



2015

VALENCIA WORKSHOP

Solid Waste Management Plan for Maraka (UC-122)



BY:

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DEPUTY MANAGER

OPERATION

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1. Facts

SR.N	Description	
1	Phase	D
2	UC	122 – Maraka
3	Deputy Manager	Usman Tariq
4	Cheff	Irfan Butt
5	Population	57572
6	UC Area	45834352 m ² (middle income)
7	Waste Generation (estimated)	37.42 tons @.65 kg/person/day

2. Operational Arrangements / Resources Deployed

2.1 1st Shift Arrangement – 6 AM to 2 PM

Manual Sweeping		
Sanitary Supervisors	5	
Sanitary Workers	50	
Wheelie Bins	10	
Hand Carts	1	
Containers Collection		
Containers Placed	41	
Containers Points	40	
Compactors	C-1127	2 trips, approx. 4 to 5 tons each trip (5x2=10)
	C-1069	2 trips, approx. 4 to 5 tons each trip (5x2=10)
Drivers	2	
Helpers	4	
D-T-D Collection		
Mini Dumpers – Suzuki Pickup	1	MD-72
Driver	1	
Helper	1	
Note: Compactor also collecting waste if waste bags found on road or in front of home or shop		

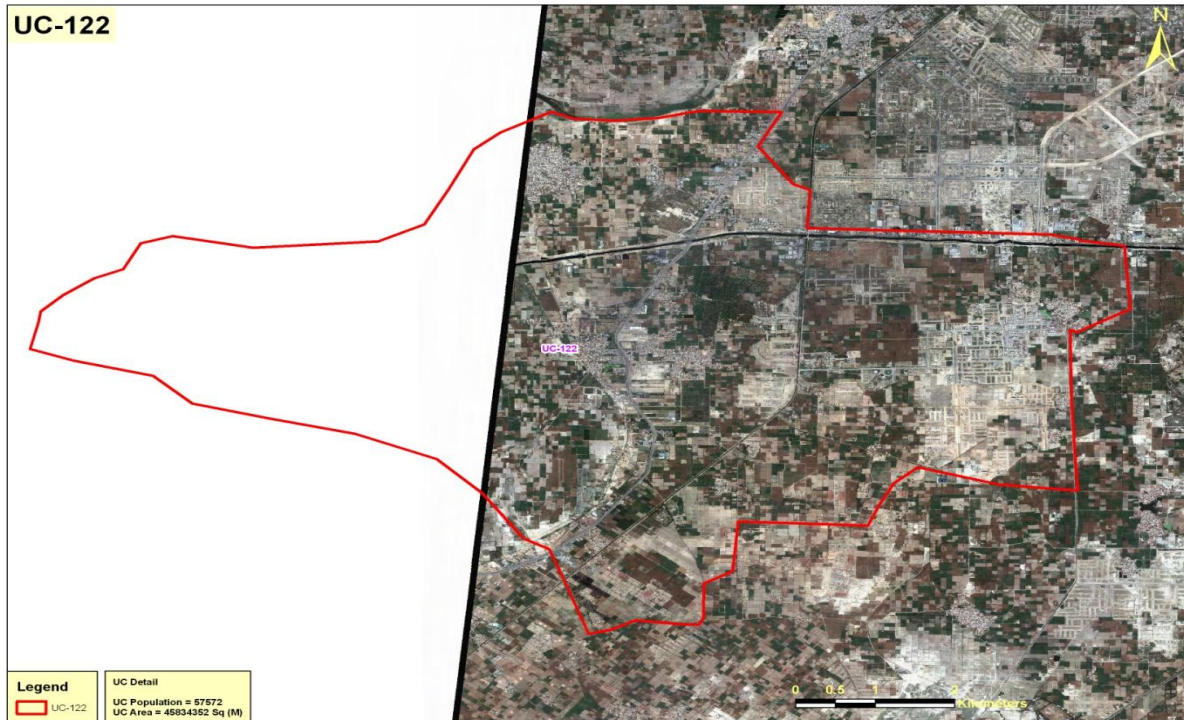
2.2 2nd Shift Arrangement - 2 PM to 10 PM

Containers Collection		
Compactors	2	C-1069, 2 trips (approx. 4 to 5 tons in each trip) C-1127, 2 trips (approx. 4 to 5 tons in each trip)
Note: attending 2 UC's 121 & 122		

3 Introduction

Union Council – 122 (Maraka) is located in Allama Iqbal Town. Total area of the UC is 45834352 m² with population of 57572¹. This area is predominantly middle income area with planned settlement.

