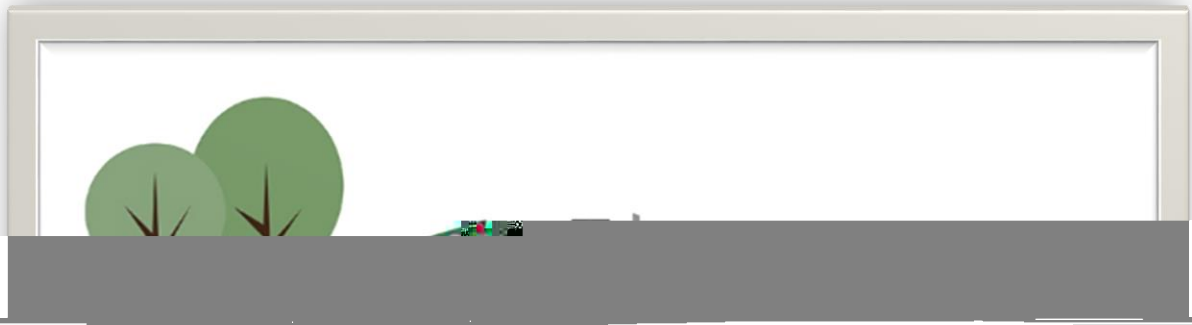


SOLID WASTE MANAGEMENT (SWM)
OPERATIONS PLAN
FOR

District	<u>TALAGANG</u>
Tehsil	<u>Lawa</u>



July, 2024
Rawalpindi Waste Management Company

List of Abbreviations

BW	Bulk Waste
DC	District Council
DtD	Door to Door
DS	Dumpsite
HH	Household
KM	Kilo Meter
LGCD	Local Government & Community Development
RWMC	Rawalpindi Waste Management Company
MC	Municipal Committee
MSW	Municipal Solid Waste
M³	Cubic Meter
SOP	Standard Operating Procedure
SWM	Solid Waste Management
SW	Sanitary Worker
TCP	Temporary Collection Point
UC	Union Council
WB	World Bank

1. Demography

The current Local Government and Community Development (LGCD) division of Tehsil/District comprises a blend of Municipal Committees and the Council. According to existing demography, the urban sector of the Tehsil consists of Municipal Committees, while the remaining areas fall under the jurisdiction of the District Council. Municipal Committees are organized into wards, whereas the Council comprises Union Councils, encompassing villages, towns, and other areas within the Tehsil.

Tehsil Lawa comprises 1 MC having 2 Urban and 6 Rural UCs. The main particulars of Tehsil Lawa are as follow;

Table 1: Summary of Tehsil Lawa

District		Talagang
Tehsil / MC		Lawa
No. of MCs		1
Urban	UCs	2
	Population	54,124
	HH	10,117
	Waste (tons/day)	23
Rural	Villages	18
	UCs	6
	Population	114,834
	HH	20,654
	Waste (tons/day)	38
Total	UCs	8
	Population	168,958
	HH	30,770
	Waste (tons/day)	61

Note: 0.42 kg/capita/day for Urban and 0.33kg/capita/day for Rural. Waste generation is an estimated amount and it may vary (-) from the above mentioned, however, any approval regarding change in estimated waste generation will be sought from the Board of RWMC.

