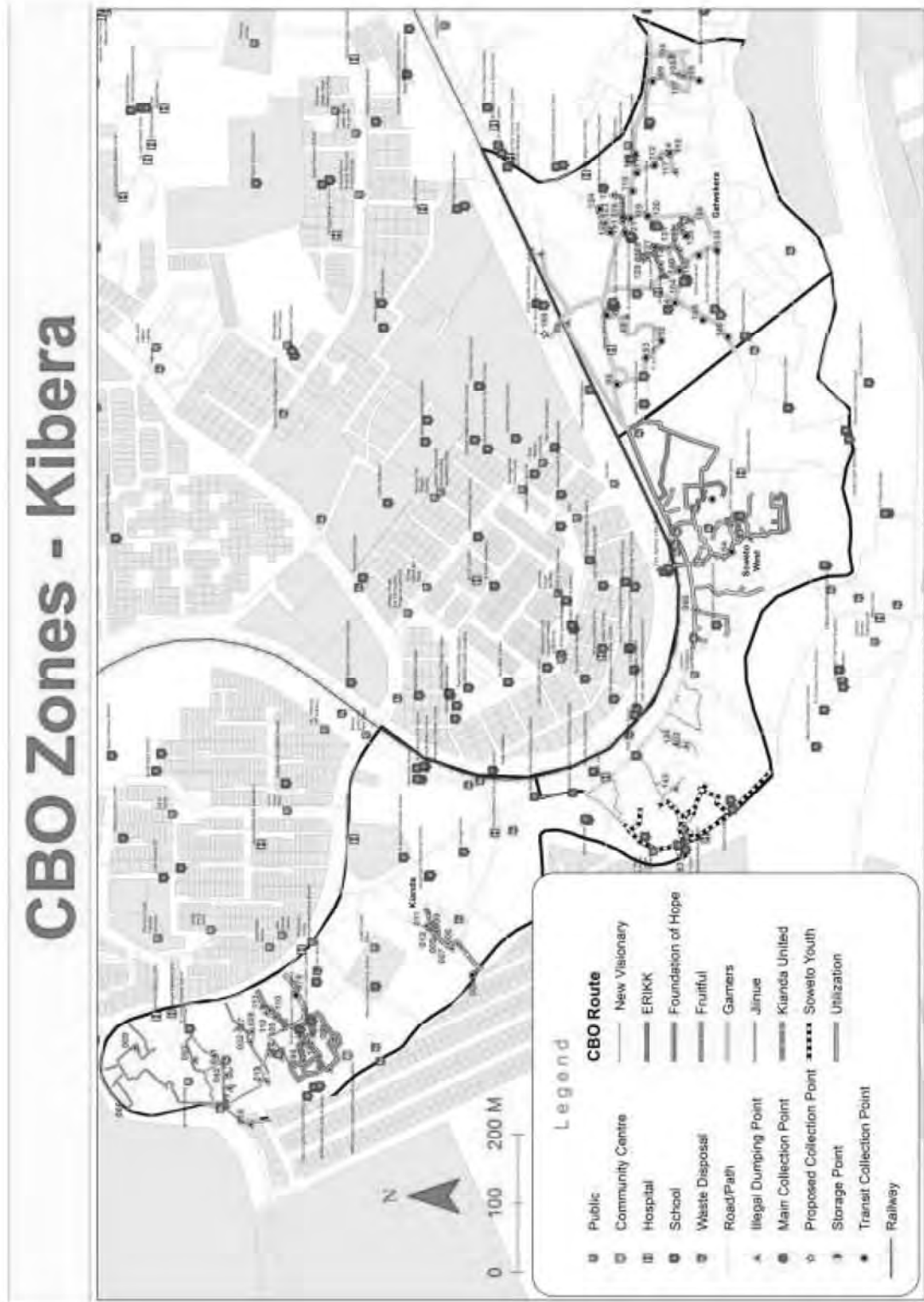
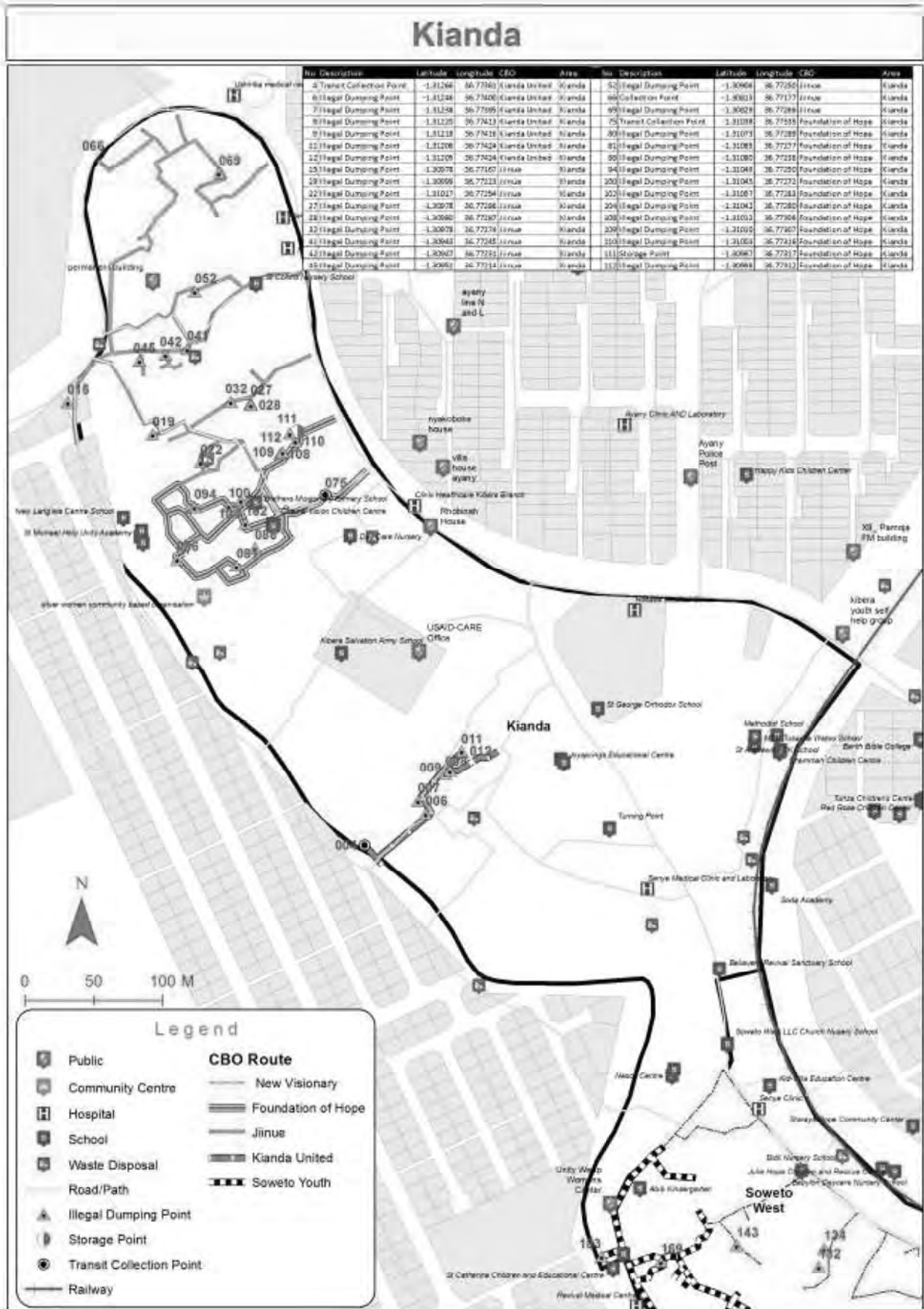
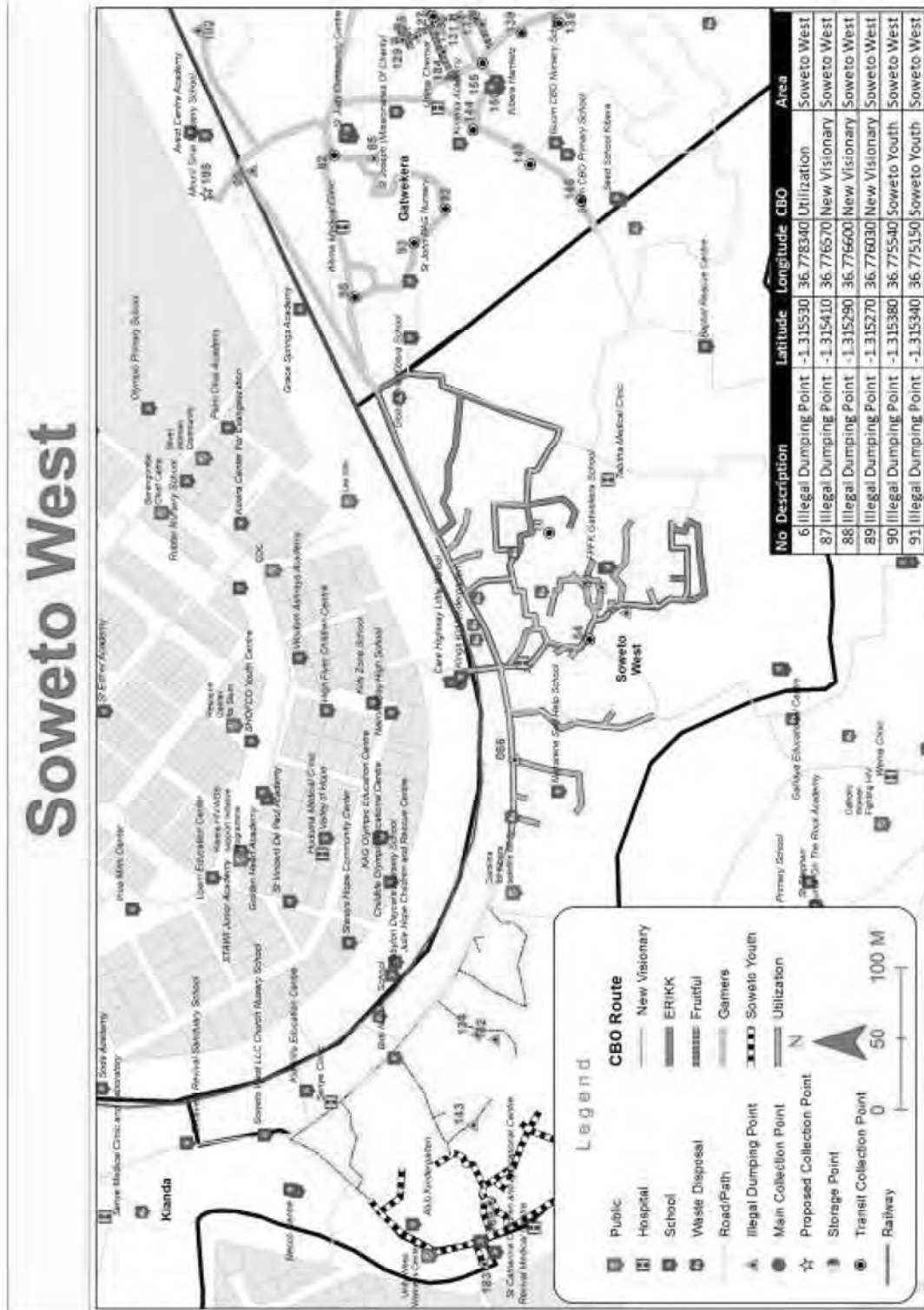


Figure17: Map of CBO activity areas and routes

ANNEX 3: CBOs Activity Areas and Routes

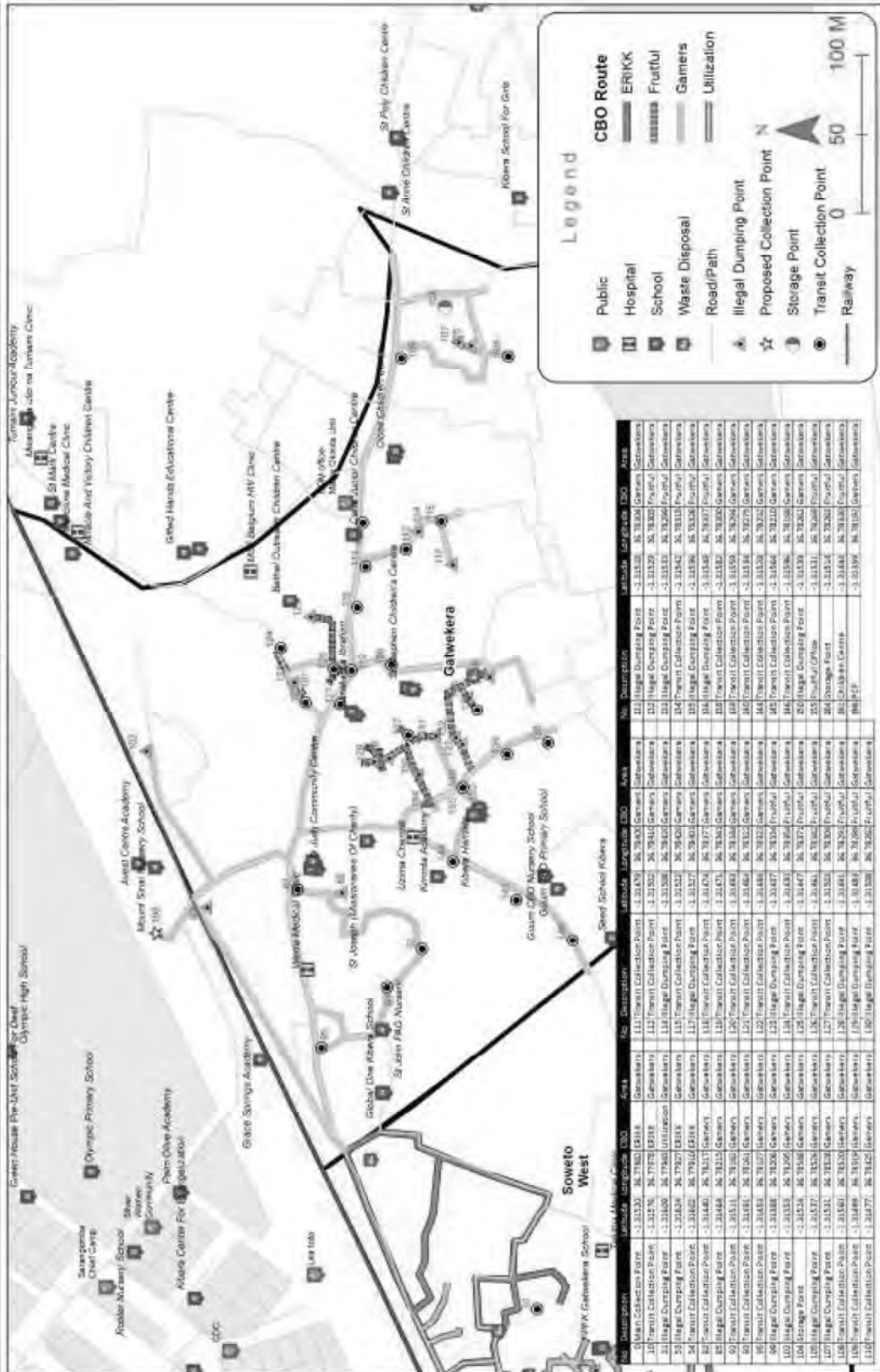


ANNEX 3: CSOs Activity Areas and Routes



ANNEX 3: CSOs Activity Areas and Routes

Gatwekera



*ANNEX 4.4 Landfilling Work Plan for Dandora Dumpsite in
Nairobi City County*

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Landfilling Work Plan
for
Dandora Dumpsite
in
Nairobi City County

March 2016

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Chapter 1 General

1.1 Purpose of the plan (Necessity of improvement)

Dandora Dumpsite is in operation under the condition of overloading from the increase in incoming waste year by year. NCC, together with the JICA Expert Team, is considering the ways to prolong Dandora Dumpsite's service life. However, since the operation has been done without a proper work plan, the site operation is getting worse and disordered.

Regarding the construction of a new landfill site as a successive facility, NCC decided to install the facility in Ruai, located north-east of CBD. However, there has no construction yet, so the importance of Dandora Dumpsite is gradually increasing.

This work plan is a plan to dispose of incoming waste in Dandora Dumpsite for the usage in future. Since dumpsites generally change shape following the disposal of waste, this plan is to control the shape of the site over time and hence also covers improvements which have never previously been accomplished to carry out the operation as planned.

1.2 Scope and period (until a new landfill starts operation)

This plan covers Dandora Dumpsite and the applied duration is for several years until a new landfill site is operational.

Chapter 2 Outline of Dandora Dumpsite

2.1 Outline of the dumpsite

Location:	1°15'0.65"S 36°53'49.01"E
Area:	Approx. 46ha
Operation period:	1981 to present
Received amount:	Under current circumstances, the maximum amount of received waste is approx. 1,200t/ day and halved on weekends.

2.2 Current state of the site

The current state of site improvement is shown below.

Dandora Dumpsite has 6 dumping areas named and designated as Small Cell and Cell1, 2, 4, 5 and Cell6. Although the current available area among these is only Cell2, all the vehicles including NCC's collection vehicles, first go through Access2, unload waste in Cell2, then pass through Exit1 between Access1 and Access2 to exit the site. Since Small Cell for handcart waste at the edge of the premises in the east is not available, a temporary dumping area is designated in front of the perimeter wall.

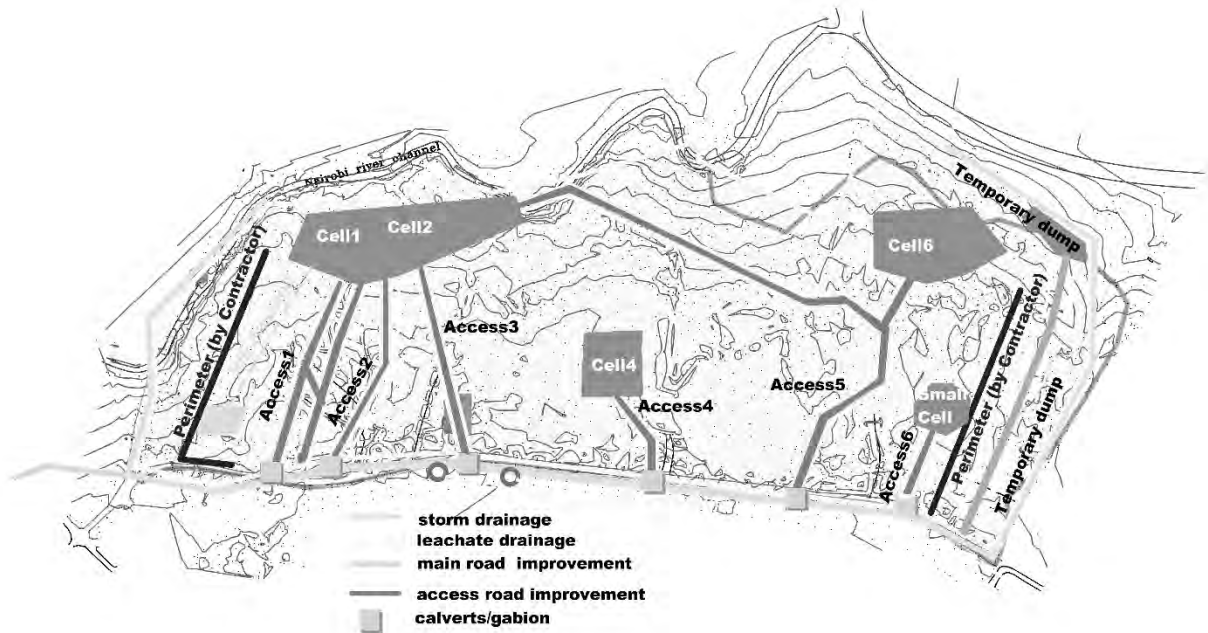


Figure 1: Current State of Dandora Dumpsite

2.3 Issues to be solved and countermeasures

Issues of the current situation are as follows:

- 1) Since incoming vehicles are concentrated in Cell2, works for unloading waste and re-loading recyclables are very complicated.
- 2) Ground improvement remains poor, then traffic congestion often occurs.
- 3) Excessive traffic load affects Access2 and Exit1, thus the access roads require frequent maintenance.

To solve the issues in future, countermeasures are proposed as below:

- S-1) by using cells that are currently unused, traffic load per access road would be reduced.
- S-2) securing new passages would ease traffic.
- S-3) increasing the number of passable roads would ease the traffic load on Access2 and Exit1.

Chapter 3 Waste Reception Plan

3.1 Projected amount of incoming waste

According to Revised M/P, the waste amount in future is projected as below.

From now on, the amount of incoming waste is set to soar due to an increase in the collection rate and waste generation amount.

Table 1: Projection of Incoming Waste Amount

	year	1t/day= 1m ³ /day	t/year		year	1t/day= 1m ³ /day	t/year days
1	2016	1,000	366,000	13	2028	2,481	908,046
2	2017	1,067	389,455	14	2029	2,643	964,695
3	2018	1,159	423,035	15	2030	2,815	1,027,475
4	2019	1,256	458,440	16	2031	2,972	1,084,780
5	2020	1,353	495,198	17	2032	3,134	1,143,597
6	2021	1,477	539,105	18	2033	3,296	1,202,381
7	2022	1,610	587,650	19	2034	3,458	1,261,133
8	2023	1,744	636,560	20	2035	3,620	1,319,852
9	2024	1,887	690,642	21	2036	3,782	1,378,539
10	2025	2,035	742,775	22	2037	3,944	1,437,194
11	2026	2,177	794,605	23	2038	4,106	1,495,816
12	2027	2,329	850,085				

3.2 Waste treatment flow in the dumpsite

Incoming waste is treated as shown below.