Figure 1: Map of UC 122 Maraka



4 Solid Waste Generation

Estimated solid waste generation is 37.42 metric tons per day @ waste generation rate of 0.65 kg/person/day.

5 Solid Waste Management Practices

This area is under control of M/s. OZPak J.V for solid waste management. Existing arrangements for SWM based upon actual operations are as follows:

¹ Punjab Development Statistics – 2011, Bureau of Statistics, Govt. of the Punjab

6 Street Sweeping and Waste Collection by Sanitary Workers

6.1 Beat system

Workers are allocated their fixed area of working or beats. Beats are designed to distribute the work load equally. Generally a street length of 1000 metre is assigned to every worker.

Sr.No	Computer No	Name	Beat
1	9812	NAZIR S/O BASHIR	MULTAN ROAD TO MADINA COLONY OFFICE
2	9839	BARKAT S/O TABU	MARAKA CUTT TO KHUD PUR RASTA MULTAN ROAD
3	585	REHMAT S/O ZAHEER	NIAZI BHATTA TO ROHI NALA PUL MASHRIQ SIDE
4	583	YOUNAS S/O GULZAR	MOHLANWALL GAON ADDA TO TANGANWALA
5	331	RIAZ S/O INAYAT	NIAZI BHATTA TO ROHI NALA PUL MASHRIQ SIDE
6	332	ARIF S/O AHMA MASIH	MOHLANWALL GAON ADDA TO TANGANWALA
7	22165	ASGHAR S/O BOOTA	MOVIE PONT TO MARAKA STOP CUT
8	22167	IMRAN S/O JEETA	MARAKA KOATER TO ROHI NALA PUL MASHRIQ
9	22166	AWAIS S/O HANIF	MARAKA KOATER TO ROHI NALA PUL MASHRIQ
10	22170	SHEHZAD S/O ASGHAR	FOR PLOT DUTY
11	22172	ABID S/O LABHA MASIH	NIAZI BHATTA TO ROHI NALA PUL MAGHRIB SIDE
12	7033	NASIR AHMAD S/O BASHEER AHMAD	BAILDAR
13	28982	YAQOOB SHINGHARA	BATA BACK SIDE ALI HUSAIN ABAD
14	28986	ASHRAF ARIF	FARHAN HOTEL TO CNG PUMP MULTAN ROAD
16	26187	FAROOQ MASIH S/O LATIF MASIH	CUTT TO KHUDPUR RASTA MULTAN ROAD
17	29134	AMIR S/O LATIF MASIH	CUTT TO NURSURY FORM MULTAN ROAD
18	7106	SHARAFAT S/O BASHEER	DEFENCE ROAD MOHLANWALL
19	532	MEHMOOD MARKAS S/O RASHEED	SUPERVISOR
20	538	REHMAT S/O ISHAQ	MOVIE PONT TO MARAKA STOP
21	541	HAROON S/O BARKAT	FOR PLOT DUTY
22	542	ELAS S/O YAQOOB	BATA BACK SIDE ALI HUSAIN ABAD
23	545	ZUHRA NADEEM	SHAHKAM CHOWK TO CH.FARM HOUSE
24	546	NADEEM SALEEM	SHAHKAM CHOWK TO CH.FARM HOUSE
25	544	SHARIF S/O DEEPA	MARAKA KOATER TO ROHI NALA PUL MASHRIQ
26	535	ALI RAZA S/O AHMED ALI	SUPERVISOR
27	531	BOOTA / RAFIQUE	MADINA COLONY OFFICE TO GOV.SCHOOL
28	537	PLOOS S/O DULLA MASIH	DEFENCE ROAD MOHLANWALL
29	533	SAKEENA W/O YOUNAS	GOV.GIRLS HIGH SCHOOL TO MURAD SHOP