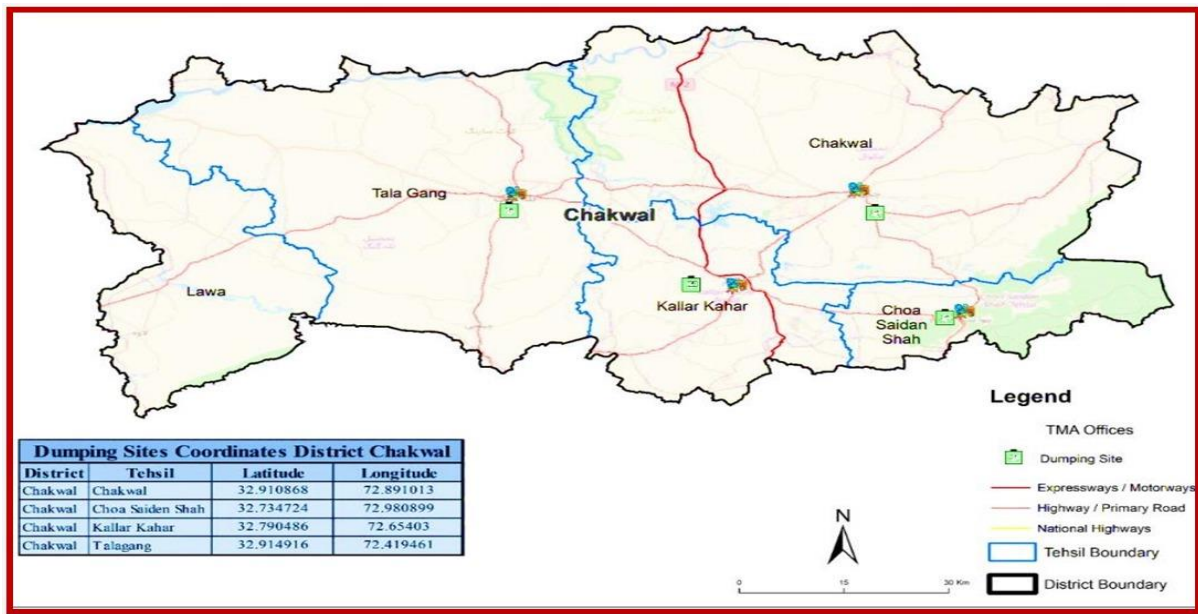


Figure 1 Map of District Chakwal

2. Existing Resources:

The lists / Annexures provided with Service Assessment and Management Agreement (SAAMA) signed between R assessment, given below in Table;

Table 2: Summary of Existing Resources of tehsil Lawa

Human Resource			
Tehsil	Sanitary Supervisors	Sanitary Workers	Driver
Lawa	1	8	0
Machinery			
Tehsil	Tractor Trolley	Compactor 7m ³	Mini Tipper
Lawa	1	0	0
	Dumper (10 CM)	Tractor Loader / Front End Loader	Tractor Mounted Water Booser / Washer
	0	0	0
	Rickshaws	Tractor Mounted Sweeper	Tractor with Hoe / Drain Cleaner
	2	0	0
Equipment			
Tehsil	Container	Hand cart	Bin / Drum
Lawa	0	0	0

3. Waste Streams

The solid waste being generated in any area is divided into two streams: Municipal Solid Waste (MSW) and Bulk Waste. Whereas, the total solid waste generation for urban areas is based on 0.42 kg per capita per day and for rural areas is based on 0.33 kg per capita per day.

i Municipal Solid Waste (MSW)

Municipal Solid Waste (MSW), is a waste type consisting of everyday items that are discarded by the public, including items like food scraps, packaging materials, paper, plastics, glass, and other disposable items. For the SWM planning of the tehsil, 70% of MSW generated in urban areas and 55% in rural areas, is estimated through best available information with the tehsil administration of total waste generated.

ii Bulk Waste (BW)

Bulk Waste refers to the large quantities of waste that are too large or too heavy to be collected through dedicated collection methods. Examples include construction debris, animal dung, and backlog mixed waste lying in open plots or open spaces anywhere in the tehsil. Proper collection of bulk waste typically requires special handling and procedures.

Table 3 Waste Generation Estimates

<i>Parameter</i>	<i>Urban</i>	<i>Rural</i>
Waste Generation Rate¹	0.42kg per capita per day	0.33kg per capita per day
Municipal Solid Waste (MSW) Proportion²	70%	55%
Bulk Waste (BW) Proportion²	30%	45%

4. Required SWM Operations Plan

infrastructure, socio-economic conditions, development resources and population dynamics of that area. APMC team visited each Municipal Committee and Union Council of the Tehsil to assess the requirements for proposed SWM system.

Various parameters have been collected from the discussion with concerned administrative officials and projected with the help of statistical models. The future system has been designed on the basis of:

- Population projection.
- Waste generation in these areas.
- Classification of SWM Services

¹ ADB Briefs No: 209, March 2022, Waste Sector Inclusion in the Revised Nationally Determined Contributions of Pakistan

² This proportion is agreed upon based on survey, feedback and discussion with the relevant Tehsil staff.

Upon area handover, the contractor must adhere to the outlined responsibilities, which as guidelines and minimum requirements. The contractor is also responsible for delivering top quality services governed by the contract document.

The contractor will provide uniforms, shoes and jackets to supervisors, sanitary workers, helpers as per following details.