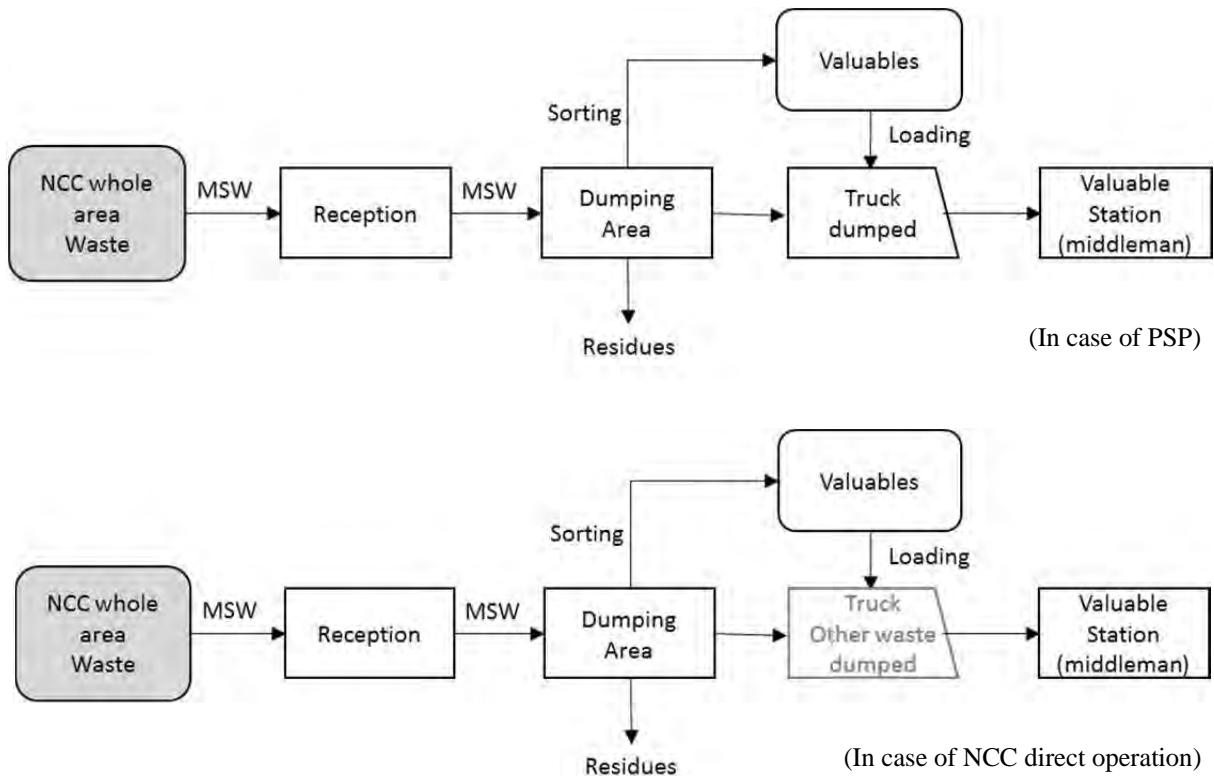


Figure 2: Waste Treatment Flow Diagram

Incoming waste from each district in NCC is weighed, goes via access roads and is then unloaded in the dumping areas. In the dumping area, there are waste pickers independent of waste transporters. They sort

valuables (recyclables). In case of PSP trucks, sorted recyclables are re-loaded onto the same trucks, then go to the recyclable station located outside the premises.

There are many collection vehicles without hydraulic unloading functions and in this case, the waste pickers off-load the waste at the loading place of the truck.

Chapter 4 Waste Management Plan

To solve the issue raised in the previous chapter, the waste landfilling plan is developed as shown below.

Here, although work procedures depend on the current on-site situation, to understand and share the common understanding collectively, it is important to “proceed as normal and as planned.”

4.1 Improved plan for dumping area

Phase 1: Improvement of Cell2

Vehicles enter Access2, unload the waste at Cell2, then go out through Exit1. Passage is in anti-clockwise.

The waste dumped in Cell2 is moved to the Quarry located between the cell and the Nairobi River.

After the Quarry is filled with waste, levelling and compaction should be performed to make a stable slope using heavy equipment. Since the original waste in the Quarry is not compacted, the waste should be piled up high, then formed using consolidation.

Soil cover is done in Cell2 from the edge of the cell. You can refer to the “Guideline for dumpsite operation” to know how to pile up the waste.

Phase 2: Improvement of Cell1

While the waste is concentrated to unload in Cell2, the improvement of Cell1 is enhanced.

Cell1’s area is identified, whereupon the waste there is removed with concentrated efforts.

The removed waste is then dumped into the Quarry down.

Cell1 is used as a dumping area as well as Cell2.

Phase 3: Improvement of Cell5

Adjacent to the eastern edge of Cell2, Cell5 is created. Since the ground level between Cell2 and Cell5 differs, they are treated as different Cells.

Phase 4: Improvement of Cell4

After securing Cell5, Cell4 is improved.

The access road from Cell5 to Cell4 is initially secured.

Access from Cell4 to J/O Rd should be passable aside from the progress of the improvement of Cell4.

Phase5: Improvement of Cell6

Access road to Cell6 is completed before the improvement of Cell6.

After the improvement of Cell6, its area is expanded.

4.2 Waste sorting and recycling plan

Recyclable station is installed along J/O Rd for sorting and recycling.

Currently, there is an existing recyclable station adjacent to the southern part of the site premises. This existing station is moved inside. The current usage area for the station is approx. 1.5ha and the move should retain the same function in terms of quality and quantity.

The new station has a storage function whereby recyclables are separated.

In future, a sorting plant done by NCC should be installed. The space will be reconsidered when appropriate.

Chapter 5 Site Utilisation Plan

5.1 Improving phase

Since 2012, NCC has been trying to improve the dumpsite. With structured improvement, the landfill plan will be implemented revising the routine.

The improving phase includes several procedures as shown below.

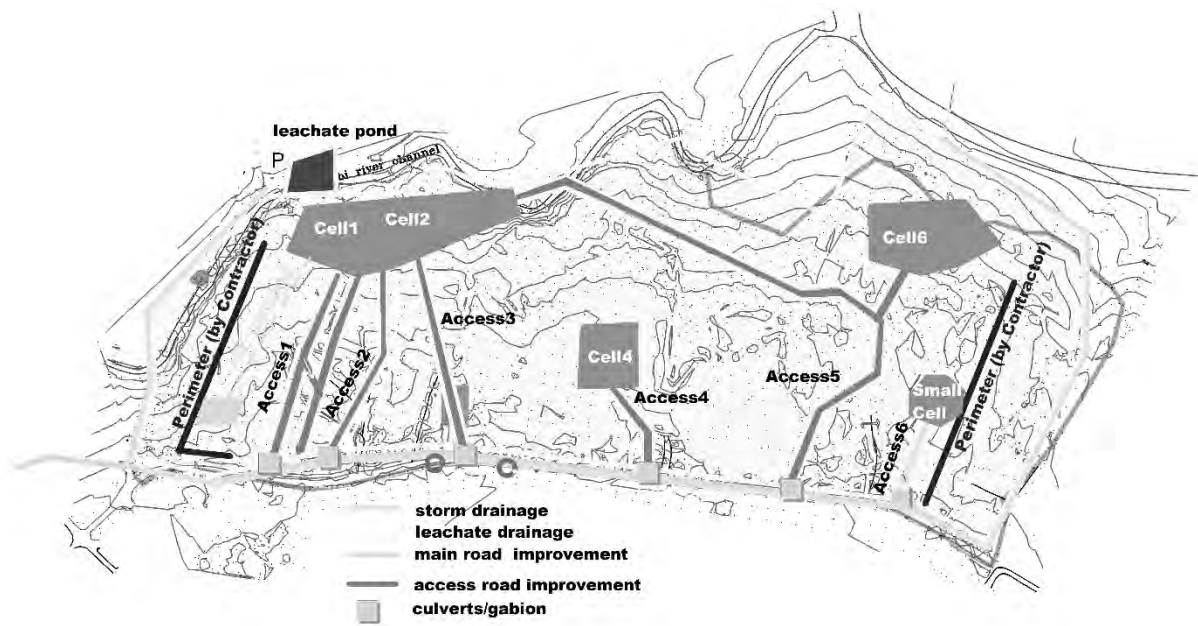


Figure 3: Layout Plan of Dandora Dumpsite in Phase 1

Phase	Description
Phase 1	<p>Dumping Areas: Cell2 (collected by vehicles) and Small Cell (collected by handcarts from the eastern side)</p> <ul style="list-style-type: none"> - Trucks go to Cell2 via Access2, and then dump waste. After dumping they go through Exit1 to go back to J/O Rd. One way in an anti-clockwise passage. - Cell1 is under improvement. - Cell4 will be improved. - Cell6 will be improved. - Waste collected in Dandora districts is transferred manually by handcarts, not vehicles. Through Access6, the waste is dumped in a Small Cell. The handcarts return via the same route. - Heavy equipment uses an exclusive road to access the dumping areas from a parking spot.

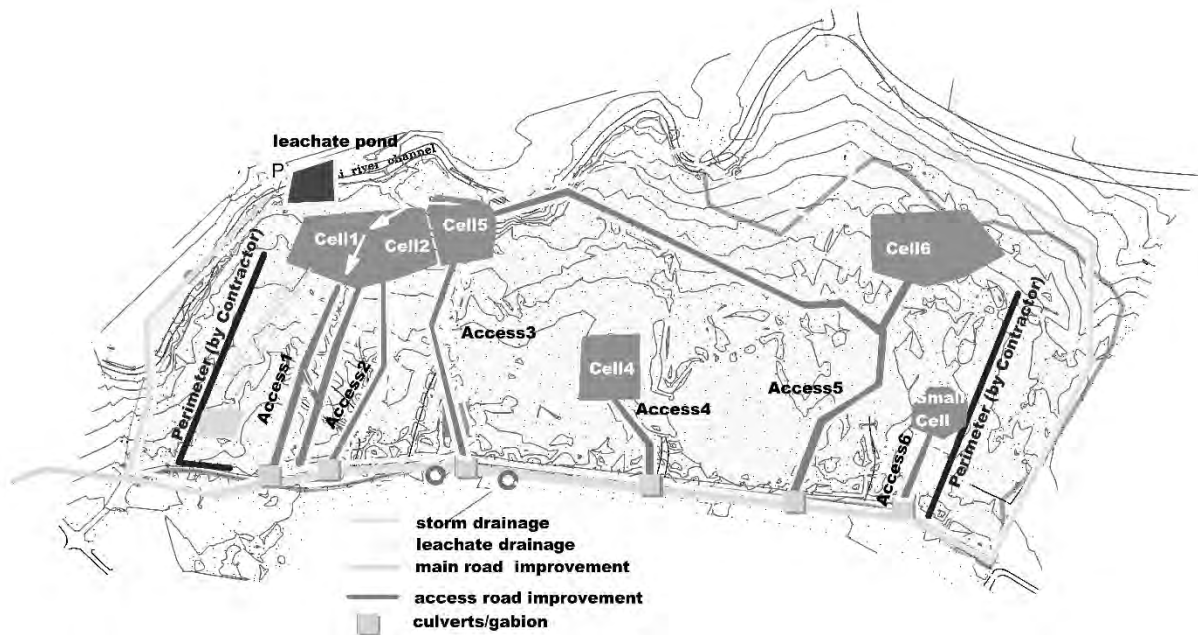


Figure 4: Layout Plan of Dandora Dumpsite in Phase 2

Phase	Description
Phase 2	<p>Dumping Areas: Cell2, Cell5(at lower level of Cell2) and Small Cell</p> <ul style="list-style-type: none"> - Trucks go to Cell1 to dump waste if the dumped waste in Cell2 is excessive. They go through Access3, then via Cell5 and dump the waste. After dumping they go through Access1 to go back to J/O Rd. One way in an anti-clockwise passage. - Trucks go to Cell2 via Access2, and then dump waste. After dumping they go through Exit1 to go back to J/O Rd. One way in an anti-clockwise passage. - Cell4 will be improved. - Cell5 is improved as well as improving Access3 to connect Cell1. Trucks go to Cell5 to dump waste. After dumping they pass through Cell1 and Access1 to go back to J/O Rd. One way in an anti-clockwise passage. There is a connecting passage between Access1 and Exit1. - Cell6 will be improved. - Waste collected in Dandora districts is transferred manually by handcarts, not vehicles. Through Access6, the waste is dumped in a Small Cell. The handcarts return via the same route. - Heavy equipment uses an exclusive road to access the dumping areas from a parking spot.

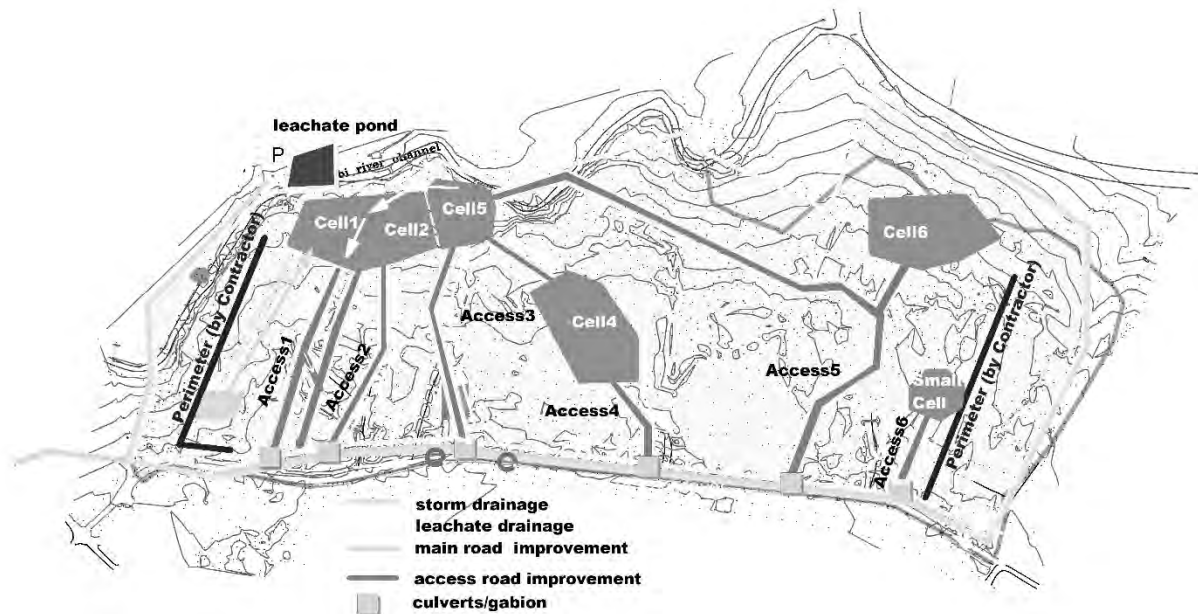


Figure 5: Layout Plan of Dandora Dumpsite in Phase 3

Phase	Description
Phase 3	<p>Dumping Areas: Cell1, Cell2, Cell4, Cell5 and Small Cell</p> <ul style="list-style-type: none"> - Trucks go to Cell1 to dump waste if the dumped waste in Cell2 is excessive. They go through Access3, then via Cell5 and dump the waste. After dumping they go through Access1 to go back to J/O Rd. One way in an anti-clockwise passage. - Trucks go to Cell2 via Access2, and then dump waste. After dumping they go through Exit1 to go back to J/O Rd. One way in an anti-clockwise passage. - Cell4 is improved as well as improving Access4 to connect Cell5. Trucks go to Cell4 via Access3 and Cell5 to dump waste. After dumping they pass through Access4 to go back to J/O Rd. One way in a clockwise passage. - Trucks go to Cell5 via Access3 to dump waste. After dumping at Cell5, they go through Cell4 and then Access4 to go back to J/O Rd. One way in a clockwise passage. - Cell6 will be improved. - Waste collected in Dandora districts is transferred manually by handcarts rather than vehicles. Through Access6, the waste is dumped in a Small Cell. The handcarts return via the same route. - Heavy equipment uses an exclusive road to access the dumping areas from a parking spot.

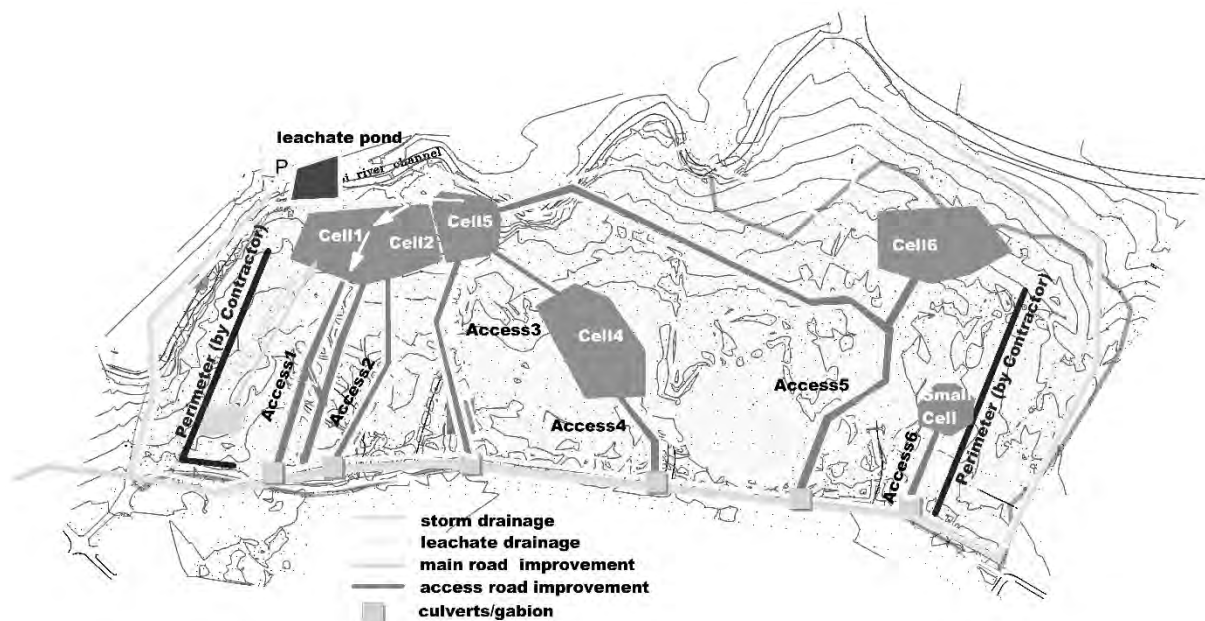


Figure 6: Layout Plan of Dandora Dumpsite in Phase 4

Phase	Description
Phase 4	<p>Dumping Areas: Cell1, Cell2, Cell4, Cell5 and Small Cell</p> <ul style="list-style-type: none"> - Trucks go to Cell1 to dump waste if the dumped waste in Cell2 is excessive. They go through Access3, then via Cell5 and dump the waste. After dumping they go through Access1 to go back to J/O Rd. One way in an anti-clockwise passage. - Trucks go to Cell2 via Access2, and then dump waste. After dumping they go through Exit1 to go back to J/O Rd. One way in an anti-clockwise passage. - Trucks go to Cell4 via Access3 and Cell5 to dump waste. After dumping they pass through Access4 to go back to J/O Rd. One way in a clockwise passage. - Trucks go to Cell5 via Access3 to dump waste. After dumping at Cell5, they go through Cell4 and then Access4 to go back to J/O Rd. One way in a clockwise passage. - Cell6 is improved as well as Access5 is improved to connect to Cell5. After weighing the waste, trucks go through J/O Rd., then through Access5 to dump the waste in Cell6. After dumping, going through the northern connecting passage, they go back to J/O Rd. via Access4. - Waste collected in Dandora districts is transferred manually by handcarts rather than vehicles. Through Access6, the waste is dumped in a Small Cell. The handcarts return via the same route. - Heavy equipment uses an exclusive road to access the dumping areas from a parking spot.

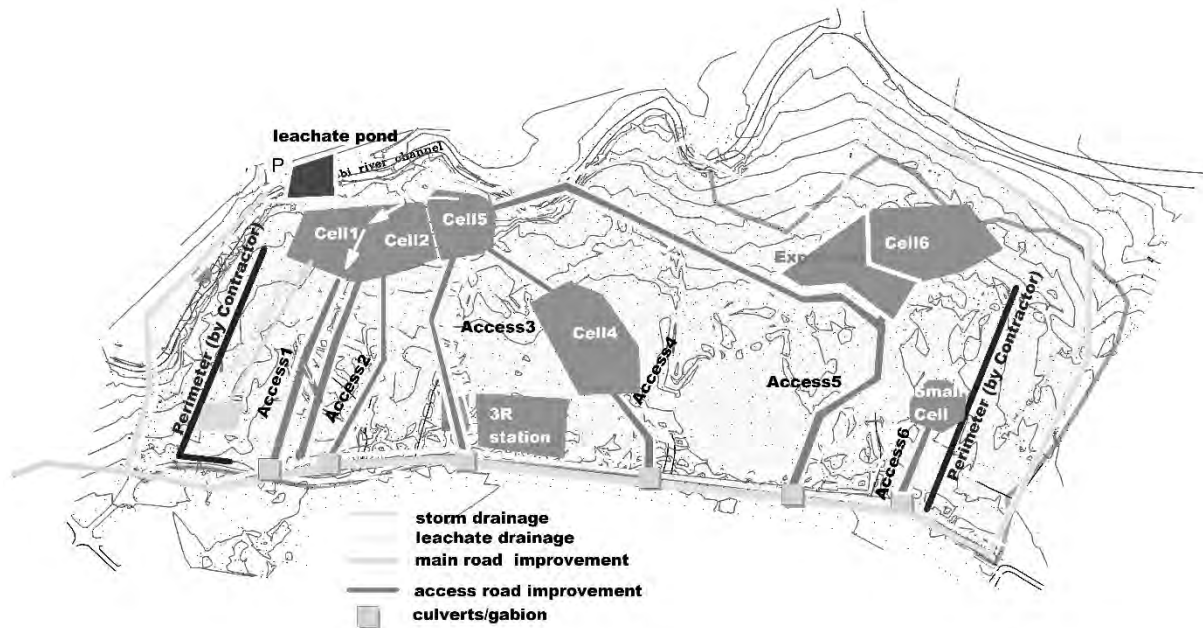


Figure 7: Layout Plan of Dandora Dumpsite in Phase 5

Phase	Description
Phase5	<p>Dumping Areas: Cell1, Cell2, Cell4, Cell5 and Small Cell</p> <p>3R (Recyclables) station is operational.</p> <ul style="list-style-type: none"> - A 3R station is installed between Access3 and Access4. All the stations in plots outside the dumpsite premise are moved to this 3R station. - Trucks go to Cell1 to dump waste if the dumped waste in Cell2 is excessive. They go through Access3, then via Cell5 and dump the waste. After dumping they go through Access1 to go back to J/O Rd. One way in an anti-clockwise passage. - Trucks go to Cell2 via Access2, and then dump waste. After dumping they go through Exit1 to go back to J/O Rd. One way in an anti-clockwise passage. - Trucks go to Cell4 via Access3 and Cell5 to dump waste. After dumping they pass through Access4 to go back to J/O Rd. One way in a clockwise passage. - Trucks go to Cell5 via Access3 to dump waste. After dumping at Cell5, they go through Cell4 and then Access4 to go back to J/O Rd. One way in a clockwise passage. - Cell6 has its area expanded. After weighing the waste, trucks go through J/O Rd., then through Access5 to dump the waste in Cell6. After dumping, going through the northern connecting passage, they go back to J/O Rd. via Access4. - Valuables are sorted and collected in each cell, then go and are gathered in 3R station. - Waste collected in Dandora districts is transferred manually by handcarts rather than vehicles. Through Access6, the waste is dumped in a Small Cell. The handcarts return via the same route. - Heavy equipment uses an exclusive road to access the dumping areas from a parking spot. - Cell1 and Cell2 are covered by soil as intermediate soil cover to prepare for the operation phase.