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30	534	MANZOOR S/O SADEEQ	MD
31	539	ZUBAIDA W/O BASHEER	CUTT TO NURSURY FORM MULTAN ROAD WEST SIDE
32	543	LIYQAT MASIH S/O ISHRAF MASIH	UC OFFICE TO MALIK NOOR HOUSE
33	536	SADIQ S/O SOHNA MASIH	CUTT TO NURSURY FORM MULTAN ROAD EAST SIDE
34	547	NUSRAT BIBI W/O RAIZ	ROHI NALA PUL TO NIAZI BHATA WEST SIDE
35	540	HAROON S/O BARKAT	DEFENCE ROAD MOHLANWALL

- 10 sanitary workers deployed in each Team and each sanitary worker has his own defined beet.
- Solid waste is collected by sanitary workers from streets & households and hauled to container by wheelie bins / hand carts.
- Waste bags also used for roads sweeping

7 Solid Waste Storage

7.1 Waste Storage Facility

- Currently 41 waste storage containers are placed at 40 different points.
- Storage capacity is 10 tons in one time lifting
- Lifting is operational in 3 times

7.2 Points of Containers

Sr. No.	Location	Number
1	Near Khadim Hussain Shah house on Multan road	1
2	Near Veenas Factory on Multan road	1
3	Near Haq Darbar on multan road	1
4	Near babu pan stop on Multan road	1
5	NeAaar al hafiz Market bridge on multan road	1
6	Near CNG Pump multan road	1
7	Near Maraka Qawatar market Multan road	1
8	Near Rana Bakhtiar ahmed house Multan road	1
9	PSO Pump Multan road	1
10	Service shop Multan road	1
11	Service Stop Multan Road	1
12	Madina Colony Govt High school multan road	1
13	Near chaudry faiz rasool office multan road	1

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14	Near Shell Pump Multan road	1
15	Service shop Naajaf colony Multan Road Magrib side	1
16	Mian wali basti multan road magrib side	1
17	Near bata factory multan road magrib side	1
18	Backside of bata factory Near baba nokar shah house multan road	2
19	Near sarwar Sarwar shah house Chowk Peer ali hussain abad magrib side	1
20	Infront of Overest Factory Multan road magrib side	1
21	Near Maraka Qawatar Masjid Multan road	1
22	Mohlanwal baba shah darbar multan road	1
23	Near chaman bakery multan road	1
24	Supreme factory Multan road	1
25	Near Chaudry Muhammad saeed Dera Multan road	1
26	Near Doctor tariq house Multan road	1
27	Junior Model school Dalfi Road	1
28	Infornt of Jafrian Factory Dalfi road	1
29	Near Good luck floor Dalfi road	1
30	Punjab govt housing scheme Dalfi road	1
31	Al Riaz factory Dalfi Road	1
32	Shell pump Dalfi Road	1
33	US Factory Dalfi road	1
34	Ravi pull Dalfi road	1
35	Jilyana Gaon darbar k pas	1
36	Rakshad Chowk Jilyana chowk	1
37	Haji guddu Jilyana chowk	1
38	Haji Ganni Dairy Jilyana Gaon	1
39	Near Main house Jilyana gaon	1
40	Ishaq Masih house Bazar Jilyana Gaon	1
Total		41

8 Solid Waste Collection & Transportation

8.1 Time and motion study

A detailed time and motion study of the compactor is performed to access the collection efficiency of the compactor and ensure the timely lifting of the containers.

COMPACTOR ROUTES WITH TIME AND MOTION STUDY

UC & ZONE: 23, 122
COMPACTOR NUMBER: 1069
SHIFT: first
DRIVER NAME: Abbas Ali
CONTACT NUMBER: 0322-4306052

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APPROXIMATE MILEAGE: 32km

DEISEL CONSUMED:

PER KILOMETER DIESEL CONSUMPTION:

S.N	LOCATION OF CONTAINERS	NUMBER OF CONTAINER1S	TIME OF LIFTING
1	Ilyas khan hotel	1	10.10 / 10.12
2	Wainas pharma factory	1	10.14 / 10.16
3	Mohanwal adha main road	1	10.20 / 10.22
4	Defence road dawami auto	1	10.27 / 10.30
5	Alriyaz factory	1	10.33 / 10.35
6	CNG pump defence road	1	10.37 / 10.39
7	US factory defence road	1	10.44 / 10.46
8	Daira Malak Ghulaam Nazeer	1	10.54 / 10.56
9	Malak Ghani ke ghar k samne	1	10.58 / 11.00
10	Sagar ki dokan	1	11.03 / 11.05
11	Malak Ghani ke ghar k samne gali ma	1	11.07 / 11.09
12	Dabar Badshah Muhammad	1	11.15 / 11.17
13	Dasakon factory	1	11.22 / 11.24
14	Mohanwal adha defence road	1	11.27 / 11.29
15	Burjar paint shope defence road	1	11.34 / 11.36
16	Rana assosiait main road	1	11.40 / 11.42
17	CNG pump ke samne multan road	1	11.44 / 11.46
18	Ghandara auto multan road	1	11.49 / 11.51
19	Karnal Rana house main road	1	11.55 / 11.57
20	PSO pump main road	1	11.59 / 12.02
21	Oralmantid factory	1	12.07 / 12.09
22	Savas shope	1	12.11 / 12.13
23	Lohara wala kho masjid	1	12.17 / 12.19
24	Lohara wala kho main adha	2	12.20 / 12.25
25	Mian Restorent main road	1	12.27 / 12.29
26	Total pump multan road	1	12.32 / 12.34
27	Aimmanty factory	1	12.39 / 12.41
28	Savas shope multan road	1	12.44 / 12.46
29	Bata factory	1	12.48 / 12.50
30	Chudry furniture house	1	12.53 / 12.55
31	Govt. girls high medals school	2	12.57 / 01.08
32	High noon factory	1	01.12 / 01.15
33	Pathan walid hotel	1	01.17 / 01.20

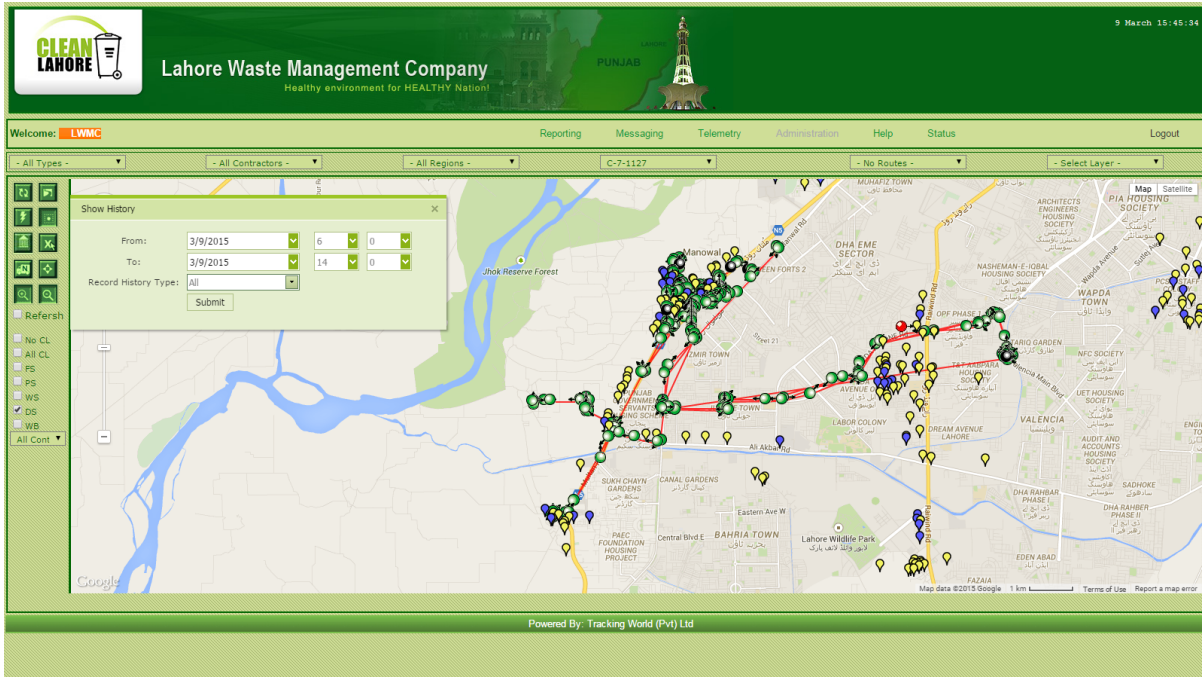
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34	Dhaira Chudhary	1	01.25/ 01.30
35	Chudhry sayyad k ghar k samne	1	01.35 / 01.40
TOTAL		37	