- Uniforms of approved design by the client Twice a year
- Shoes of approved design by the client Once a year
- Jackets of approved design by the client Twice a year

and containers will be branded and designed by the contractor on the approved design by the client.

The detailed scope of services and proposed model is given below;

4.1. Scope of Services

- a. Mechanical Sweeping and Washing (Urban)
 - i. Mechanical Sweeping & Scrapping
 - ii. Mechanical Washing
- b. Manual Sweeping & Ditching
- c. Primary Waste Collection
 - i. Door to Door MSW Collection
 - ii. Bulk Waste (BW) Collection
- d. Temporary Waste Storage
 - i. Waste Enclosures
 - ii. Temporary Collection Points (TCP)
- e. Secondary Waste Collection
- f. Waste Disposal
- g. Zero Waste Activities
 - i. At the time of Tehsil takeover (once in the whole life)
 - ii. At least three to four requirement at different times.
- h. Public awareness campaign as approved by the client.
- i. Revenue Collection by contractor

4.2. Proposed Model

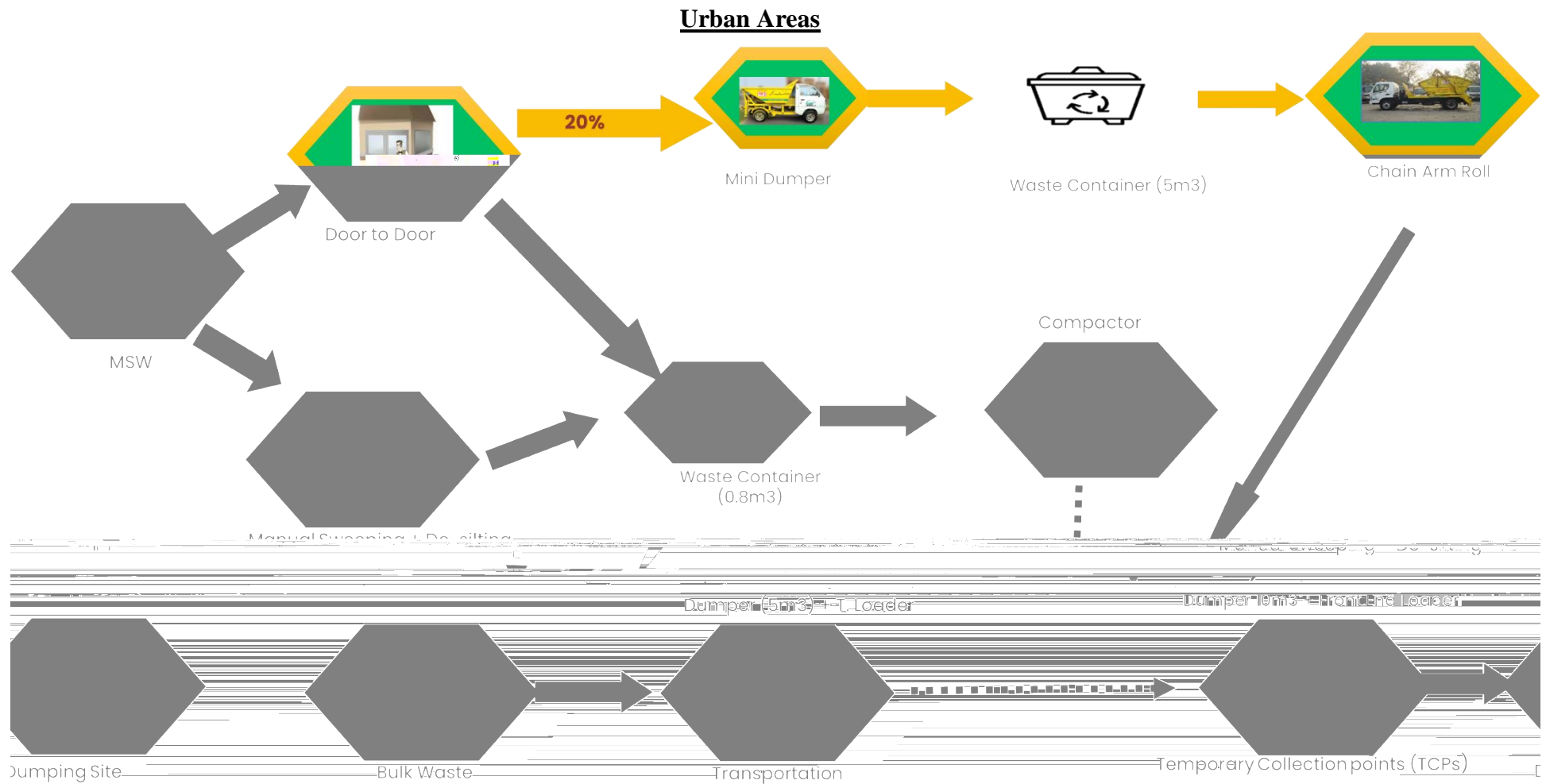


Figure1: Proposed SWM Model for Urban Areas

A. Mechanical Sweeping and Washing (Urban)

i. Mechanical Sweeping & Scraping

Mechanical sweeping, especially with vacuum equipment, can remove dust and rubbish simultaneously, a task not possible with manual sweeping alone. While manual sweepers clear litter from pavements and grass, technical limitations and street obstacles like parked cars mean mechanical cleaning is most efficient along with manual cleaning. Improved sweeping machines are now quieter, more economical, and meet emission standards, reducing the need for general personnel and allowing for more specialized roles like drivers and street cleaners. Additionally, the contractor will use appropriate tools and machinery for scraping activity of roads and client identified areas, removing accumulated mud, debris, and worn materials. The contractor is responsible for ensuring these areas are clean.

It is proposed to clear the roads (min. 20 KM daily) the tehsil through 01 Tractor Mounted Sweeper to improve the working efficiency as well as the cleanliness standards of the tehsil.

i. Mechanical Washing

Mechanical washing is another importance component of waste management system where, public places, major roads, dividers, walkways are washed to improve the cleanliness impact. It is proposed to wash / sprinkle the major roads as specified by the client (min. 05 KM daily per 01 tractor mounted water bowser / washer) and walkways of the tehsil through washer to improve the working efficiency as well as the cleanliness standards of the tehsil.