5.2 Improvement of drainage system

During the improvement phase, each access is improved. At the same time storm drainage and leachate shall be distinguished. Storm water drainage is discharged to the Nairobi River and the leachate is totally isolated from other drains to be stored and returned to the waste layer.

5.3 Operation phase

Once all the Cells are improved in Phase5, Dandora Dumpsite would have 6 dumping areas: Cell1, Cell2, Cell4, Cell5, Cell6, Small Cell and one 3R station, all of which are operational. This is the final figure of improvement in Dandora Dumpsite.

By cycling through all the above phases, the dumpsite with appropriate final disposal would be functional for a certain period.

5.4 Decommissioning phase

After a new landfill site starts operation elsewhere, Dandora Dumpsite will be properly decommissioned.

As for the contents of the decommissioning plan, it should follow the “Nairobi Solid Waste Management Project in the Republic of Kenya, The Preparatory Study (F/S) Final Report (March 2012).” However the contents may be subject to change depending on the waste to be accepted in the new landfill. At least part of the premises could be used to transfer waste to the new site. An overall view of the decommissioning plan is shown below for reference.

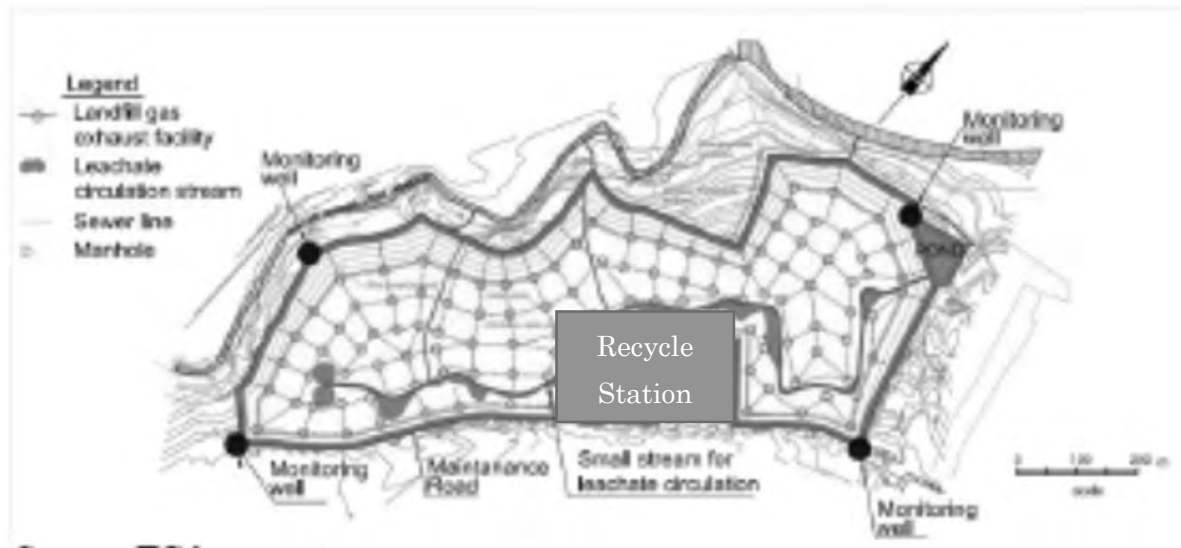


Figure 8: Decommissioning Plan of Dandora Dumpsite

Chapter 6 Environment Control Plan (monitoring)

The improvement plan for the appropriate waste landfilling and disposal in Dandora Dumpsite has been described above. Measures and periodic analysis are required to avoid having any impact on the surroundings.

As for the frequency of the measurement/analysis, it should be in line with legislation in Nairobi. However if there is no legislation or if there is a condition for a specific matter, the measurement/analysis and its record should be done every six months or annually, whereupon the record should be maintained.

During the decommissioning phase, a monitoring plans should be formulated when the detailed design is implemented.

Table 2: Environmental Monitoring Plan

Item	Phase in improvement/ operation	Phase in decommissioning
Leachate quality	Visual inspection for discharge of leachate To stop exposure To stop mixture of rain water and leachate	Prime items for quality analysis are done
River water in the Nairobi River (upstream/ downstream): measuring points to be fixed	-	The same items as discharge index are analysed
Landfill gas	If fire breaks out, it shall be promptly extinguished	Periodical measurement from gas ventilation pipes

Chapter 7 Financial Plan

As for the operation in Dandora Dumpsite, including improvement work, this should basically be shouldered by NCC. Conversely, for the decommissioning, there would be scope to involve the yen loan project as a component.

The landfill operation plan for Dandora Dumpsite should be amended flexibly and effectively as per the variation of project items or its process.

ANNEX 4.5 Guideline for Dandora Dumpsite Operation in Nairobi

City County

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Guideline for Dandora Dumpsite Operation in Nairobi City County

March 2016

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Chapter 1 General

1.1 Purpose

This guideline aims to improve the operation by confirming the basic points for a series of practices in Dandora Dumpsite, such as fulfillment of the dumpsite function, appropriate reception of incoming waste, control of reception, appropriate off-loading of waste, levelling of waste dumped and so on.

In parallel, it also indicates staff assignment and record of data for proper operation in Dandora Dumpsite.

1.2 Scope

This guideline is applied to activities related to the reception, processing, and disposal of incoming waste in Dandora Dumpsite.

1.3 Policy of the guideline

The operation in the current situation in the dumpsite has issues which could not be solved without mutual experience, so the guideline leads to a certain level for each person in charge in NCC.

Considering the practical side of Dandora Dumpsite operations, not every item in the guideline could be accomplished easily. Accordingly, it is suggested that items NCC can implement easily should go first.

In the meantime, items that have been accomplished should be implemented continuously during the service life of the dumpsite. It is crucial to maintain the improvement for the operation.

Chapter 2 General in the Dumpsite Operation

2.1 Operation method for the dumpsite

In principle, Dandora Dumpsite is treated as a facility to dispose waste generated in NCC smoothly, whereupon there is a policy to minimise the impact of the dumpsite operation to the surroundings.

2.2 Staff assignment of the dumpsite

To operate the dumpsite properly, staff assignment for the dumpsite is formulated as shown below.

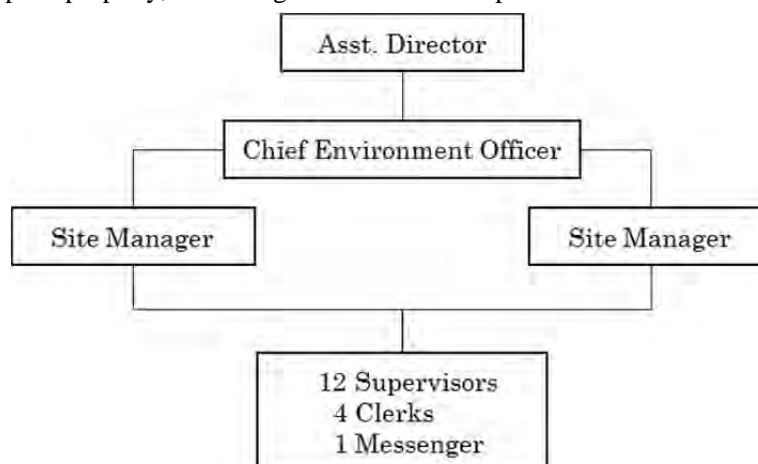


Figure 1: Staff Assignment for the Dumpsite Operation

There should be a staff assignment table in the dumpsite office for each the dumpsite supervisor to grasp all on-site activities. (Shown below)

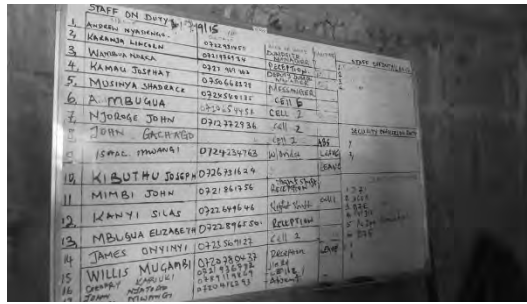


Photo 1: Staff Assignment Table

Chapter 3 Waste Reception Control

3.1 Management system for the reception control

The reception control of all incoming waste is carried out in the clerk office located on the eastern edge of the site.

Procedures for waste reception control are shown below.

Table 1: Procedures for incoming waste control

Category	Description of incoming waste control	Remarks
NCC directly operated vehicle	Approach from the west → weighing at reception → dumping of waste → exit	ID of each vehicle and its weight is registered.
NCC hired vehicle		
PSP vehicle		
Handcart in Dandora districts	Approach from the east → dumping waste in the designated area near the perimeter wall → exit	No weighing

3.2 Basic issues for the reception control

(1) Reception control at the exiting weighbridge

Before receiving the incoming waste, all the waste vehicles shall make a maximum of two queues.

For smooth moves after weighing, the first vehicle in the queue has at a minimum 11m clearance to the edge of the weighbridge.

If possible, there should be a limit line for the waiting queues of vehicles.

(2) Formulation of reception control (i.e. inappropriate incoming waste)

a. Prohibited waste to be received

The following items are prohibited to be received and disposed of at the dumpsite:

- Harmful to the surroundings: hazardous waste, infectious waste and waste with abnormal odor
E.g. chemicals, fuels, infectious medical waste, manures and carcass
- Items difficult to properly dispose of: huge and bulky waste

Under current circumstances, incoming waste is sorted manually by waste pickers. Accordingly, it is prohibited to receive waste which may harm workers in the dumpsite.

b. In case that the prohibited waste is received

Under current circumstances, it is difficult to find interfusion of the prohibited waste before reception. Accordingly, in case of the incoming prohibited waste in the mixture, the following should be implemented:

- i) Isolate the disposed area from the surroundings,
- ii) Identify of the carrier and give instruction to them

(3) Record of operation with ledgers

Currently, the situation of incoming waste reception is recorded with a weighing system to log data in daily, monthly and annual basis.

However, among the dumping areas, it is not yet determined how much waste is disposed of in each dumping area.

To grasp the accumulated waste in each dumping area sequentially and since each dumping area has a limited capacity; the amount of waste disposed of should be recorded on a daily basis.

The amount is clarified based on the report from S/Vs.

In parallel, S/V instructs truck drivers which dumping area is to be selected in advance, whereupon the total amount of dumped waste daily / weekly should be reported. Accuracy might be low at first but should improve in time.

Also, Site Diary, which NCC has produced over one year, has records of heavy equipment assignment. The Diary should be digitalised to consolidate the basic information for assignment plan and management.

Chapter 4 Waste Treatment and Disposal

4.1 Waste transfer in the dumpsite

There are 6 dumping areas named Cell1, Cell2, Cell4, Cell5, Cell6 and Small Cell. Small Cell out of the 6 is the only dumping area exclusively for handcart unloading of waste and the others are dumping areas for waste collection vehicles.

To control the site operation effectively, active and inactive dumping areas are strictly distinguished,

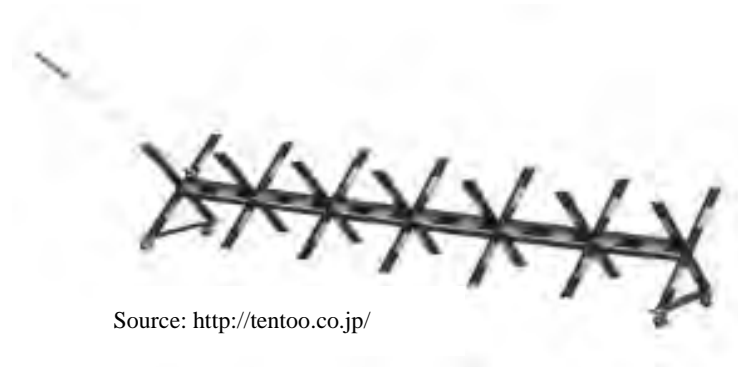
whereupon collection vehicles are conducted to the active dumping areas.

Aside from this, information maps can be shown to drivers during weighing, if necessary.

Also, passages in the site should be one way (in initial phases only) to miss the traffic caused by collection vehicles around the time of weighing waste.

4.2 Passage control for non-utilised access roads

In order NOT to enter prohibited access roads, a big stone or other barricade should be set at the entrance of the access roads.



Source: <http://tentoo.co.jp/>

Figure 2: Image of a Barricade

4.3 Waste dumping

The waste dumping method is shown in a table below.

Table 2: Waste Dumping Method

Category	Dumping method
(1) NCC waste collection vehicle (including NCC-hired trucks)	Dumping by hydraulics power Exit just after dumping
(2) PSP (Private Service Providers)	Basically dumping by humans Folk hoes are used for dumping waste by a couple of men.

4.4 Waste sorting (manual, only for PSP)

PSP collection vehicles, which belong to private institutes, transfer recyclables to the recyclables station after sorting them from other waste.

There are, at least, 19 classifications for the waste as shown below. In the dumping areas, certain recyclables are collected in one bag and several bags are transferred to the recyclable station.

Table 3: Classification of Recyclables in Dandora Dumpsite

	Item	Description	Remarks
1	White papers	Paper	
2	Cardboard	Paper	
3	Plastics	Plastics	
4	PET bottles	Plastics	Called “quenches”
5	Milk papers	Plastics	
6	White papers	Plastics	2Ksh/kg
7	Colored papers	Plastics	
8	Drinking straws	Plastics	
9	Sandals	Plastics	
10	Glass (white)	Glass	
11	Glass (green)	Glass	
12	Glass (brown)	Glass	
13	Cans (steel)	Metal	
14	Cans (Aluminum)	Metal	
15	Cans (Tin)	Metal	
16	Bottle tops	Metal	
17	Burnt cans	Metal	To remove surface paint
18	Sacks	Textiles	Made from plastics
19	Sponge	Reusable	

4.5 Proposal to improve collection efficiency

In our survey, almost all PSP trucks re-collect the valuables after dumping all the waste in the dumping area, remained in the dumping area for approx. 90 minutes with each trip of the truck.

This might be a very unique practice not seen elsewhere.

Here it is proposed that special vehicles “in common” be used for reloading the recyclables transferred to the sorting area.

The special vehicles are owned and operated by NCC.

Accordingly, all PSP trucks would save time for unloading and loading in the dump site. Finally they could collect more waste in the collection areas.



Photo 2: Reloading of the Recyclables

4.6 Valuable storage in the property

In Dandora Dumpsite, many waste pickers collect recyclables. There is a representative procedure for collection as follows:

- i) 6 or 7 staff group for sorting
- ii) The sorted recyclables go to middlemen working at the site
- iii) Middlemen gather recyclables by type to be bought by factories using these recyclables

Recently, the recyclable station is located nearby the dumpsite and the utilisation of the land is really disordered. However, all recyclables could be controlled within the designated recyclables area in the dumpsite by implementing effective bunching and storage. The packaging features are explained below.

(1) Packing in flexible container bags

Collection and storage is done using 1cu.m flexible container bags. When recyclables go to recycling factories, only the contents of the flexible bags are offloaded, whereupon the bags themselves go back to the site for re-use.

(2) Packing in sacks

Sacks are used to collect recyclables personally or to store and transfer heavy recyclables such as glass and metals. It is originally a packaging of threshed 50kg rice.

(3) Prohibition of storage without packaging

Cartons and synthetics are generally stored on the ground. However, these recyclables on the ground often require considerable space and scatter when the wind blows. Ground storage of cartons should basically be prohibited and the storage place should be strictly designated.



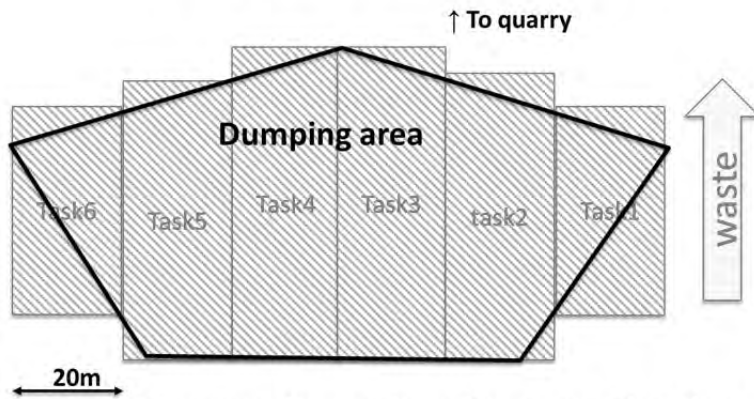
Figure 3: Storage of Cartons

4.7 Leveling and compaction of waste

(1) Schematic dumping place setting

As shown in the figure below, the dumping area shall be identified in order from the edge to the opposite edge of the area. Implementing this, compaction area by dozers can be minimised properly.

Waste clearance of dumping areas

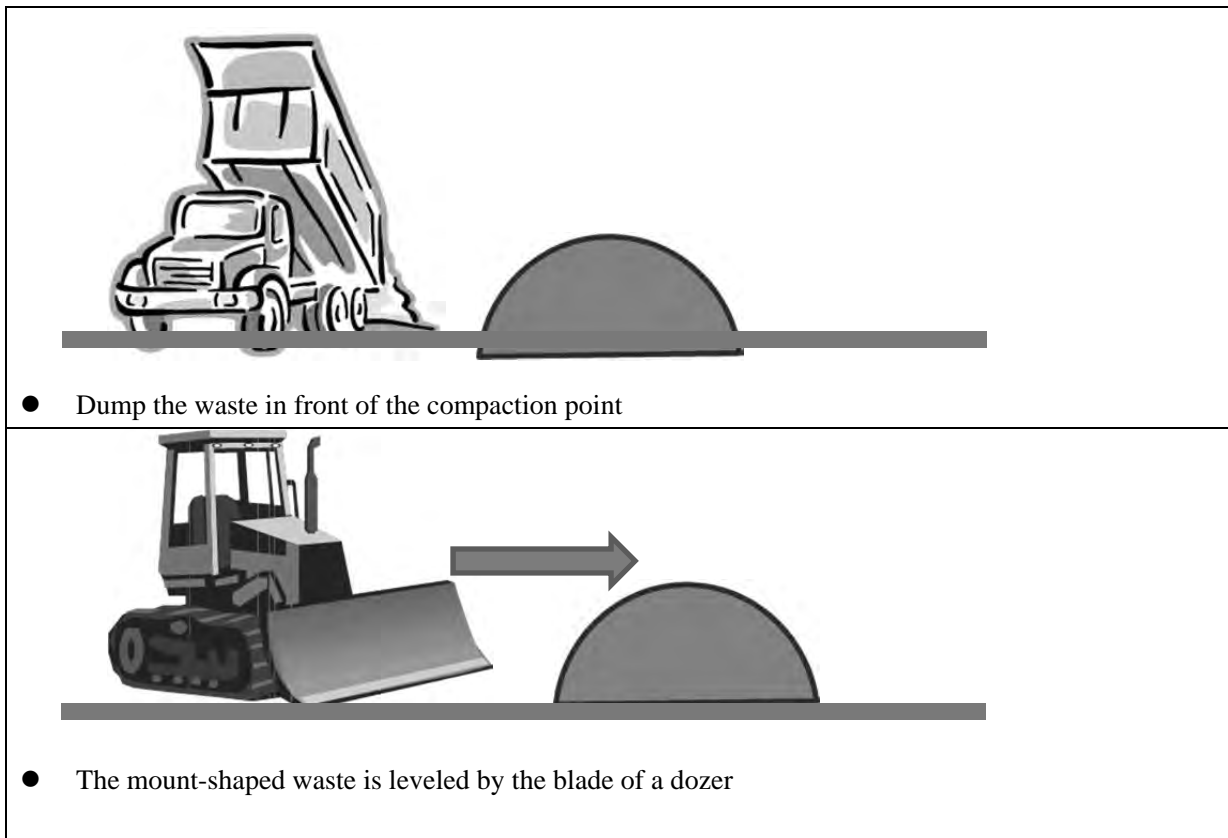


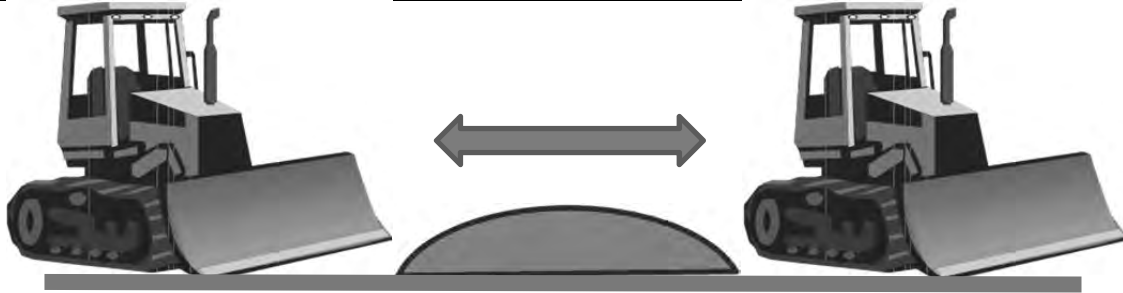
- Remove the waste in the same direction.
- Do not duplicate. Each dozer has each task respectively.