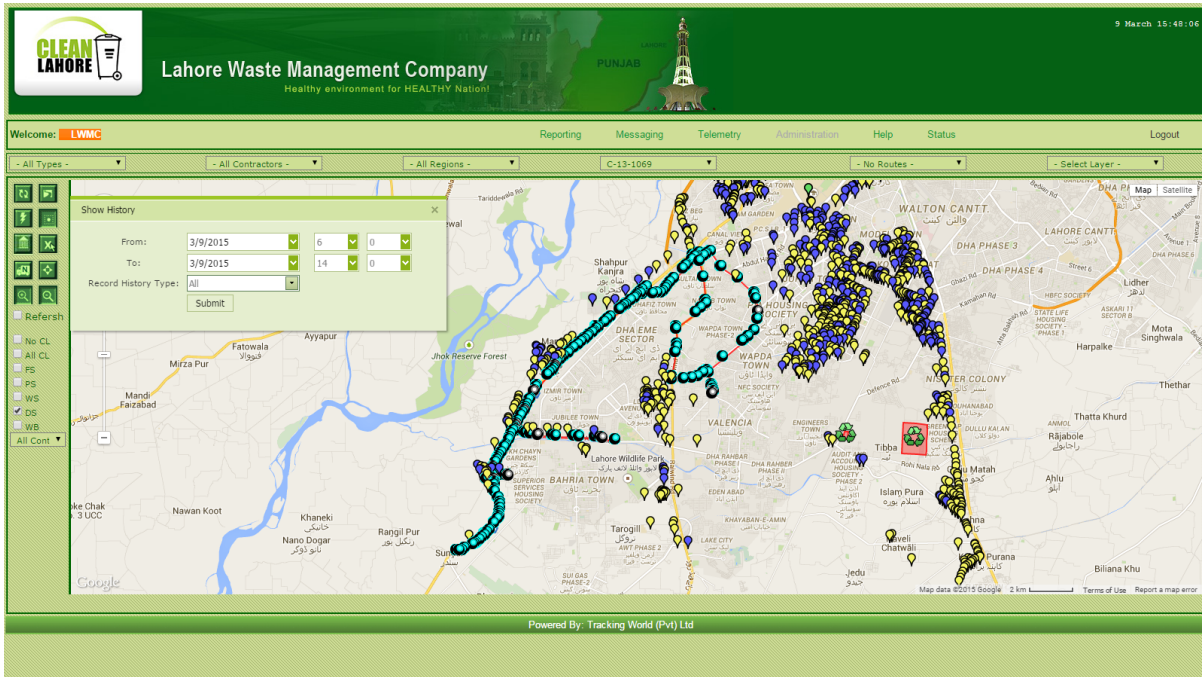
8.2 Staff Deployment for Compactor Vehicle

Compactors Zone-23									
Overall Incharge = Muhammad Usman Tariq (0300-8480538)									
Shift Supervisor = Imran (0324-4807432)				Shift Supervisor = ()			Shift Supervisor = ()		
1st shift				2nd shift			3rd shift		
UC	Vehicle No.	Driver Name & Mobile	Name of Helpers	Vehicle No.	Driver Name & Mobile	Name of Helpers	Vehicle No.	Driver Name & Mobile	Name of Helpers
121 122	1069	Muhammad Abbas Ali (0322-4306052)	Shakeel, Shan	1123	Ramzan (0306-4651451)	From UC	-	-	-
	1127	Farooq (0344-6461494)	Irfan, Arslan	1127	Ishtiaq Ahmad S/O Abdur Rahim (0302-7910147)	From UC	-	-	-

9 Compactor Route



Compactor Route 1127



Compactor Route 1069

10 Door To Door Waste Collection

9.1 System for D-T-D Waste Collection

- 1 Pickup for door to door waste collection
- Waste collected by pickup will be unloaded into nearby Compactor or transfer station.
- Compactors are also collecting waste if found in waste bags on road or in front of home or shop
- A fixed route is assigned to the mini-dumpers for collection.

11 Issues

- Poor infrastructure
- Rural Area
- Animal Waste
- Encroachments
- Open Plots heaps
- Illiteracy