Table 4: Kind of Resources Required for Mech. Sweeping and Washing

<i>Resources</i>	<i>Urban</i>	<i>Rural</i>
Helpers		×
Drivers		×
Tractor Mounted Sweepers		×
Tractor Mounted Bowser / Washers		×

Table 5: Main Parameters for the Mech. Sweeping and Washing Activity

<i>Parameter</i>	<i>Urban</i>
Helpers	1 per Tractor Mounted Bowser / Washer
Drivers	1 per Tractor Mounted Sweeper 1 per Tractor Mounted Washer
Tractor Mounted Sweeper	1 no. 6 hours a day per Street and min. 20 km per day per VS

Tractor Mounted Washer	01 no. 6 hours a day per washer and min. 5 km per day p
Frequency	Daily

Contractor's Responsibility:

- Identification of the roads for mechanical sweeping and washing
- Formulation of the teams for mechanical sweeping and washing
- Formation of the schedule for mechanical sweeping and washing planning
- Deployment of resources as designed
- To arrange water sources for mechanical washing
- To train and guide the helpers and drivers on complete mechanical sweeping and washing mechanism
- To ensure adequate mechanical sweeping and washing as per given resources, mechanism and design parameters

B. Manual Sweeping & De-silting

For major roads and inner streets cleaning in the tehsil, manual sweeping will be ensured. Moreover, Open drains are present in the urban area of tehsil, which needs regular silting to avoid any clogging of drains.

Mechanism:

Manual Sweeping: A dedicated team of sanitary workers with handcarts will be deployed to ensure proper manual sweeping and silting of the tertiary drains (i.e.2 feet wide open) in the given areas. Manual sweeping of residential areas will be done as per the client's specified frequency. Meanwhile, commercial areas, both rural and urban of whole tehsil, will be swept daily. This activity will be monitored by the through their digital monitoring system and staff.

The dedicated teams will engage in manual sweeping where infrastructure present, such as metaled roads, rigid pavements & tuff paved streets etc. workers will make small heaps of collected waste on roads or streets sides and then collect the waste and dump in the nearby container.

De-silting: These dedicated teams /gangs of sanitary workers will also perform de-silting of tertiary drains (2 feet wide open) and collect waste of channels. This silt will then be collected through hand carts and will be unloaded into nearby container or mini dumpers.

Moreover, a drain cleaner will be also being deputed in each tehsil for drain cleanliness purposes.