Figure 4: Direction of Levelling and Compaction

To make a dense waste layer, open dumping of waste without change in the site is not suitable but pre-treatment is necessary before dumping the waste.

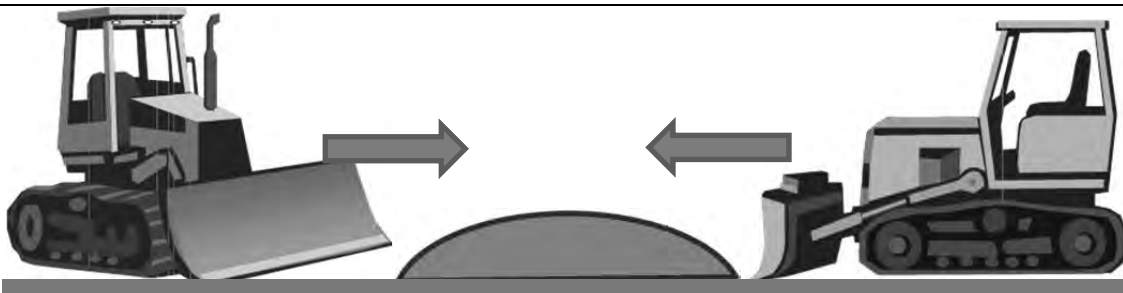
First, waste is off-loaded in front of the compaction point, whereupon the mound-shaped waste is leveled by the blade of a dozer. Once levelling has started, using the dozer's own weight, the dozer compacts the dumped waste by moving back and forth several times to crush it and break it into pieces. Thus this practice can make the waste dense and also reduce its porous part.



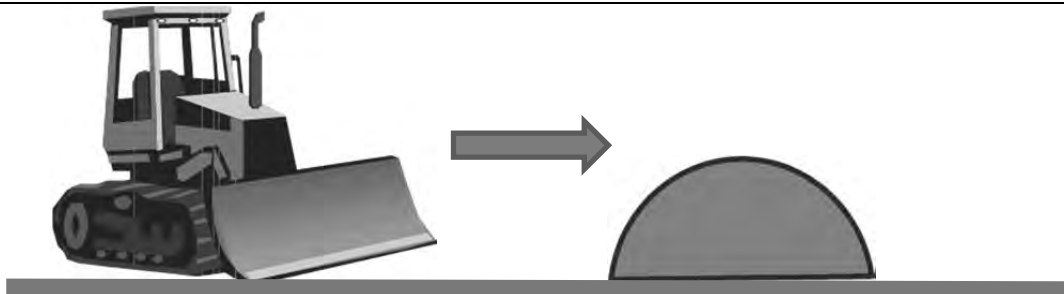


- Using the dozer's own weight, the dozer compacts the dumped waste by moving back and forth several times to crush the waste and break it into pieces. Thus this practice can make the waste dense and also reduce the porous part in the waste.

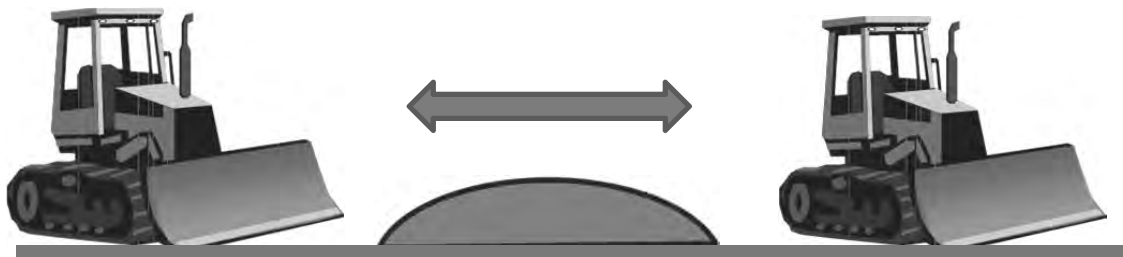
The crushed and dense waste is again gathered by the blade, whereupon the same thing is repeated several times for even more dense waste.



- The crushed and dense waste is again gathered by the blade



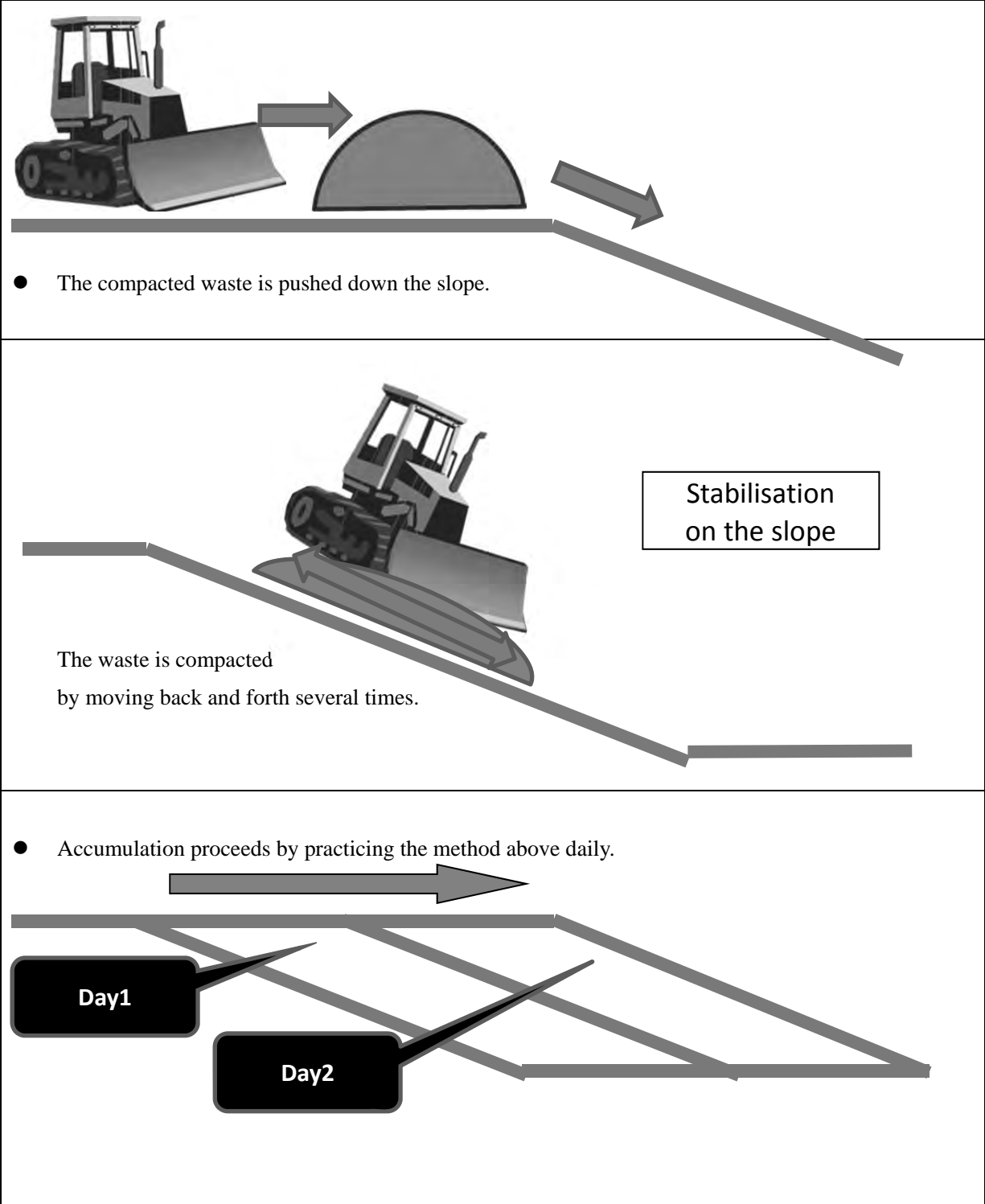
- The gathered waste is levelled again by a dozer.



- The waste is compacted several times with the weight of the dozer.

Under current circumstances, dumping areas are almost fluffy, but once the compaction shown above is implemented continuously, the more waste layer formulated would be more robust than ever.

Secondly, without direct dropping the compacted waste by dozers' work down to the quarry, the waste is pushed down on the landfilling surface in a 1:3 gradient, utilizing the dozer's own weight and compacting the waste by moving back and forth several times.



Points of attention

1. Slope formation (compaction of the waste on the slope) is the key factor:
 - Compaction by dozers can drastically reduce unintentional fires
 - It can reduce bugs (flies).
 - It can reduce the waste scattering and smell.
 - It can reduce the amount of leachate.
 - It can prevent landslide of the waste accumulation in case of rain.
 - It can minimise the amount of cover soil (Assumed thickness of cover soil is the amount for covering only the whole surface, the amount of soil required for cover would be reduced because the compacted waste is flat)

The waste layer formed by running through compaction has higher density due to the effect of compaction than the layer formed by open dumping. Not only is the layer expected to have highly mechanical characterised ground, it can also be effective for preventing fire and odor, reducing the soil cover amount and so on.

2. A bad example is dumping the waste from the top of the slope without compaction.
 - Fire expands at high speed.
 - Bugs, waste scattering and odor
 - ※ The current practice using the quarry is “temporary.”
3. Slope angle
 - 1:3 -1:4
 - It need not be measured accurately.
4. Thickness of the waste layer
 - Should be designated before starting
5. Dumping point from a collection truck
 - Dump in front of the slope, whereupon it is compacted by heavy equipment several times
6. Gather waste by heavy equipment, whereupon it is compacted again. This is idealistic. However if fuel is scarce, the waste is pushed away to the slope without compaction on the slope.
7. Access road for collection vehicles
 - As the slope structure proceeds further, the distance which the vehicle runs would be longer, whereupon the vehicle would have to traverse the waste layer, which might cause punctures, distress to lower parts of the vehicle and spinning free in the rainy seasons.
 - Accordingly, soil cover is necessary. Without maintenance of access, collection vehicles would dump anywhere they want.

- Hard cores, slags, soils and so on can be secured on a robust road.
8. Supervisors instruct drivers where to dump the waste. Around the dumping area, supervisors control all the passage caused by heavy equipment and trucks. (they should at least secure control of dumping)
 9. Supervisors inspect the interfusion of inappropriate waste.
 10. As for work for waste pickers, there should be common rules, including safety measures, to prevent them from the risk of accidents with machinery.

4.8 Soil cover of waste (practices in future)

(1) Necessity for soil cover

Soil cover is far more effective for preventing odor, waste littering, destructive insects and fire generation and expansion. It also enhances the landscape.

Table 4: Purpose of Soil Cover

Purpose	Description
Control of leachate amount	Soil cover is appropriately worked to achieve secure water penetration prevention and gas exchange in the waste layer.
Waste littering prevention	Soil cover is promptly worked without neglect to prevent waste littering outside the premises.
Odor prevention	Soil cover is promptly worked to prevent odor diffusing out of the premises.
Fire prevention	To prevent fire, soil cover is performed promptly. In case of fire, additional soil should be stored on the premises as extinguishing material.
Prevention of destructive insects	Mosquitos, flies and other destructive insects shall never be allowed on site. Thus soil cover shall be done.
Closure of completed landfilling area	The completed landfilling area should be closed with soil cover of about 50cm thick by covering the open area.

(2) Method of soil cover

Method of soil cover is generally carried out to use equipment for levelling and compaction. The soil should be compacted strictly and uniformly. The method of soil cover should be conducted as follows:

- i Considering the gap between the volume in compacted state and that in the loose state, the amount of soil to cover should be secured. Cover work of quality as assumed must be performed.
- ii Liner structure on the slope, leachate collection pipes and gas ventilation pipes are protected by using a backhoe which can work for the site at a certain distance.

- iii Soil cover in the flat part should have a slope of a 2-3% gradient to discharge the storm water. Once storm water stands still, passing vehicles and levelling work, compaction work and all the activities would be affected. Moreover, penetrated rain water in the waste layer would result in an increase in leachate, which could burden the leachate treatment devices.

(3) Management of cover material

Covering material should be procured within the site premises if possible. However most of the accumulation resembling red soil consists of burnable waste. Accordingly, it is suggested to procure red soil as covering material from construction sites or some other sites outside.

Soil cover is done daily/ weekly to a thickness of 20cm. The covered area is assumed first and it is then necessary to store the soil for several weeks since it would be difficult to procure the soil within the premises of the site.

Table 5: Material Managing Sheet (example)

as of XX/XX/2016							
Cover Material Managing Sheet							
Unit:tons							
	Stockpile	Cell1	Cell2	Cell3	Cell4	Cell5	Cell6
Storage1	XXXX	20	0	0	0	0	0
Storage2	XXXX	10	50	0	0	0	0
Storage3	XXXX	0	0	10	10	10	0
Storage4	XXXX	0	0	0	0	5	5

Note: The table should be updated daily

Chapter 5 Trouble Shooting

5.1 Dumped waste in areas other than dumping area

Waste unloaded on the road may obstruct the passage of trucks and heavy equipment. Moreover it can induce potential illegal dumping.

Accordingly, the waste unloaded at the non-dumping areas should be transferred to the proper dumping area as a priority, whereupon NCC should detect the truck and the driver that dumped to instruct them.



Photo 3: Waste Dumping on the Roadside in the Dumpsite

5.2 Re-reception of off-site disposed waste

Under current circumstances, some waste is dumped around Dandora Dumpsite and does not hinder

ordinary waste disposal operations. However, it could trigger unnecessary waste accumulation and inappropriate land utilisation, thus the disposal plan should be formulated first and then re-reception and disposal of the waste should be implemented based on the disposal plan.

Chapter 6 Landfilling Work Process Control

6.1 Projection of incoming waste

Based on the existing data, annual incoming waste can be projected. The projected data is then distributed in the month considering the existing monthly fluctuation. Aside from those projections, the capacity of each dumping area is projected. As well as this, waste collection vehicles entering the site are confirmed based on the number and type of vehicle. A duty cycle comprising dumping, recyclables reloading and exit should be assumed, whereupon the available waste amount for each dumping area is projected. (i.e. PSP truck requires 1.5hours per duty cycle)

6.2 Landfilling work process draw-up

Based on the capacity of all six dumping areas respectively, a landfilling work process is planned. Active dumping areas at the same time should be minimised. Even 2nd landfilled layer should be considered in the same timeline as the 1st layer version. The 2nd landfilled layer should be kept in a gradient up to 1: 2.5. Thus the 3rd and 4th layer would be stabilised.

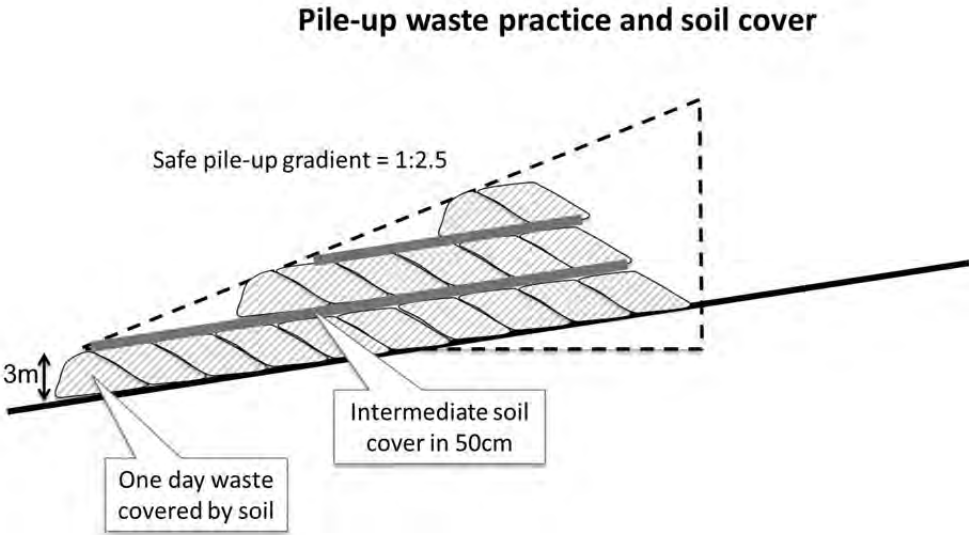


Figure 5: How to Pile-Up Waste

6.3 Work implementation and process control

With planned timeline and consideration of landfilling area moving, dumped waste and landfilling waste are projected to make a practical timeline of work. Then all the work is controlled by the progress based on

the timeline.

Here, NCC should grasp and consider the capacity and workability of each heavy equipment.





The timeline shall be reviewed every 3 or 4 months.

Chapter 7 Health, Safety and Environment Control

7.1 Countermeasures for fire and precaution of fire

In dry seasons, the waste accumulation is exposed to high temperature, which could promote the retention of generated methane gas, which can easily catch fire. This fire could also generate harmful gas. This is the one of the big issues in terms of the direct impact on site workers and the surroundings, thus fire prevention and control should be well considered.

Fires occur due to the accumulation of heat and appropriate oxygen concentration, whereupon the fire may break out and expand. Accordingly, the most effective method to prevent and extinguish fire is to reduce oxygen concentration in the accumulation. There are some methods to extinguish fires as shown below.

	
<p>1. Fire occurs</p>	<p>2. Although fire is occurring, heavy equipment is compacting burning ground with its own gravity to remove oxygen from the layer.</p>
	
<p>3. Once extinction is confirmed, watering is done.</p>	<p>4. After the three steps, soil cover is implemented to prevent further fires.</p>

7.2 Scattering prevention of waste

It is necessary to implement soil cover periodically (daily, weekly) to control the littering of waste by winds after landfilling.

7.3 Safety management for workers

Most site workers currently work without protection. It is suggested to wear protective items shown below.



Source: www.easyguides.com.au

Figure 6: Protective Equipment

Personal Protective Equipment (PPE) is clothing or equipment designed to control risks to health and safety in the workplace. Examples of PPE are shown below:

Table 6: Purpose of Personal Protective Equipment

Items	Purpose
Hard hats, helmets & sun hats	Head protection
Respirators, masks & cartridge filters	Breathing protection
Safety boots	Foot protection
High-visibility garments,	Work at night
Cloths with long sleeves, aprons and pants	Overall body protection
Goggles & safety glasses	Eye protection

*ANNEX 4.6 Guideline for Dandora Dumpsite Maintenance in
Nairobi City County*

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Guideline for Dandora Dumpsite Maintenance in Nairobi City County

March 2016

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Chapter 1 General

1.1 Purpose

This guideline is established to prioritise smooth disposal of all the incoming waste “UNDER ANY WEATHER.” The features of the basic structures, such as the main road, access roads, storm water drainage system and the dumping areas, are defined and how to maintain their facility is also formulated. Moreover, the proper maintenance and management of the disposal site is discussed.

[REASON why it is economic if proper maintenance is done.]

Doing ad hoc maintenance leads to repeated work of the same kind and in the same place.

For example, not making drains makes the lower layer of the road wet during rainy weather. Even though the road surface is strictly compacted, road’s strength remains weak.

Skipping compaction works on the dumping area will render small waste vehicle unable to pass through and heavy equipment will be needed to help the vehicle.

1.2 Scope of application

The guideline is applied to buildings, roads, drainage facilities and landfill structure in the property of Dandora Dumpsite. Except the equipment installed, the maintenance and management of equipment are in the scope of “Guidelines for Dandora Dumpsite heavy equipment maintenance in Nairobi City County.”

1.3 Policy of the guideline

To maintain the dumpsite, many matters cannot be done without experience of field works. The guideline aims to keep the maintenance quality at a certain level.

As of March 2016, not all the tasks for the planned improvement shown in “Dandora Dumpsite landfilling work plan in Nairobi City County” had been completed. Therefore the guideline covers not only the maintenance but also the tasks related to the necessary improvement.

If there are contents which cannot be done under present circumstances, promptly modifying the guideline is recommended.

For maintenance purposes, smooth operation of the dumpsite without delay, especially causing inconvenience for the waste collection vehicles, is a top priority and should be improved.

Dandora Dumpsite maintenance includes planned and preventative maintenance, which targets economic management.

In addition, it is crucial to maintain the facility continuously. It should be kept in mind that neglect for a few days away might affect the final disposal function.

To operate the dumpsite, the person in charge of maintenance shall maintain by checking the following items with other supervision team members:

- Common understanding of the problem

- Understanding of the importance of drainage
- Learning the practical recovery
- Internal discussion of working method
- Prioritisation of each work

Chapter 2 General Information on the Dumpsite Maintenance

2.1 Maintenance method of the dumpsite

Purpose of the dumpsite maintenance is the following items.

- a. To avoid any impact on the surrounding environment
- b. To prevent accidents due to the malfunction and breakage of the dumpsite
- c. To provide uninterrupted delivery of waste, landfill operations and leachate treatment
- d. Proper and economical operation of the equipment and devices
- e. To prevent damage due to landfilling work
- f. Health care for clerks and workers

Maintenance and management of the dumpsite are usually classified in the following items:

- Damage prevention: prevent damage to facilities caused by landfilled materials in landfilling.
- Cleaning: cleaning storm water drainage system and dredging.
- Inspection: checking the progress of property damage or defects. It shall be planned to arrange time, frequency, or the items to be implemented. There are various ways like physical examination or other scientific analysis using photography, visual inspection and measuring equipment.
- Repair: repairs to restore damaged facilities or updates.

2.2 Maintenance management system of the dumpsite

(1) Security of the equipment

For maintenance, equipment for the maintenance works shall be secured. The following heavy equipment is usually required at all times:

- Excavator
- Dozer
- Dump truck (Tippers)

Since Dandora Dumpsite is operational 24/7, it is important to secure dump trucks to remove obstacles quickly and they must have a self-tipping function.

(2) Management of drawings

To share information with staff members or stakeholders, dumpsite-related drawings should be kept at the dumpsite.

Chapter 3 Maintenance of the Landfill Structure and Facilities

3.1 Target items for the maintenance

The target items are as follows:

- John Osogo Road: The main road for the entry and exit to the dumpsite.
- Access roads: Access roads from the main road to the dumping areas.
- Storm drainage: Facility to take out runoff from roadways and the dumping area.
- Leachate drainage: Facility to remove leachate generated in the waste heap.
- Dumping areas: Places to dump the waste.
- Waste heaps: Mountains of waste piling up.
- Sign boards: Signage for the guidance and instructions on site.
- Weighbridge house: Office building for measuring waste and logging waste data.
- Guardhouses: They are located to the East and West of the dumpsite property with security.

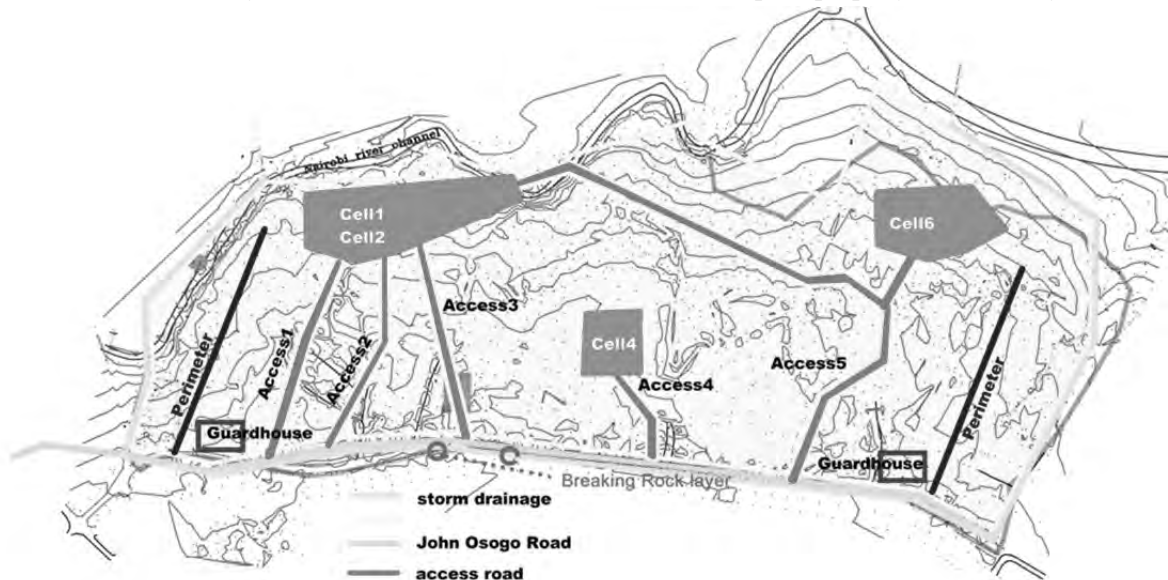


Figure 1: Current Dandora Dumpsite

3.2 Repair criteria

(1) Need for and purpose of repair

Each facility has a specific function for operation, and they are interconnected with each other. Once some facilities are not functional, the entire dumpsite may malfunction. You should promptly repair and restore work on the damaged facility.

(2) Repair Criteria

To date, repair works are performed after parts broke and when there is a spare time to repair. This practice has been repeated again and again. However, since incoming waste is received on a daily basis, the repair should be done before they break.

The point is to promptly find "the parts which will break imminently," and repair them immediately.

(3) Record of maintenance

Now the dumpsite staff members can rearrange the maintenance record, whereupon they shall record the maintenance with the implementation date, to be finally compiled in a facility ledger. Staff members can update the repair status in the ledger.

Chapter 4 Check-Up

Inspection types are described below.

4.1 Daily inspection

To landfill with no adverse effect on the surrounding environment, this type of inspection mainly aims to detect damage in early stage and prevent damage to the structures. If damage is found, NCC shall consider the causes and the need for repair.

4.2 Emergency inspection

This is an inspection to check whether a facility is damaged in an emergency such as heavy rain.

After rain, ordinary work in the dumpsite is relatively difficult. Therefore, in the early morning before the peak hours, specifically at around 8:00, following difficulties shall be eliminated.

- Waste on the access road.
- Piled-up waste on the side of the road.
- Collapsed drainages.

Chapter 5 Maintenance of Storm Water Drainage Facilities

5.1 Purpose of the management

Once the function of the storm water drainage is damaged, the volume of surface water flowing in the lower layer of the access road or waste heap will increase, which will weaken these facilities. In some cases, this may also lead to the slope sliding and collapsing.

5.2 Rain water drainage facilities maintenance procedures

It is necessary to manage as describe below.

- Periodical maintenance and rehabilitation to maintain the facility function and prevent damage.
- Striving to detect abnormalities early to prevent any impact on other facilities and obstacles on landfilling due to damage to the facility.
- Repair after developing a plan for repair when the facility is damaged.

In case that there is drainage along the access road, to prevent obstruction by corruption of the road edge, the road shall be wide and drivers on site should be instructed and educated to drive carefully.

The amount of earth and some other materials inflow varies according to locations and seasons, thus it is recommended that the drain be cleaned in a planned way, which covers frequency control by dividing drainage parts. When developing the cleaning plan, it should include necessary items as follows:

(1) Cleaning plan

- Safety of personnel
- How to work
- Use clean utensils
- Sediment discharge and disposal method
- Working time and process

(2) The frequency of cleaning

Cleaning is recommended more frequently than the intervals shown below. In particular, open ditches should be addressed, such as cleaning in advance, the rainfall in the rainy season.

- Open ditch: Twice a year or more
- Culverts: Once a year or more

5.3 Storm water drainage repairs

In case of repair, it is necessary to consider the repair method and form the repair plan, considering the reasons for the damage and the extent thereof. It should be considered when NCC requires a repair plan as described before.

- Impact on the surrounding environment
- Impact on other structures
- Impact on landfilling work
- Necessary expenses

5.4 Work order of access roads and drainage

Work is done from the downstream side.

After the excavating reaches the water and water is induced downstream, drainage can be cleaned.

With the highest caution, the repair shall be performed after draining all the water off.

[Example of work]

- If there is no drainage, rainwater can certainly damage the foundation of access roads.
- No exits, no drainage.
- Not only surface water but water in the layer still stay.



- If drainage installed, the water goes by gravity.

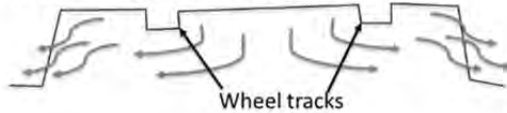


Figure 2: Necessity of Drain

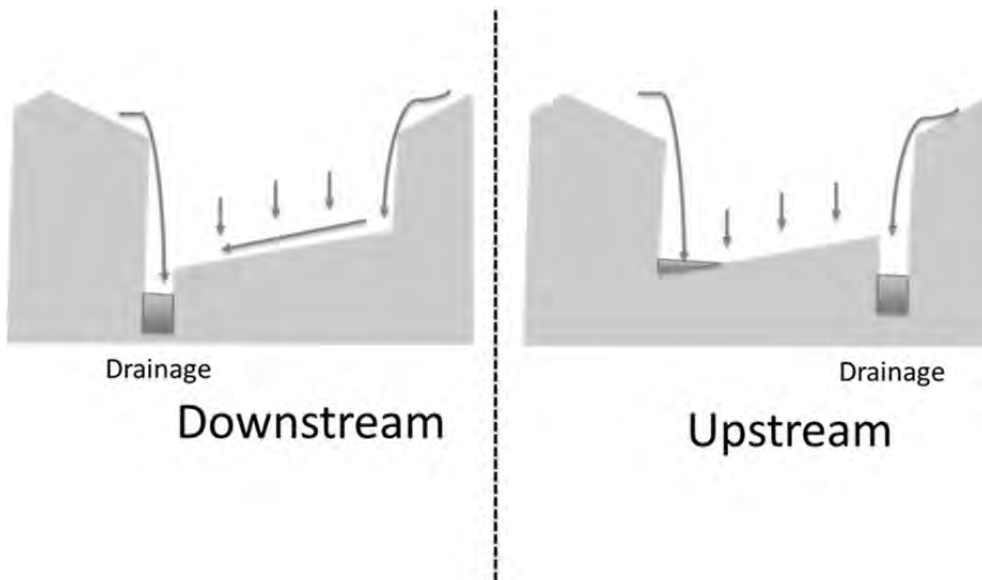


Figure 3: Examples of One-Side Gradient Drainage



Figure 4: Drain 1 Drain on Both Edges (combination of rainwater and leachate)



Figure 5: Drain 2 Drain on Both Edges (combination of rainwater and leachate)



Figure 6: Road Improvement after Drainage

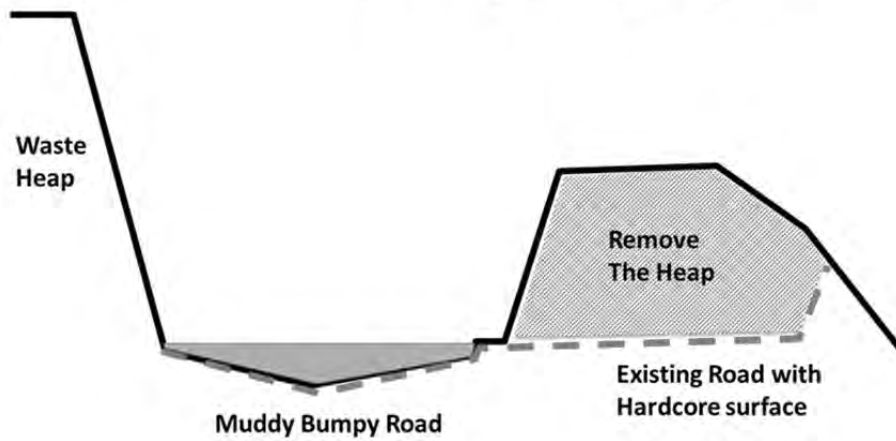


Figure 7: Diagram Drain Installation



Figure 8: Installation of Gabion (substitute of culvert)

Recovery of exist passage



Drainage installation

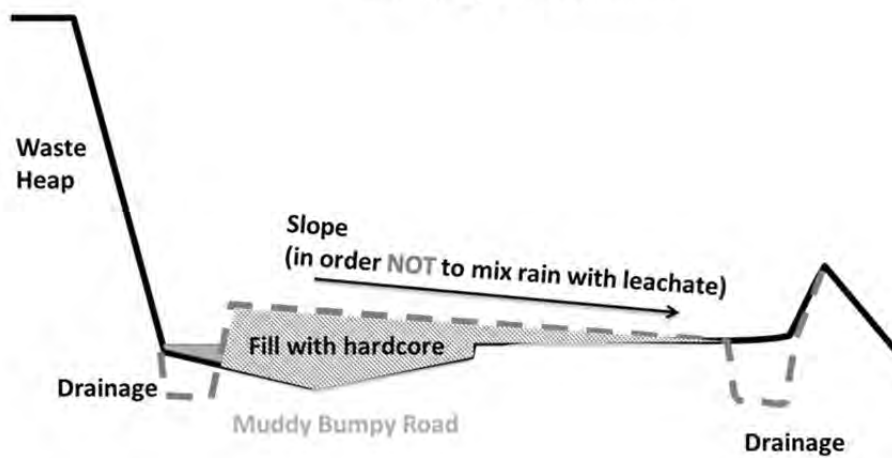


Figure 9: Installation of Drainage

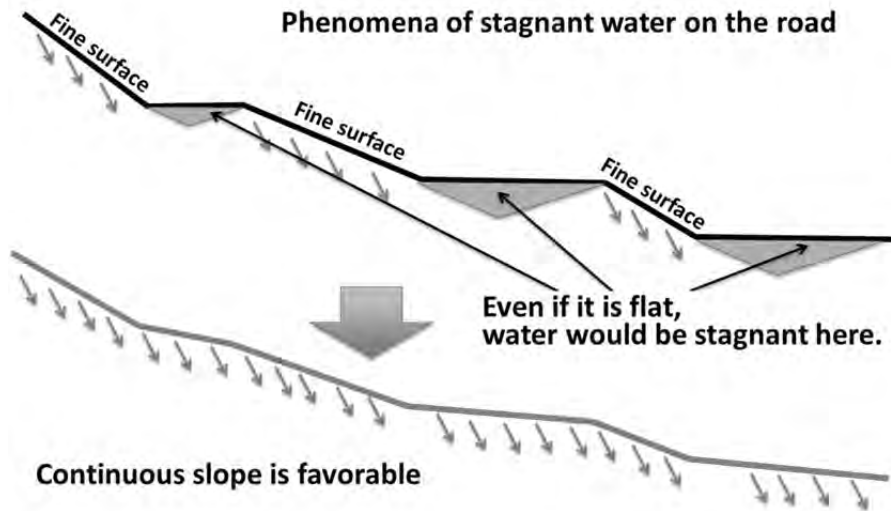


Figure 10: Phenomena of Stagnant Water on the Road

To protect the base course from the water, it is recommended to make temporarily ponds in case it takes considerable time to improve the drainage facility. (See figure below).

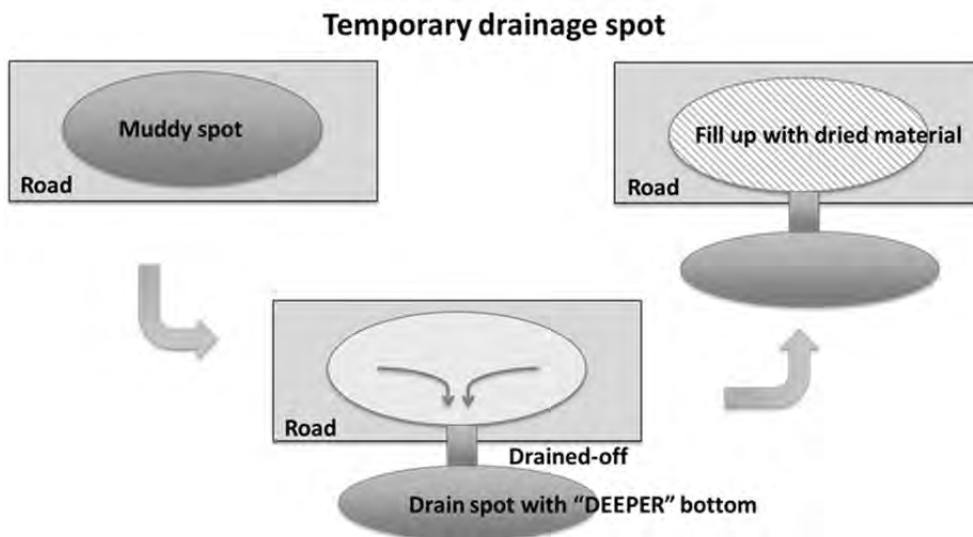


Figure 11: Temporary Drain-Off

5.5 Drainage facilities of dumping areas

As shown below, even in dumping areas, drainage is important and prevents stagnation of rainwater there by installing drainage and effective compaction by heavy machinery.

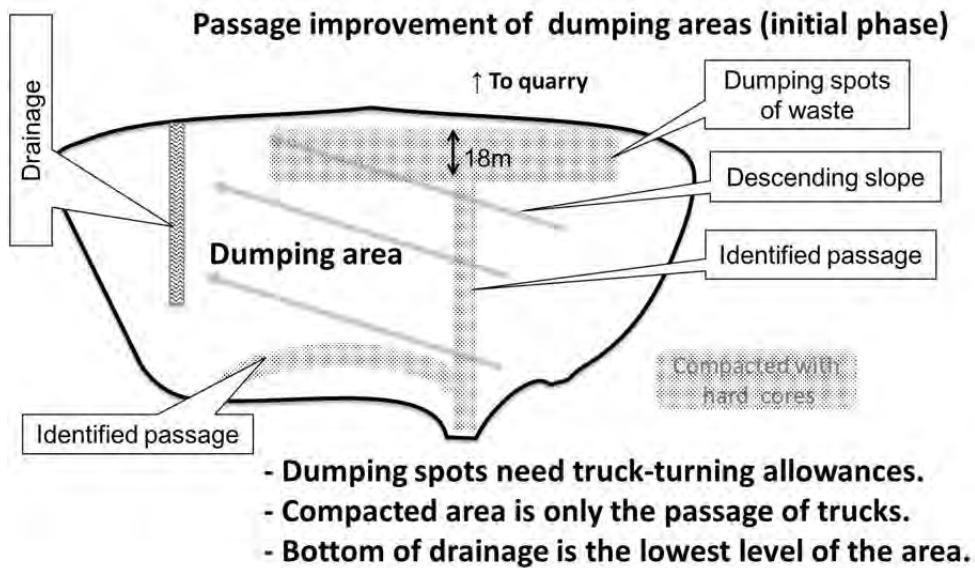


Figure 12: Passage Improvement in Dumping Area

5.6 Rock removal

Jackhammers are used to crumble the rock and eliminate the broken rock.

Indeed, the septic tank near the guard house was installed after breaking down a big rock manually. There is potential that you can eliminate the rock cheaply if you devote time and engage in human-powered drilling;

5.7 Drainage gradient

The point drainage gradient is clearly found and can be worked by an operator himself. However, it is recommended that a surveyor be appointed to measure the long or gentle slope for drainage development.

In addition, places which cannot be cut down shall be levelled as base courses instead.

Chapter 6 Leachate Drainage Facilities Maintenance

Leachate drainage facilities are maintained like storm water drainage facilities. It is important to monitor cross connections with storm water drainage. Storm water with leachate solution shall be treated as leachate if connected. Isolation is crucial.

Chapter 7 Maintenance of the Landfill Layer

7.1 Maintenance of the landfilled layer in service

Landfill layer is piled up to a height of 15m and is dangerous. It should be flat as long as the current work continues.

Additionally methane gas is produced from inside of the layer within a couple of months of landfilling. To eliminate this generation, circulation of air is necessary.

Placing a pipe by digging a hole vertically or horizontally ensures air circulation. For places prone to fire in particular in dry seasons, it is recommended that pipes be installed.



Photo 1: Gas Ventilation Pipe for Example

7.2 Maintenance of disused waste heaps

Places where dumping and landfill work are complete shall be managed for the next dumping phase or decommissioning. Once a year, a topographic survey with designated points shall be conducted to estimate the acceptable amount of incoming waste.

Chapter 8 Dumping Area Maintenance

It is important to secure dumping places anytime and secure accessibility to dumping points taking the maintenance of dumping areas into consideration.

Waste dumped in front of the dumping point shall be removed in favor of waste dumped elsewhere and the waste shall be moved to the dumping point.

For turning space for waste trucks, littering of waste should be considered and the waste shall be moved to the dumping point as soon as possible and must be levelled and compacted if discovered.

Chapter 9 Access Road Maintenance

9.1 Space in front of weighbridges

This space is always kept out for waiting vehicles. At present, faulty vehicles and broken heavy equipment are abandoned near the space and should be taken away immediately.

9.2 Countermeasures for stagnant water on the road

It is recommended to dig a hole just to pull the water off the road temporary, without building up the drain from the original space.

After draining off, it would be good to install hard cores on the road. If there are no hard cores, building up the base course is preferable at least.

Based on the longitudinal view of the access road, it is recommended to make a shape as drawn in the figure below.

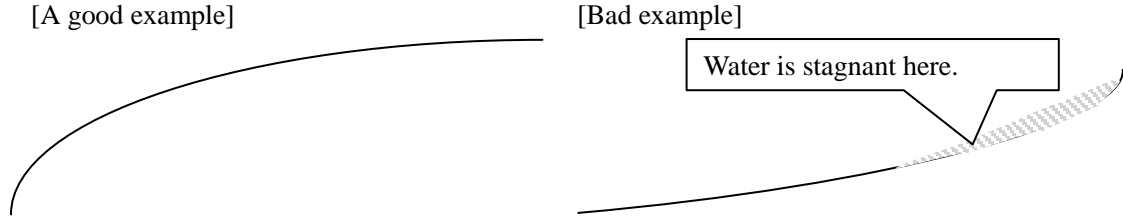


Figure 13: Gradient Making of Access Road

9.3 Drain cleaning

The drain shall be cleaned.

As shown in the photo below, once waste is piled up in the drain, not only would the drain function decline, it would also spawn other illegal waste dumping.



Photo 2: Waste Piled Up in a Drainage Area

9.4 Create a drain in flat area

If the drainage is made along the access road with a flat area, only partial cutting is needed to drain off the water there. (See the figure below)

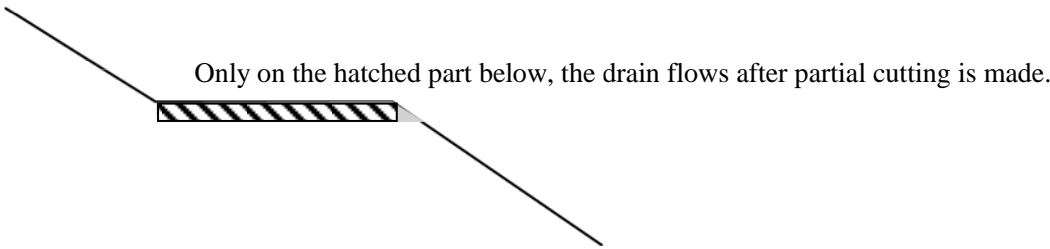


Figure 14: Drain Created in Flat Part

Chapter 10 Administration Office Maintenance

A guard house and weighing station are to be maintained like other buildings. However, strict security measures shall be introduced. With a CCTV monitoring system, security guards, equipment and property could all be secured.

Chapter 11 Work Process Management

First of all, the key is to establish a process flow and timeline. For planned maintenance, a plan should be necessary.

For work plan formulation, the work volume should be calculated first. Creating the volume is as follows:

- Work area identification
- Seeking work quantity and height (depth)
- Seeking work time, taking into consideration the capacity of heavy equipment
- Set the units of heavy equipment in some cases, the workload is calculated. Then set the timeline
- Set the date of implementation

[Points to note]

- Removal of waste should be always considered in a set with dump trucks for transfer and considered work volume with the time and motion of each unit. With the workability of heavy equipment in mind, critical paths on the timeline are clarified, whereupon work flow and timeline are aligned. (Or work efficiency would have negative impact.)
- In other words, comparing the workability of an excavator work and a dump truck transfer is the criterion to create a critical work flow. In particular, consideration of cutting heap work is important in terms of machinery workability.
- When transferring the waste, thinking of introducing a wheel loader, (1) dig with an excavator, (2) wheel loader loading, (3) truck transport, is often a more efficient procedure. However, if procurement is done on site without planning, specific heavy equipment would be inefficient. To avoid this, it is necessary to plan with heavy equipment workability.
- Duty cycle of waste transfer by tippers / dump trucks is estimated based on the experience of dumpsite managers.

Chapter 12 Fire Prevention

During the dry season or during any other weather involving relatively high temperatures, unintentional burning often occurs and generates much harmful gases. This phenomenon is one of the crucial affairs that is directly harmful, so fire prevention shall be treated as a key measure for dumpsite maintenance.

12.1 Pumping

As illustrated below, portable engine pumps are introduced and the reservoir is placed where it is needed. Reservoir water gained from this system is used not only for fire protection and fire-fighting but also for dust preventive measures.

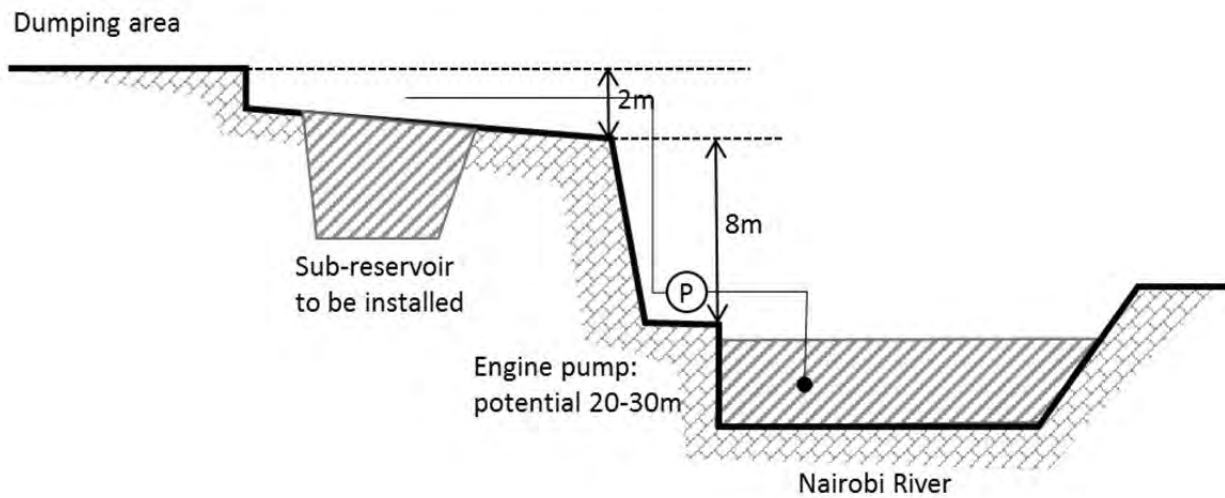


Figure 15: Pumping System

12.2 Soil security and storage

Soil is for usage for daily cover of the dumped waste and fire protection. Here, the soil for fire protection is only soil from the ground, not from the waste layer because it might have still some organic/burnable contents. Therefore the sand for fire protection should be distinguished.

Chapter 13 Others

Maintenance should follow "Dandora Dumpsite Landfill Work Plan in Nairobi City County" in the timeline and in work procedures. If other works are necessary, the work procedures shall be revised, whereupon the revised work procedures shall be followed. Repeating this process helps ensure proper operation of the dumpsite. That is important and noteworthy throughout your task.

[ANNEX]

Standard working capacity of heavy machinery

Equipment	Class	Work type	Work amount per day	Remarks
Dozer/tract shovel	20 t-class	Dozing	540 m ³	
Dozer/tract shovel	15 t-class	Ground compaction	300 m ²	To be confirmed by full scale testing
Excavator	0.8 m ³	Excavation and loading	300 m ³	Waste on the ground
	0.8 m ³	Loading	310 m ³	Waste and loose soil
	0.8 m ³	Cutting earth	220 m ³	Waste heap

Note: 1 day = 7 hours

*ANNEX 4.7 Guideline for Dandora Dumpsite Heavy Equipment in
Nairobi City County*

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Guideline for Dandora Dumpsite Heavy Equipment in Nairobi City County

March 2016

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Chapter 1 General

1.1 Purpose

This guideline aims to help implement works in Dandora Dumpsite with all the equipment as planned. Accordingly, the guideline covers a scope from contract contents for heavy equipment works to maintenance of heavy equipment on site showing practical procedures, in order to facilitate economical and effective dumpsite operation.

For equipment, high frequency of failure has become one of the biggest problem on Dandora Dumpsite operation and prevented scheduled operation of heavy equipment. To solve this problem, a revision of the contract for heavy equipment works is suggested in the guideline. Implementing the suggestion, a system that can ensure effective and stable operation of heavy equipment is also considered in the guideline.

1.2 Applicable scope

(1) This guideline is applied to equipment used in Dandora Dumpsite.

(2) This guideline also targets both NCC, which operates the dumpsite, and the contractors who provide and operate heavy equipment in the dumpsite.

1.3 Policy of the guideline

Existing equipment in the dumpsite has many issues that cannot be solved without experience gained in field work on site. The guideline aims to maintain the equipment at a certain level.

Also, the guideline includes the following policies:

- Carry out what you can. If it is impossible, then it is not recommended in this guideline.
- Implement works outside the scope of the guideline after revising this guideline.
- The guidelines can be revised or updated by NCC at any time.

Chapter 2 General Information of the Dumpsite Maintenance Equipment

2.1 Maintenance method of the dumpsite maintenance equipment

The purpose of this guideline is to perform field work at the dumpsite all day as planned. For this purpose, the equipment should always been in full working condition as expected by NCC.

Therefore, the equipment maintenance covers inspection, cleaning, refueling and other maintenance works for the equipment before and after use. The operational team should not handle these tasks.

Currently, most repairs are performed after break down, preventing expected field works and possibly impacting on all the dumpsite operation tasks.

When it comes to repair works, it takes longer than it should take to repair such breakdowns which can be avoided by preparing sufficient spare parts and consumables beforehand. It should, therefore, be necessary to plan to prepare those spare parts and consumables well in advance. Considerable lead time required to order spare parts is a loss, not only for NCC but also for the contractors.

The maintenance concept is as follows:

“From breakdown maintenance to preventive maintenance”

(1) Issues on BM (Breakdown Maintenance)

- Sudden failures happen.
- Considerable equipment downtime.
- Unexpected expenditure.

(2) Benefits of PM (preventive maintenance)

- Sudden accidents decline.
- Downtime minimised.
- Workability stabilised.
- Maintenance expenditure can be standardised.
- The service life of the equipment can be prolonged.

(3) Types of preventive maintenance

Time-Based Maintenance: To carry out maintenance at regular intervals.

Condition-Based Maintenance: To repair in a planned way by monitoring the state of the equipment during operation and quickly address any abnormal symptoms.

For the purposes of equipment maintenance, these two methods of preventive maintenance should be implemented in combination.

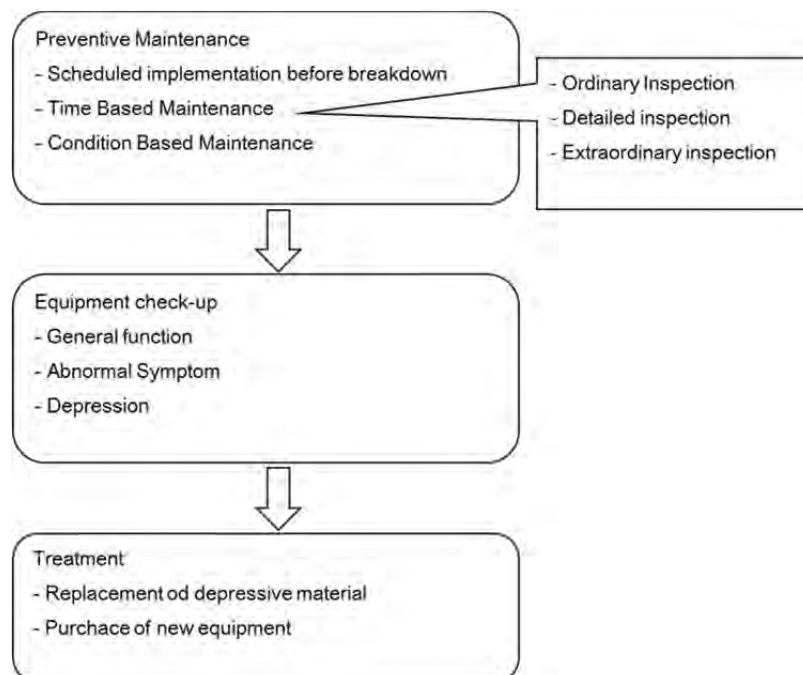


Figure 1: Maintenance Procedures including Preventive Maintenance

The dumpsite includes units of equipment operated by the private contractors. Since this guideline targets such equipment, compliance with the guidelines should be recommended. In this case, the equipment maintenance is basically done by the contractor.

2.2 Management system for the dumpsite heavy equipment maintenance

The management system of the dumpsite heavy equipment includes the involvement of the private contractors, thus the system is shown below.

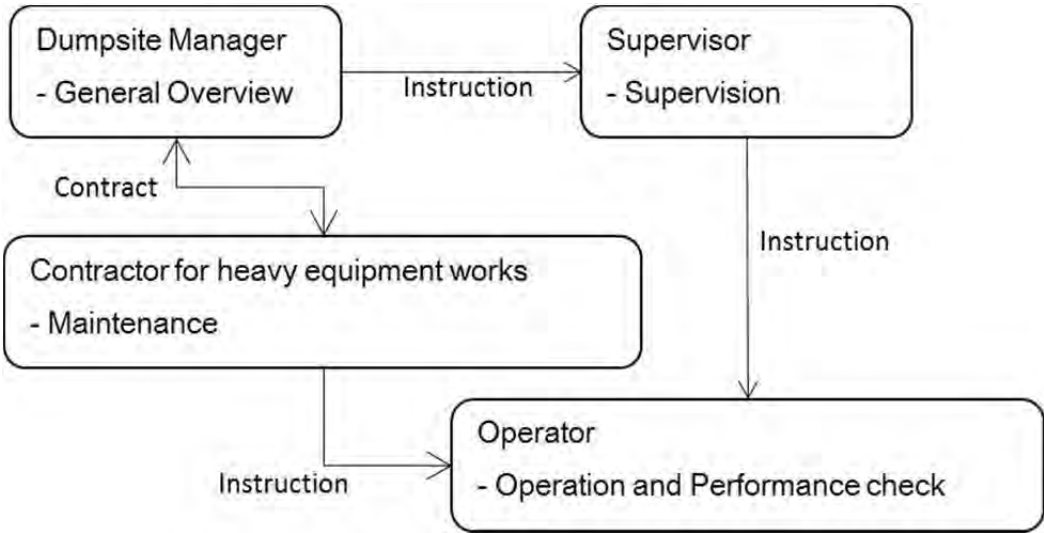


Figure 2: Disposal Maintenance Equipment Maintenance Management System

2.3 Security of maintenance space for the heavy equipment

Currently, all the units of heavy equipment are parked on the sidewalks of the main John Osogo Road and operated without proper inspection and cleaning up. For heavy equipment, flat space shall be developed within the property (within the perimeter wall) of the dumpsite and the equipment stored in line.

Since there are usually seven units, minimum space for 7 should be prepared.

This space is not only for storing heavy equipment but also for maintenance, so it needs sheds, concrete floors and storage for spare parts.

In addition, to increase the security level, the storage has to be secured strictly.

Chapter 3 Procurement of Heavy Equipment

3.1 Documents required for obtaining and storing

Heavy equipment, regardless of whether for direct operation or contracted operation, has standard specification with the following documents for each piece of equipment:

- Specifications
- Operation manual

Owners of heavy equipment may also have maintenance records for each unit.

These documents are required, regardless of whether the equipment is for direct operation or contracted operation. Accordingly, NCC, which manages the operation, shall have these documents, even if they are photocopies.

These documents are efficiently utilised in case of failure in the dumpsite and should thus all be kept on the dumpsite.

Although NCC often tends to pay little attentions to contract management, it is quite important for governmental affairs. Accordingly, all the related contractual or photocopied documents shall be obtained and kept in the dumpsite for more precise direct on-site instructions.

3.2 Construction equipment management issues

(Issue 1)

Basically most of the equipment is old and thus often out of order. The main reasons for failure might be lack of daily maintenance. Once the equipment is down, it cannot be brought back quickly, which could lead to poor work on site. Generally, although alternative equipment would be necessary urgently, the current contract between NCC and the contractors does not cover replacement equipment, causing field work to deteriorate, despite NCC plans.

The lack of any back-up system for a replacement is also problematic for the heavy equipment contract.
(No penalties at moment)

(Issue 2)

Among the failures on site, shoe plate damage is very common and since the equipment is kept operated without necessary repairs, it holds high risk of serious failures. This is because most of the equipment is equipped with standard shoes, which are not suitable for the current bumpy and wet ground in the dumpsite. Accordingly, the heavy equipment can be overloaded, causing shoes and other driving parts to break.

The equipment should have shoes for swampy areas fitted.



Photo 1: Dozer Wearing Swamps Shoes

(Issue 3)

Since garbage collection starts at around 6:30 to 7:30, the incoming waste to the dumpsite peaks at around 8:00.

However, in the dumpsite, daily instruction to heavy equipment operators starts at 9:00. Moreover, the equipment operation cannot start until 10:00 because the equipment has no fuel for the day. The manager of the contractor pays for the fuel at 10:00.

In other word, lots of garbage is dumped at the morning peak time without heavy equipment operation, which means no levelling or compaction of the ground at the dumping area. Accordingly, it always requires recovery time for the dumping area and insufficient work for continuous dumpsite operation.

The contracted heavy equipment shall be available during all the peak time as planned, so it is advisable to accept a one-week mandate for heavy equipment works in a row.

In the meantime, even though the contract system is revised as recommended, NCC tends to fall behind in payments to contractors, which is the biggest reason for disruption of daily works.

The heavy equipment works at the Dandora Dumpsite are not a one-shot work project but based on work using all the heavy equipment procured for a certain time (7 hours a day), so it is recommended that NCC replace the hourly payment to a daily/weekly/monthly payment in the contract conditions to secure the private contractors' stable benefit. That is one of the ways to improve the contract affairs.

3.3 Contract management of heavy equipment

All the heavy equipment is provided under an hourly-work-based contract by private sector through tender. As the terms and conditions, the wet rate per hour is set, and NCC pays depending on the workload. However, the contractual terms exclude important requirements designated as follows:

- No penalties for violation of a contract to operate when needed
- No arrangements to replace alternative equipment when it fails

Conversely, from the contractor side, they have a contractual risk as follows:

- Within the contract period (1 year) minimum working hours are not designated.

In the interests of both sides, effective work can be attainable in the dumpsite. To do this, the contractual requirements from the NCC side shall be revised as follows:

[Proposed contractual requirements for heavy equipment works]

- Standard working hours: 8:00 - 16:00 (shift1), 12:00 - 20:00 (shift2).
- To register to use the equipment and operator.
- Setting equipment minimum working per year: 700hrs/year or 110 days/year, without working hours for the replaced equipment. Heavy equipment which cannot achieve the hours cannot register in the next contract (Note: equipment not the contractor).
- Annual maximum working time setting: No limitation.
- Replacement of equipment: If out of order, a replacement must be provided within 24 hours.

- In case the replacement arrangement described above is not performed within “a certain period,” a penalty shall be imposed. * The duration of “a certain period” shall be based on NCC’s experience.
- One set of spare parts expected to be used within the contract period to replace must be prepared within a month of the contractual period commencing.
- Contract with payment per week, not per hour.
- The product year and maintenance records of the equipment for the contract period shall be submitted to NCC.
- Results of repair shall be necessarily submitted to NCC after every repair.

Chapter 4 Maintenance of Heavy Equipment

4.1 Target of the equipment to be maintained

(1) Weighbridge

The weighbridge components are as follows:

- Measuring instrument: 1 unit, 6 Point load cell type, weighing extent: 10 kg - 30 tons
- Automatic weighing system: small tabletop type with logging function
- Transmittal documents: The following information is recorded:

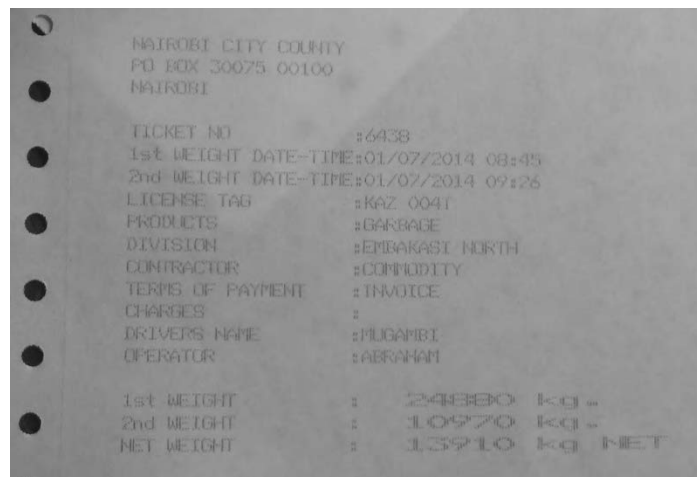


Photo 2: Weighing Records

(2) Excavator, Tract shovel

Table 1: Type of Excavator and Tract Shovel

Equipment type	TYPE
Excavator	CAT 320b
Excavator	CAT 320 D
Excavator	CAT 320 C
Excavator	JCB: KHMA 149B
Tractor shovel	D75S

(3) Dozer

Table 2: Type of Dozers

Equipment type	TYPE
Bulldozer (D6H)	KBG 067M
Bulldozer (D6H)	KAW 828 J
Bull Dozer	KOMATSU D85EX

4.2 Repair criteria

(1) Necessity and purpose

Equipment in the dumpsite shall always perform as expected. The landfill operation, dumpsite maintenance and improvement work are planned based on the expected performance. Accordingly, in case of failure or degradation of parts that decrease the equipment performance, immediate repair shall be made to recover the performance.

Also, the repair is expected to prolong the service life by optimizing other parts and functions.

(2) Repair criteria

Repair shall be done if the time required to repair a certain breakdown is shorter than the time the equipment can be operated until the next breakdown occurs for the same reason.

(3) Maintenance record

Equipment maintenance shall be recorded to provide both NCC as contract owner, and the contractor with information on each equipment repair record.

It is better to know the working record and product year of the equipment in the contracting process. If possible the maintenance record shall be evaluated by NCC just after the contract period to take into account whether it can be operated as expected in the next contract period.

(4) Treatment of the equipment with failure

In Dandora Dumpsite, failed equipment is often abandoned where the failure occurred. Preferably, to avoid negative impact on dumpsite operation, it shall be effectively dealt like any other equipment, moved to an obstruction-free space. In case it is difficult to move to another location, try to secure at least a passage for other equipment to ensure the ordinary operations on site.

The expected recovery period of the failed heavy equipment shall be confirmed to decide on replacement.

In case of the weighbridge failure, the failed parts shall be identified as soon as possible. Immediate contact to the dealer and arrange a repair estimate shall be done to conduct the repairs. There is no possible replacements of the weighbridge, thus early recovery is prioritised.

In addition, the weighbridge shall be examined to the standards specified in the “WEIGHTS AND MEASURES ACT” on a regular basis.

(5) Removal of obsolete equipment

Among the unused equipment in the dumpsite, the obsolete ones shall be taken away or disassembled into parts to be sold to the private sector.

The heavy equipment that can continue to be used shall be cured for in the equipment storage space after overhaul.

Chapter 5 Inspection

There are two types of equipment inspections:

5.1 Daily inspection

Daily inspection is implemented before operation starts every day.

After the field work, the equipment shall be cleaned on the same day to be ready for the next day's inspection.

[Backhoe daily inspections]

- Engine oil (quantity and contamination)
- Hydraulic oil (quantity and contamination)
- Hydraulic oil filter soot
- Cylinder oil leak
- Revolving reduction gear oil
- Cooling water and clogging of radiators
- Air element
- Fuel & dehydration
- Shoe tension adjustment
- Grease
- Leaking fluid under the car

[Dozer daily inspections]

- Engine oil (quantity and contamination)
- Hydraulic oil (quantity and contamination)
- Cylinder oil leak
- Transmission oil
- Cooling water
- Air cleaner
- Fuel & dehydration
- Shoe tension adjustment

5.2 Emergency inspection

In case of unexpected failure, like brake malfunction, noise occurring or insufficient performance, an emergency inspection shall be carried out. The target equipment may immediately stop operation and the inspection and maintenance should be carried out.

In case recovery is difficult on site, repair would be requested from the equipment manufacturers or their agents. However the state of failure shall be recorded prior to calling for the manufacturers.

Replacement of alternative equipment for the field work shall be prepared from the emergency inspection.

ANNEX 4.8 Financial Report on SWM Special Account

NAIROBI CITY COUNTY



ENVIRONMENT, ENERGY & WATER

Financial Report on SWM Special Account

March 2016

Financial Report on SWM Special Account

1. Detailed Financial Record on SWM Special Account

(a) Personnel Cost and Operation/Maintenance Cost

SWM Special Account Code	Previous Code	Fixed/ Variable	Budgetary Item	Actual Record for 2014/2015 SWM Special Account (Ksh)	Original Budget for 2015/2016 SWM Special Account (Ksh)	Actual Record for 2015/2016 (Jul.2015)	Actual Record for 2015/2016 (Aug.2015)	Actual Record for 2015/2016 (Sep.2015)	Actual Record for 2015/2016 (Oct.2015)	Actual Record for 2015/2016 (Nov.2015)	Actual Record for 2015/2016 (Dec.2015)	Actual Record for 2015/2016 (Jul.-Dec. 2015)
						(Ksh)	(Ksh)	(Ksh)	(Ksh)	(Ksh)	(Ksh)	(Ksh)
SWM-2110100	2110100	F	Basic Salary Permanent Employees	264,695,100	268,477,344	22,373,112	30,050,612	38,373,062	30,695,561	30,695,562	38,373,062	190,560,972
SWM-2110300	2110300	F	Personal Allowances Paid as Part of the Salary	164,346,997	158,228,088	13,186,174	13,186,174	13,186,174	13,186,174	13,186,174	13,186,174	79,117,044
SWM-2120100	2120100	F	Government Pension and Retirement Benefit	57,538,665	57,604,740	4,800,395	4,800,395	4,800,395	4,800,395	4,800,395	4,800,395	28,802,370
Personnel Cost Total				486,580,762	484,310,172	40,359,681	48,037,181	56,359,631	48,682,130	48,682,131	56,359,631	298,480,386
SWM-2210201	2210201	F	Telephone, Telex, Facsimile and Mobile Phone Services	66,880	46,590	0	0	0	0	0	0	0
SWM-2210303	2210303	F	Daily Subsistence Allowance	2,964,000	2,600,000	459,701	435,571	1,084,120	0	0	16,500	1,995,892
SWM-2210503	2210503	V	Subscriptions to Newspapers, Magazines and Periodicals	501,600	214,438	0	0	0	106,503	0	0	106,503
SWM-2210504	2210504	V	Advertising, Awareness and Publicity Campaigns	2,660,000	941,472	0	0	30,000	0	0	0	30,000
SWM-2210801	2210801	V	Catering Services, Accomadations, Gifts, Food and Drinks	501,600	204,227	100,000	0	0	0	288,000	0	388,000
SWM-3111009	3111009	V	Purchase of Other Office Equipment	10,000,000	4,000,000	0	0	0	0	0	0	0
SWM-2211031	2211031	V	Specialised Materials - Other	988,000	2,035,750	0	0	0	0	0	0	0
SWM-2211103	2211103	V	Sanitary and Cleaning Materials, Supplies and Services	9,880,000	5,000,000	0	0	0	0	0	2,065,358	2,065,358
SWM-2211199	2211199	V	Office and General Supplies	1,292,000	814,300	0	0	0	0	0	0	0
SWM-2211305	2211305	V	Contracted Cleaning Services	255,154,800	285,000,000	24,120,842	552,863	160,677,002	14,296,641	171,771,449	94,938,532	466,357,329
SWM-2210106	2210106	V	Utilities Supplies and Services	10,000,000	5,863,462	0	0	0	0	0	0	0
SWM-2211399	2211399	V	Other Operating Expenses- Other	32,188,000	30,000,000	0	0	2,209,000	0	0	0	2,209,000
SWM-2220299	2220299	V	Routine Maitenance - Other Assets	1,292,000	2,931,735	0	0	0	0	0	0	0
Operation and Maintenance Cost Total				327,488,880	339,651,974	24,680,543	988,434	164,000,122	14,403,144	172,059,449	97,020,390	473,152,082
Personnel Cost/Operation and Maintenance Cost Total				814,069,642	826,232,736	508,990,715	41,348,115	212,017,303	70,762,775	220,741,579	145,702,521	529,511,713

(b) Investment Cost

SWM Special Account Code	Previous Code	Fixed/ Variable	Budget Item	Actual Record for 2014/2015 SWM Special Account (Ksh)	Original Budget for 2015/2016 SWM Special Account (Ksh)	Actual Record for 2015/2016 (Jul.2015) (Ksh)	Actual Record for 2015/2016 (Aug.2015) (Ksh)	Actual Record for 2015/2016 (Sep.2015) (Ksh)	Actual Record for 2015/2016 (Oct.2015) (Ksh)	Actual Record for 2015/2016 (Nov.2015) (Ksh)	Actual Record for 2015/2016 (Dec.2015) (Ksh)	Actual Record for 2015/2016 (Jul.-Dec. 2015) (Ksh)
SWM-3110599	3110599	F	Infrastructure and Civil Works	30,000,000	84,000,000	0	0	500,000	15,854,980	42,000,000	0	58,354,980
SWM-3110701	3110701	V	Purchase of Motor Vehicles	20,000,000	10,000,000	0	0	0	0	4,600,000	0	4,600,000
SWM-3110705	3110705	V	Purchase of Trucks	60,600,000	70,000,000	0	0	0	0	0	0	0
SWM-3110706	3110706	V	Purchase of Tractors	0	150,000,000	0	10,000,000	0	10,000,000	33,000,000	41,953,000	94,953,000
SWM-related Investment Cost Total (SWM Special Account Total)				255,580,000	314,000,000	0	10,000,000	500,000	25,854,980	79,600,000	41,953,000	157,907,980

(c) Revenues

SWM Special Account Code	Previous Code	Budget Item	Actual Record for 2014/2015 SWM Special Account (Ksh)	Original Budget for 2015/2016 SWM Special Account (Ksh)	Actual Record for 2015/2016 (Jul.2015) (Ksh)	Actual Record for 2015/2016 (Aug.2015) (Ksh)	Actual Record for 2015/2016 (Sep.2015) (Ksh)	Actual Record for 2015/2016 (Oct.2015) (Ksh)	Actual Record for 2015/2016 (Nov.2015) (Ksh)	Actual Record for 2015/2016 (Dec.2015) (Ksh)	Actual Record for 2015/2016 (Jul.-Dec. 2015) (Ksh)
SWM-R2	R2	Garbage/Tipping Charges	70,462,101	77,508,311	6,125,250	5,397,810	5,438,243	5,552,200	4,339,800	4,735,250	31,588,553
SWM-R4	R4	Franchise Fee (Pilot Project)	0	0	0	0	0	0	0	0	0
SWM-R12	R12	Waste Policy Management/Fines	4,915,300	5,406,830	343,000	495,400	299,200	778,800	475,200	572,000	2,963,600
SWM-R13	R13	Annual Waste Collection Permit	2,317,790	2,549,569	57,000	44,000	620,000	390,000	520,000	590,000	2,221,000
SWM-related Revenue Total (SWM Special Account Total)			77,695,191	85,464,710	6,527,250	5,937,210	6,357,443	6,721,000	5,335,000	5,897,250	36,773,153

2. Summary of Financial Record on SWM Special Account

No.	SWM Special Account Code	Budget Item	Actual Record for 2014/2015 SWM Special Account (Ksh)	Original Budget for 2015/2016 SWM Special Account (Ksh)	Actual Record for 2015/2016 (Jul.2015) (Ksh)	Actual Record for 2015/2016 (Aug.2015) (Ksh)	Actual Record for 2015/2016 (Sep.2015) (Ksh)	Actual Record for 2015/2016 (Oct.2015) (Ksh)	Actual Record for 2015/2016 (Nov.2015) (Ksh)	Actual Record for 2015/2016 (Dec.2015) (Ksh)	Actual Record for 2015/2016 (Jul.-Dec. 2015) (Ksh)
1	SWM-P	Personnel Cost	486,580,762	484,310,172	40,359,681	48,037,181	56,359,631	48,682,130	48,682,131	56,359,631	298,480,386
2	SWM-OM	Operation and Maintenance Cost	327,488,880	339,651,974	24,680,543	988,434	164,000,122	14,403,144	172,059,449	97,020,390	473,152,082
3=1+2		Personnel Cost + Operation and Maintenance Cost	814,069,642	826,232,736	508,990,715	41,348,115	212,017,303	70,762,775	220,741,579	145,702,521	529,511,713
4	SWM-I	Investment Cost	255,580,000	314,000,000	0	10,000,000	500,000	25,854,980	79,600,000	41,953,000	157,907,980
5=3+4		Total Cost	1,069,649,642	1,140,232,736	508,990,715	51,348,115	212,517,303	96,617,755	300,341,579	187,655,521	687,419,693
6	SWM-R	Revenue Total	77,695,191	85,464,710	6,527,250	5,937,210	6,357,443	6,721,000	5,335,000	5,897,250	36,773,153
7=6-5		Loss/Surplus	-991,954,451	-1,054,768,026	-502,463,465	-45,410,905	-206,159,860	-89,896,755	-295,006,579	-181,758,271	-650,646,540
8=7		Transfer from General Budget	991,954,451	1,054,768,026	502,463,465	45,410,905	206,159,860	89,896,755	295,006,579	181,758,271	650,646,540

ANNEX 4.9 Nairobi ISWM Road Map

Nairobi ISWM Road Map [Updated Main Goals and Major Action Plans of the Master Plan]

Programme	Updated Main Goals	Updated Action Plans	Timeframe	Responsibility
Technical Approach Programme 1: Collection and Transportation Plan	100% of collection coverage rate in 2030	1-1 Procurement of a wheel loader and a backhoe	FY 2015/16	Director of Supply Chain Management (SCM)
		1-2 Designation of waste collection points	FY 2016/17	Director of Environment
		1-3 Procurement of waste collection vehicles appropriate for the informal settlement areas	FY 2016/17	Director of Environment
		1-4 Establishment of preventive workshop at Kaloleni depot	FY 2016/17	Director of Environment
		1-5 Regular maintenance of NCC waste collection vehicles	Continuous	Operation Manager
		1-6 Building capacity of CBOs & youth groups	Continuous	Director of Environment
		1-7 Monitoring & Enforcement on a sub-county basis	Continuous	Enforcement
		1-8 Strengthening of relationship between sub-county officers and DoE	Continuous	County Chief Officer (CCO) - Environment
		1-9 Review of the court case and meeting with WEMAK	Mar. 2016	CCO - Env.
		1-10 Review of Zone 7 Pilot Project	Mar. 2016	Project Manager
		1-11 Expansion of franchise system to Zone 1 & 6	Mar. 2016	Director of Environment
Programme 2: 3R and Intermediate Treatment Plan	9 zones to sub divided into 18 sub counties/zones including CBD thus the boundary of the zones to be in line with the administrative boundaries	2-1 Promotion of incentives for waste reduction initiatives	Mar. 2016	EMCE Officers
		2-2 Establishment of a transfer station/MRF in each Zone/Sub-county	FY 2016/17	Sub-county Officers
		2-3 Introduction of home composting and community composting	FY 2016/17	EMCE Officers
		2-4 Streamlining of the recycling industry (data base formulation, categorization, etc.)	FY 2018/19	Assistant Director of Env.
		2-5 Enforcement of waste segregation	Continuous	Environmental Monitoring, Compliance & Enforcement (EMCE) Officers
Programme 3: Final Disposal Plan	Operationalization of the EPR policy	2-6 Promotion of stakeholder participation in implementing EPR	Mar. 2016	Public Awareness & Education (PAE) Officer
		2-7 Implementation of survey of the recycling industry	FY 2017/18	EMCE Officers
		3-1 Improvement of drains, access roads including the main road to the dumpsite	Jun. 2016	CCO - Public Works
		3-2 Regular maintenance of drains, access roads and machinery	Continuous	CCO - Public Works
		3-3 Use of 2 weighbridges (one at entry the other at exit)	Aug. 2016	CCO - Public Works
		3-4 Put-up a big signage with rules & operational procedures of the dump site	Mar. 2016	Dumpsite Manager
		3-5 Completion of perimeter wall & gate	FY 2016/17	CCO - Public Works
3-6 Installation of communication network and CCTV	FY 2016/17	Information, Communication & Technology sector (ICT)		
3-7 Improvement of security at entire Dandora dumpsite	Sep. 2016	Inspectorate		

Note: ^{*1} The PPPP (Public-Private-People Partnership) concept is construed to mean that all parties involved should have equal rights and obligations in accordance with the agreement among them to ensure the sustainability of public services such as solid waste management.

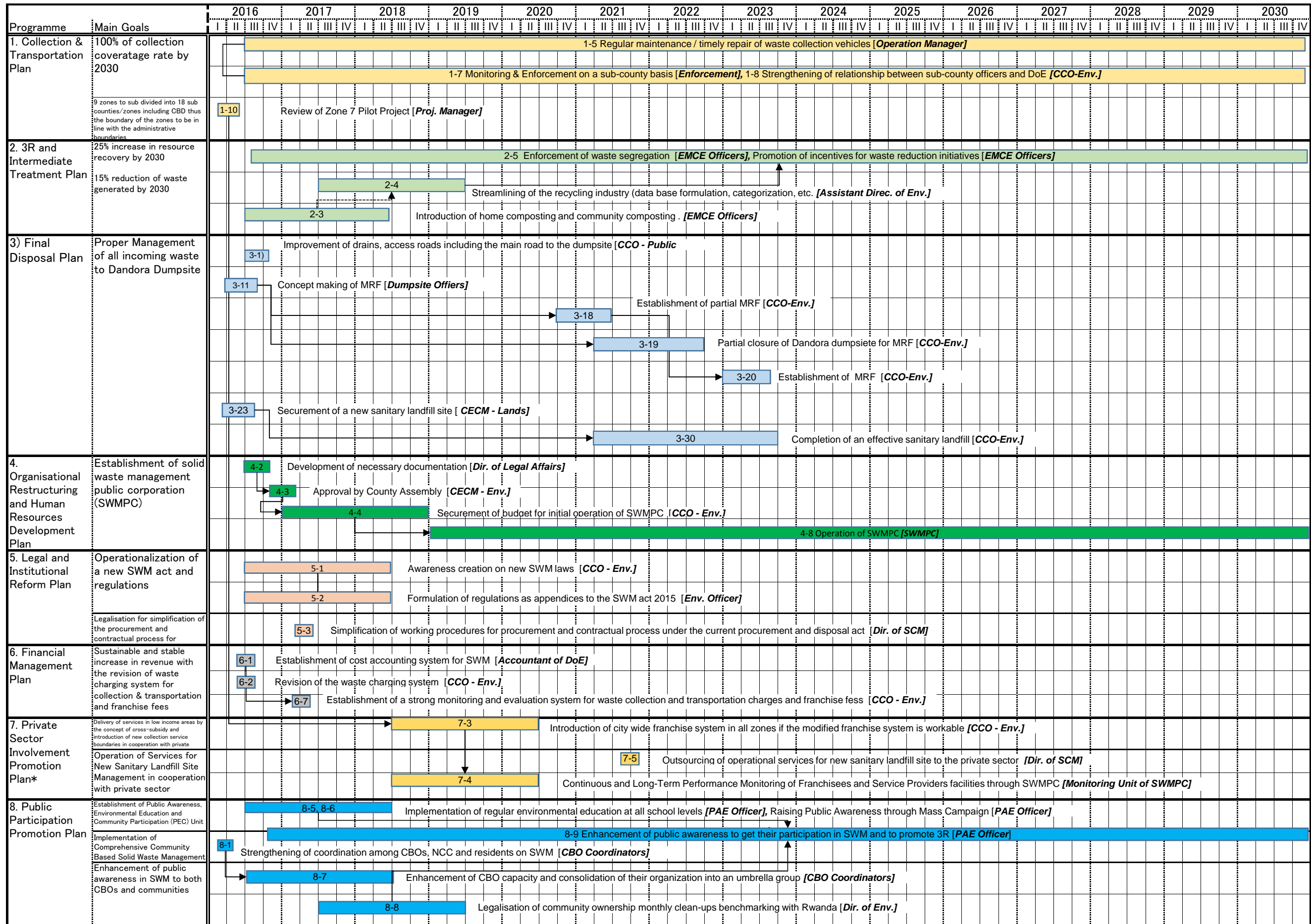
^{*2} NCC/SWMPC zones mean the areas where NCC or SWMPC would exclusively collect and transport wastes without the involvement of private service providers.

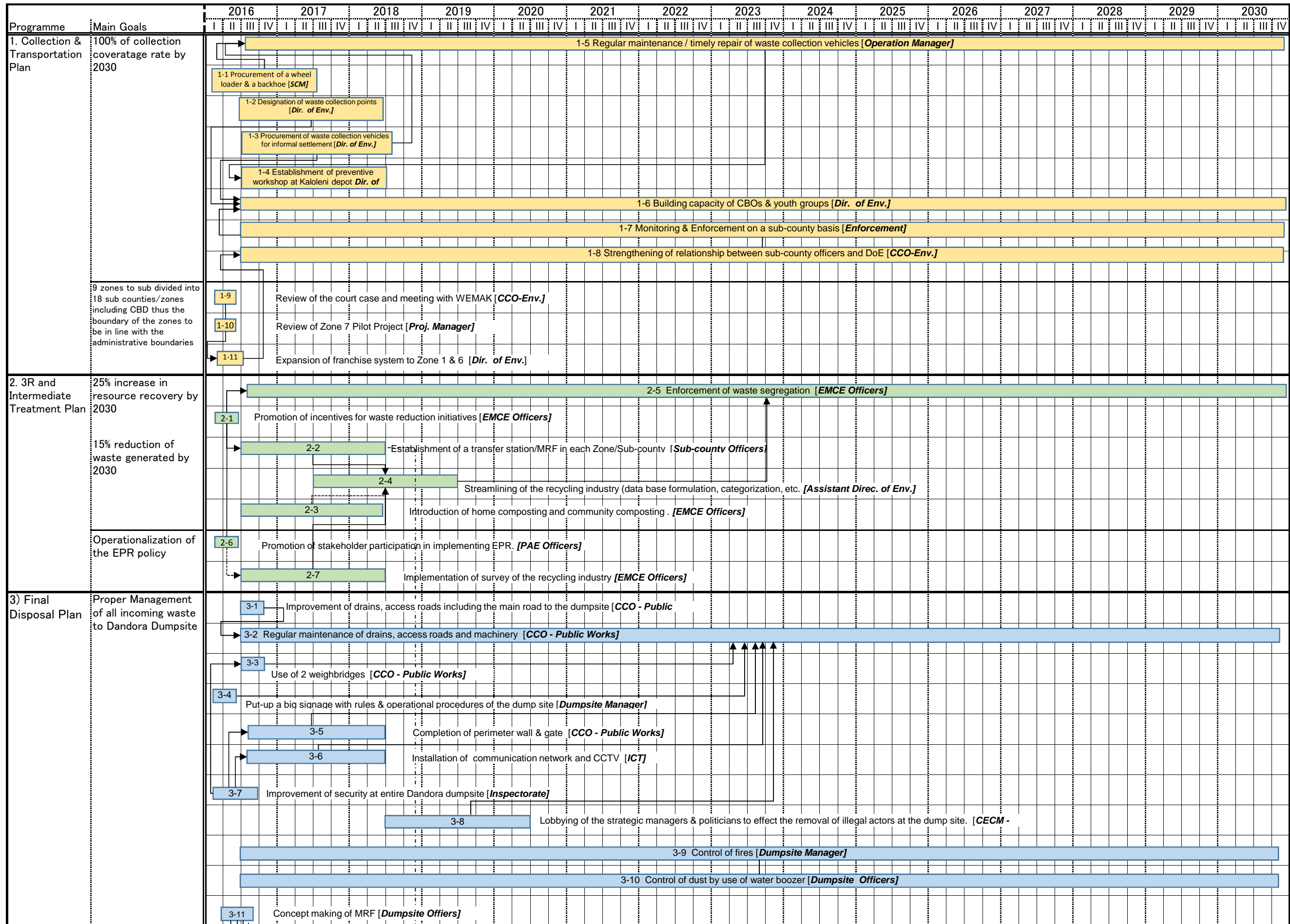
Programme	Updated Main Goals	Updated Action Plans	Timeframe	Responsibility		
	Construction of a new final disposal site	3-8 Lobbying of the strategic managers & politicians to effect the removal of illegal actors at the dump site.	FY 2018/19	County Executive Committee Member (CECM) - Env.		
		3-9 Control of fires	Continuous	Dumpsite Manager		
		3-10 Control of dust by use of water boozer	Continuous	Dumpsite Officers		
		3-11 Concept making of MRF	Aug. 2016	Dumpsite Officers		
		3-12 MRF test preparation (inc. procurement)	Feb. 2017	Dumpsite Officers		
		3-13 MRF pilot project implementation on site	FY 2016	Dumpsite Officers		
		3-14 Organic waste fermentation test	FY 2016	Dumpsite Manager		
		3-15 Basic design of Dandora decommissioning	Aug. 2017	Director of Environment		
		3-16 Detailed design of Dandora decommissioning	Sep. 2019	Director of Environment		
		3-17 MRF Specification Definition	Nov. 2019	Director of Environment		
		3-18 Establishment of partial MRF (preliminary phase)	Oct. 2020 – Jun. 2021	CCO - Env.		
		3-19 Partial closure of Dandora dumpsite for MRF	Apr. 2021 - Sep. 2022	CCO - Env.		
		3-20 Establishment of MRF	Aug. 2023	CCO - Env.		
		3-21 Piloting of the Fukuoka landfill management	Mar. 2016	Dumpsite Officers		
		3-22 Continuous clean-ups & closure of illegal dumps around the dumpsite	Continuous	Dumpsite Officers, Inspectorate, Enforcement		
		3-23 Securement of a new sanitary landfill site	Aug. 2016	CECM - Lands		
		3-24 Building consensus among all stakeholders including NCA, NEMA, KAA, KCAA, etc.	Nov. 2016	CECM - Env.		
		3-25 Basic Design for the sanitary landfill	Aug. 2017	Director of Environment		
		3-26 Detailed Design for the sanitary landfill	Apr. 2019 – Sep. 2019	CCO - Env.		
		3-27 Employment of appropriate personnel to undertake activities at the sanitary landfill	July. 2021	Public Service Commission		
		3-28 Outsourcing of management of sanitary landfill	Sep. 2021	Director of SCM		
		3-29 Partial operation of the sanitary landfill	Apr. 2021	CCO - Env.		
		3-30 Completion of an effective sanitary landfill	Sep. 2023	CCO - Env.		
		3-31 Acquisition of appropriate equipment to manage the sanitary landfill	Sep. 2023	Director of SCM		
		Institutional and Financial Approach				
		Programme 4: Organisational Restructuring and Human Resources Development Plan	Establishment of solid waste management public corporation (SWMPC)	4-1 Explanation to stakeholders	Jun. 2016	CECM - Env.
				4-2 Development of necessary documentation	Jun. 2016	Director of Legal Affairs
				4-3 Approval by County Assembly	Jan. 2017	CECM - Env.
				4-4 Securement of budget for initial operation of SWMPC	FY 2017/18	CCO - Env.
				4-5 Transfer of budget, personnel and assets	FY 2017/18	CCO - Finance
				4-6 Capacity development and Training of staff of SWMPC	FY 2017/18	CCO - Env.

Programme	Updated Main Goals		Updated Action Plans	Timeframe	Responsibility		
Programme 5: Legal and Institutional Reform Plan	Operationalisation of SWM working procedures	4-7	Commencement of operation of SWMPC (temp scale)	Jul. 2018	CCO - Env.		
		4-8	Operation of SWMPC (full-scale)	Jan. 2019	SWMPC		
		4-9	Formulation of standard working procedures and manuals	Jun. 2016	Dir. of Env.		
		4-10	Fast track franchising to operationalize use of manuals	Aug. 2016	CCO - Env.		
		4-11	Sensitizing candidates of SWMPC staff for use of SWM working procedures	Mar. 2017	CCO - Env.		
	Operationalization of a new SWM act and regulations	5-1	Awareness creation on new SWM laws	FY 2016/17	CCO - Env.	Environmental Officer	
		5-2	Formulation of regulations as appendices to the SWM act 2015	FY 2016/17			
		5-3	Simplification of working procedures for procurement and contractual process under the current procurement and disposal act	Mar. 2017			Director of SCM
		6-1	Establishment of cost accounting system for SWM	Jun. 2016			Accountant of DoE
		6-2	Revision of the waste charging system	Jun. 2016			CCO - Env.
		6-3	Legalisation for simplification of the procurement and contractual process for SWMPC	Mar. 2019			Procurement Dept. of SWMPC
Programme 6: Financial Management Plan	Sustainable and stable increase in revenue with the revision of waste charging system for collection & transportation and franchise fees	6-4	Commitment by CECM-Finance and Economic Planning on quarterly disbursement	Jun. 2016	CECM-Finance and Economic Planning		
		6-5	Quarterly transfer of budget to SWM Special Account	Jul. 2016	CECM-Finance and Economic Planning		
		6-6	Monitoring of cash flow of General Account	Jul. 2016	CECM-Finance and Economic Planning		
	Periodical Transfer of Budget from General Account to SWM Special Account	6-7	Establishment of a strong monitoring and evaluation system for waste collection and transportation charges and franchise fess	Mar. 2017	CCO - Env.		
		7-1	Review of the present franchise project in zone 7	Mar. 2016	Project Manager		
		7-2	Introduction of city wide franchise system in all zones if the modified franchise system is workable.	FY 2018/19	CCO - Env.		
		7-3	Proposal and implementation of mitigation measures for disputes between NCC and WEMAK	Continuous	CCO - Env.		
Delivery of services in low income areas by the concept of cross-subsidy and introduction of new collection service boundaries in cooperation with private sector	7-4	Continuous and Long-Term Performance Monitoring of Franchisees and Service Providers facilities through SWMPC	Continuous	Monitoring Unit of SWMPC			
	7-5	Outsourcing of operational services for new sanitary landfill site to the private sector	Aug. 2021	Director of SCM			
	8-1	Development of curriculum for regular environmental education at all school levels	FY 2016/17	Public Awareness & Education (PAE) Officer			
Programme 7: Private Sector Involvement Promotion Plan ^{*3}	Operation of Services for New Sanitary Landfill Site Management in cooperation with private sector	8-2	Implementation of regular environmental education at all school levels	FY 2016/17	PAE Officer		
		8-3	Raising Public Awareness through Mass Campaign	FY 2016/17	PAE Officer		
Programme 8: Public Participation Promotion Plan	Establishment of Public Awareness, Environmental Education and Community Participation (PEC) Unit	8-1	Development of curriculum for regular environmental education at all school levels	FY 2016/17	Public Awareness & Education (PAE) Officer		
		8-2	Implementation of regular environmental education at all school levels	FY 2016/17	PAE Officer		
		8-3	Raising Public Awareness through Mass Campaign	FY 2016/17	PAE Officer		

Programme	Updated Main Goals		Updated Action Plans	Timeframe	Responsibility
	Implementation of Comprehensive Community-Based Solid Waste Management Enhancement of public awareness in SWM to both CBOs and communities	8-4	Enhancement of public awareness to get their participation in SWM and to promote 3R	Continuous	PAE Officer
		8-5	Strengthening of coordination among CBOs, NCC and residents on SWM	Mar. 2016	CBO Coordinators
		8-6	Planning, Implementation and Monitoring of Community-Based Organisation's (CBO's) Waste Collection Plan	Apr. 2016	CBO Coordinators
		8-7	Ensuring of legal practice by CBOs	Apr. 2016	Inspectorate
		8-8	Enhancement of CBO capacity and consolidation of their organization into an umbrella group	FY 2016/17	CBO Coordinators
		8-9	Legalisation of community ownership monthly clean-ups benchmarking with Rwanda	FY 2016/17	Director of Env.

Note: *3 The proposed PPPP scheme shall be developed by expanding the traditional PPP (Public-Private Partnership) scheme to also involve the communities concerned.





ANNEX 4.10 Report on Subcontract Work

REPORT ON SUBCONTRACT WORK

A. Setting for Kick-Off Event

A seminar was carried out as the kick-off event after the approval of the IC/R, to disseminate the contents and work items under the JICA assistance for SWM in the City of Nairobi on 18th of April, 2012. More than hundred participants attended the seminar not only from relevant government institutions but also from international organisations, universities, NGOs/CBOs, Private Service Providers and the mass media. In order to effectively carry out the event, a local company specializing public relations was contracted.

The sub-contract works were awarded to a following consultant:

Name of Contractor:	Orange Company Ltd.
Address:	Kamburu Drive off Kindaruma Road, P.O. Box 42862, Nairobi 00200 Kenya
Contract Period:	28th March, 2012 until 17th April, 2012
Contract Amount:	Ksh. 403,332

A.1 Work Items

- (1) Seminar Setting
 - a. Re-Design and production of roll up banners 1 m in width and 2 m in height
 - b. Decoration of venue branding based on objective of the seminar
- (2) Media and Event Management
 - a. Media management and Media Invites (List and RSVP, press release-draft and content)
 - b. Organize and Conduct interviews with VIP's and Guest of Honor
 - c. Master of Ceremony
 - d. Design and Production of Conference Folders
 - e. Guest List Management (RSVP 10 working days before the Event)

A.2 Results of Work

The scenery of kick-off seminar and materials of banners and decoration are shown as follows:



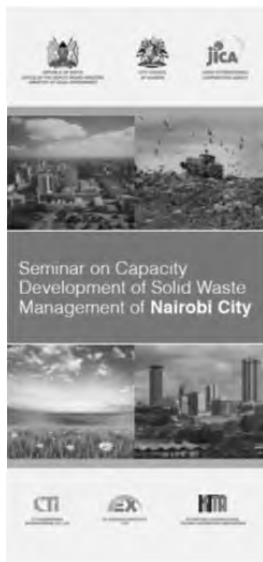
Kick-Off Seminar and its Handed-Over Ceremony



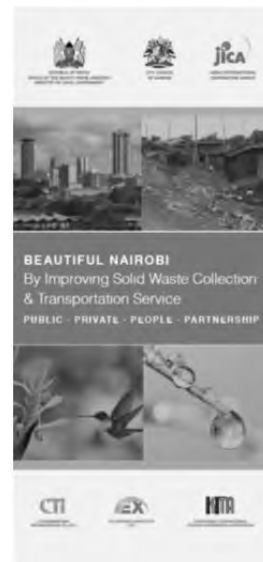
Venue Decoration



Folder for Distribution Handouts



Banner (1)



Banner (2)

B. Pilot Project of Waste Collection and Transportation in Slum Areas in Cooperation with NGOs and CBOs

Some works in Output 3, NCC's capacity is strengthened in terms of involvement of CBOs for solid waste collection and transportation, were contracted out to local consultants in annual basis. Summary of the works items and their results are as follows:

B1. First Fiscal Year [FY2012]

The sub-contract works were awarded to a following consultant:

Name of Contractor:	Environmental Technology Africa Ltd.
Address:	P.O. Box 2596 – 00621, Nairobi, Kenya
Contract Period:	24th September, 2012 until 28th February, 2013
Contract Amount:	JPY 4,860,000

B1.1 Work items

The contractor was assigned to perform the following task:

- (1) Assistance for design and planning of the pilot project;
- (2) Design, production and distribution of promotion materials (e.x. leaflet and poster);
- (3) Assistance for Public Consultation Meetings (workshops and explanatory meetings);
- (4) Procurement of handcarts, rakes, shovels and other equipment for waste collection and transport to collection points; and
- (5) Implementation, Supervision, Evaluation and Monitoring of the Pilot Project.

B1.2 Result of the Work

The contractor performed all the task mentioned above successfully, except 5) implementation, supervision, evaluation, and monitoring of the PP. For the reasons outside of the contractor / JICA Expert Team control, i.e. general election of 2013, the implementation of the pilot project was postponed until July 2013. Therefore, this task was deferred to second fiscal year (FY2013). The contractor submitted the final report in February 2012, containing all record and data gathered.

B2. Second Fiscal Year [FY2013]

The sub-contract works were awarded to a following consultant:

Name of Contractor:	Environmental Technology Africa Ltd.
Address:	P.O. Box 2596 – 00621, Nairobi, Kenya
Contract Period:	1st July, 2013 until 28th February, 2014
Contract Amount:	JPY 5,800,000

B2.1 Work items

The contractor was assigned to perform the following task:

- (3) Assistance for Public Consultation Meetings (explanatory meetings); and
- (4) Supervision and Monitoring of the Pilot Project.

B2.1 Result of the Work

The contractor performed all the task mentioned above successfully, and submitted a final report in February 2014, containing all record and data gathered during the work period.

B3. Third and Fourth Fiscal Year [FY2014-FY2015]

From third year, the contract works were given to two separate consultants.

<Kibera>

The sub-contract works for Kibera area were awarded to following consultants:

Name of contractor:	Geoplan Associates
Address:	LR NO 403 Mayanja Road, P.O. Box 2212-00200, Nairobi, Kenya
Contract Period:	15th August, 2014 until 3rd September 2015
Contract Amount:	USD 48,600-

B3.1 Work items for Kibera

The contractor was assigned to perform the following task:

- (1) Identify the capacity of CBO in the Pilot Project area in Kibera and prepare appropriate maps to support operations for solid waste management;
- (2) Conduct Needs Assessment;
- (3) Develop a model for bringing a board all CBOs in Kibera pilot project area;
- (4) Develop a project design of strengthening the capacities of CBOs in Pilot Project area;
- (5) Develop a communication strategy and PR materials;
- (6) Monitor and evaluate the progress and result of the pilot project in conjunction with the Counterparts;
- (7) Develop periodic progress reports; and
- (8) Prepare a detailed final report including, but not limited to, revised project design for rolling out in other area.

B3.2 Result of the Work for Kibera

The contractor performed all the task mentioned above successfully, and submitted the final report containing all record and data gathered during the contract period.

<Kangemi>

The sub-contract works for Kangemi area were awarded to following consultants:

Name of Contractor:	Envirowise Consult Ltd.
Address:	P.O. Box 28234-00200, Nairobi Kenya
Contract Period:	15th August, 2014 until 3rd September, 2015
Contract Amount:	USD 50,598.26

B3.3 Work items for Kangemi

The contractor was assigned to perform the following task:

- (1) Identify the capacity of CBO in the Pilot Project area in Kangemi and prepare appropriate maps to support operations for solid waste management;
- (2) Conduct Needs Assessment;
- (3) Develop a model for bringing a board all CBOs in Kangemi pilot project area;
- (4) Develop a project design of strengthening the capacities of CBOs in Pilot Project areas;
- (5) Develop a communication strategy and PR materials;
- (6) Monitor and evaluate the progress and result of the Pilot Project in conjunction with the C/Ps;
- (7) Develop periodic progress reports; and

- (8) Prepare a detailed final report including, but not limited to, revised project design for rolling out in other area.

B3.4 Result of the Works for Kangemi

The contractor performed all the task mentioned above successfully, and submitted the final report containing all record and data gathered during the contract period.

C. Public Awareness Campaign

In order to effectively carry out the public awareness raising campaign, local companies specializing public relations and environmental consultancy were contracted. Following discusses the outputs produced through these local contract works.

C1. First Fiscal Year [FY2012]

The sub-contract works were awarded to a following consultant:

Name of Contractor:	Conferencing in a Box Ltd.
Address:	2nd floor, Morningside Office Park, Ngong Road, Nairobi Kenya
Contract Period:	18th October, 2012 until 28th February, 2013
Contract Amount:	JPY 3,060,000


C1.1 Work Items

- Creation of campaign slogan
- Design, Production of Campaign Materials
- Distribution of the Campaign Materials

C1.2 Result of the Work

(1) Creation of a Project Slogan and Mascot

The slogan and mascot should be representative of the project and must be widely accepted by Nairobi citizens. In light of this, following slogan and mascot were determined in C/P - JET meeting in October 2012 and January 2013, respectively.

Item	Content	Meeting decided the item
Mascot		2012/12/05 C/P Meeting
Slogan	Clean Healthy Wealthy Nairobi	2013/01/28 C/P Meeting

(2) Design, Production of Campaign Materials and Distribution of the Campaign Materials

Following campaign goods were produced for both franchising PP area, -- Zone 7, and the waste collection/ transportation service PP in slum areas, -- Kibera and Mukuru slums.

Franchising PP area		Waste collection and transportation services in slum areas in cooperation with CBOs	
Flyer	2,000	Flyer	4,300
Leaflet (Type A)	2,000	Leaflet (Type A)	4,300
Poster	500	Leaflet (Type B)	4,000
Stickers	2,000	Poster (Type A)	1,000
Desk Calendar	800	Poster (Type B)	1,000
T-Shirts	200	Stickers	4,400
		Poster Calendar	3,000
		T-Shirts	400

Examples of the campaign goods produced are shown below.

Common to both PP areas

Sticker

Intended use:
Government offices,
bus stops, matatus,
and etc.



T-Shirt

Intended use:
Clean-up campaigns,
environmental clubs
in schools, and etc.



Franchising PP area

Desk Calendar



Intended use:
Government offices,
offices in franchising
PP area



PP areas for Waste collection and transportation services in slum areas in cooperation with CBOs

Flyer

Intended use:
Clean-up campaigns,
workshops, and other
events

Project for Capacity Development of Solid Waste Management of Nairobi City

Role of City Council of Nairobi (CCN) in this project

Mandate of the City Council of Nairobi:
To provide and manage basic social and physical infrastructure services to the residents of Nairobi

Expansion of the areas of the solid waste management from this pilot project areas to other areas across the city

3. Facilitation of events:
- Logistical support to CBOs (workshop, clean-up day, explanatory meeting, exchange of best practices with CBOs, environmental competition for city schools, etc.)
- Representation of the Government of Kenya

Contact:
For more information, please contact:
Department of Environment, CCN
Tel: 020-256372
Email: info@nairobi.go.ke

JICA Expert Team
Tel: 020-2567857
Email: info@nairobi.go.ke; team-environment@nairobi.go.ke; info@jica.go.ke

Pilot Project of Waste Collection and Transportation in Slum Areas in Cooperation with NGOs and CBOs

Background of this project:
This is a bilateral governmental project between the Government of Kenya and the Government of Japan to improve urban environment of Nairobi City and strengthen the capacity of solid waste management (waste collection and transportation) of Nairobi City in informal settlements, in cooperation with Community Based Organizations (CBOs).

Project sites:
The implementing agencies of this project comprised about 50 village (areas) of informal settlements in Nairobi and selected two sites to implement this pilot project for the fiscal years 2012 and 2013, namely Kibera and Mukuru Slums. This project is currently executed in cooperation with two CBOs, Enhancing Rehabilitation in Kibera Kenya (ERIKOK) in Soweto West Village, Kibera Slum and Volunteer Comprehensive Community Organization (VCCCO) in Great Village in Mukuru Slum.

Start of the project:
After a project preparation phase collectively undertaken by CCN and JICA Expert Team, a kick-off

Project office website: <http://www.nairobi.go.ke>

Poster (Type A/ Type B)

Appointed Implementing Community-Based Organizations (CBOs)

Activity areas of the CBOs:
The appointed implementing Community-Based Organizations (CBOs) of the project are Enterprise Revitalization in Kibera Kenya (ERKK) and Villagers' Cooperative Organisation (VCCO) in Mukuru Slum.

Main operational area of ERKK (Dowry Vind, Gakwani and Othman Villages, Kibera Slum)

Main operational area of VCCO (Sisal Village and the surrounding areas of Mukuru Slum)

Waste is Wealth!
The primary task of these CBOs are that their members, who sort the wastes of houses (if homes) will have incentives (goods or financial advantages). The waste of the services are directly commercialised to the residents.

Key players of this project
Residents (and businesses)
Partners: in-charge staff through CBOs waste collection service system (if waste sorted)
- supporting both household and community involvement through proper management / handling of waste and recyclables.

CBO's staff
Supporting the long involvement of the residents through its work
Contributing to better community hygiene (health) conditions.

Events of this project in Kibera and Mukuru

Workshop:
Date: Early December 2012
Topic: Project site public problems related to solid waste management and the level of public awareness.
Involvement: CBOs, local leaders, City Council or Nairobi CCO, JICA, Insurance Corporation Agency (ICA) and other stakeholders.

Explanatory meetings:
Date: January 2013
Topic: The importance of proper solid waste management, sanitation, public health and awareness in the city & summary of the pilot project.
Involvement: Residents of the project areas, CBOs, local leaders, CCN, JICA and other stakeholders.
Further information: To be communicated through CBOs.

Recycling competition (under contemplation)
Date: September - December 2012
Topic: Waste is Wealth! - Win a prize for your recycling product.
Involvement: Residents of the project areas, CBOs, local leaders, CCN, JICA and other stakeholders.

Project office website: <http://www.usafi.org/na/na.html>

Intended use:
Government offices, bus stops, kiosks, and other relevant sites in slum areas

CLEAN HEALTHY WEALTHY NAIROBI

USAFI LAZIMA

Chambua tuka njumbini, kupunguza tuka katika kiji chaletu, wakararia mazingira safi pamoja!

DUMISHA USAFI LINDA MAZINGIRA!

CCN in collaboration with CBOs works towards better environment for all!!!

City Council Of Nairobi and JICA have joined forces in Improving Waste Management in Nairobi City

Poster calendar

Intended use:
Government offices, local residents, offices/shops in slum areas, kiosks and other relevant places

CLEAN HEALTHY WEALTHY NAIROBI

January

S	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29

February

S	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29

March

S	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31				

April

S	1	2	3	4	5
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12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29

May

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12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30					

June

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6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30					

July

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18	19	20	21	22	23
24	25	26	27	28	29
30	31				

August

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12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31				

September

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6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30					

October

S	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31				

November

S	1	2	3	4	5
6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30					

December

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6	7	8	9	10	11
12	13	14	15	16	17
18	19	20	21	22	23
24	25	26	27	28	29
30	31				

City Council of Nairobi and JICA have joined forces in Improving Waste Management in Nairobi City

C2. Second Fiscal Year [FY2013]

As a bottom-up approach, a school competition was held for schools in the PP area for CBO coordination. The participating schools are selected according to student grades (age) / class size, and/or existence of environmental club. Explanation of the Project and PP was given to teachers as well as the school children. In this competition, each participating school worked on environmental education related to solid waste management as extracurricular activity. In the final day of activity, competition was held where each group made a presentation on what they have learnt. Each group was judged from the aspect of understanding, self-motivation, sustainability and creativity and the top three groups were awarded. The purpose of this competition was to let children understand the importance of proper solid waste management through daily issues concerning solid waste e.g. measurement of the volume of the waste from each household and research on the current conditions of solid waste in their neighbourhood.

This sub-contract works were awarded to a following consultant:

Name of Contractor:	Events by Hazel
Address:	Chania Road, Kilimani, Nairobi Kenya
Contract Period:	10th September, 2013 until 31st October, 2013
Contract Amount:	Ksh. 316,000

C2.1 Work Items

- Creation of campaign slogan
- Design, Production of Campaign Materials (including school competition materials)
- Distribution of the Campaign Materials (including implementation of school competition)

C2.1 Result of the Work

The school competition was carried out in the following schools:

School:	Olympic Primary School, Kenya Assembly of God, Spurgeon Academy, Bakhita School
Number of Participants:	128 pupils (8 pupils 4 groups * 4 schools)
Period:	from the first week of September to 11 th of October, 2013

In general, the participants, teachers and pupils, were delighted with the competition and learnt a lot from the activity. On the other hand, however, the some issues were raised by the participating schools in which attention should be paid in future event. Such issues are 1) poor time management on start up the event, and 2) no explanation was given for the scoring. Photos below show the school competition held in Kibera, where the Senior Representative of JICA Kenya Office attended as one of judges of competition.



School Competition in Kibera