Table 6: Kind of Resources Required for the Manual Sweeping and Desilting

<u>Resources</u>	<u>Urban</u>	<u>Rural</u>
Sanitary Workers		
Hand Carts		
Brooms		
Drain Cleaner and other De-silting tools		

Table 7: Main Parameters for the Manual Sweeping and Desilting Activity

<u>Parameter</u>	<u>Urban</u>	<u>Rural</u>
Sanitary Workers (SW)	1 SW per 1000 persons	1 SW per 250 HH
Hand Carts	1 per 2 SW	1 per 2 SW
Frequency (Residential areas)	Thrice a Week	Twice a Week
Frequency (Commercial areas)	Daily	Daily
Drain Cleaner	1 no.	1 no.

Contractor's Responsibility:

- Formulation of the beats and respective teams of sanitary workers for manual sweeping and desilting
- Formation of the schedule for sanitary workers
- Provision of resources
- To train and guide the sanitary worker on complete manual sweeping and desilting mechanism
- To ensure 100% Manual sweeping and desilting as per given targets, resources, mechanism and design parameters

C. Primary Waste Collection

i. Door to Door MSW Collection

Mechanism:

For residential and commercial areas, 100% door to door (DtD) waste collection is proposed to ensure maximum cleanliness in the area.

Urban: For the DtD services (reference to Figure 11), the waste collection is divided into two modes i.e. Container based (80%) and Mini Dumpers (20%). A team of dedicated sanitary workers based on 1 sanitary worker per 1000 population (Urban Areas) will be deployed to collect waste from doorsteps.

1 handcart will be given per sanitary workers which will be emptied in nearby container. These containers will be emptied in the compactors.

Whereas, the Mini Dumpers will also be given for door to door collection. These mini dumpers will be emptied at the nearby compactor for CM from where Chain Arm Roll will lift the container and disposed off it at TCP.

Rural: For DtD services, 100% of MSW will be collected door to door using mini dumper, each staffed with one driver & one sanitary worker. 01 Mini Dumper will be allotted for 250 HH on alternative days. These mini dumpers will transport the waste to the nearest Waste Enclosure. DtD collection through mini dumpers entire rural tehsil will be done thrice a week.

Installation of Drums of Approved Design: In rural areas door to door waste collection will be done on alternative days. To prevent littering and provide proper disposal of household waste, drums will be installed in all rural UCs of the tehsil, with one drum per 1,500 people. These drums will be emptied into mini dumper or tractor trolleys.

Table 8: Kind of Resources Required for the Door to Door Collection

<u>Resources</u>	<u>Urban</u>	<u>Rural</u>
Sanitary Workers		
Helpers		
Drivers		
Hand carts		x
Containers 0.8m ³		x
Mini Dumpers		
Containers 5m ³		x
Chain Arm Roll		x
Drums	x	
Compactors 7m ³		x

Table 9: Main Parameters for the Door to Door Activity

<u>Parameter</u>	<u>Urban</u>	<u>Rural</u>
Door to door collection	100 %	100%
Waste collection Frequency	Daily	Thrice a Week
Waste availability	Readily available at doorstep	Readily available at doorstep
Sanitary Workers	1 SW per 1000 Persons	1 per Mini Dumper
Helpers	2 per Compactor	
Drivers	1 per Compactor 1 per Chain Arm Roll 1 per Mini Dumper	1 per Mini Dumper
Hand carts	1 per 2 SW	-

Containers (0.8m³)	Capacity 250 kg 1-time lifting Will handle 80% of generated MSW	-
Mini Dumpers	Min. Capacity 700 kg 2-3 trips daily Will handle 20% of generated MSW	1 per 250 HH (Alternative day) Capacity 700 kg 2 trips daily
Compactors 7m³	Min. Capacity 4 tons 3 to 4 trips to TCP	-
Containers (5m³)	Min. Capacity 2.5 Tons One-time lifting daily MSW offloaded from Mini dumpers	-
Chain Arm Roll	Min. Capacity 2.5 tons 4-5 trips to TCP	-
Drums	-	1 per 1500 Population

Number of vehicles / machinery may be changed with the prior approval from Board of Directors RWMC keeping in view the same volumetric capacity

Contractor's Responsibility:

- Formulation of the beats and respective teams of sanitary workers
- Formation of the schedule for sanitary work planning
- Provision of resources
- To train and guide the sanitary worker on complete DtD mechanism
- To ensure 100% DtD services as per given targets, resources, mechanism and assumptions

ii. Bulk Waste Collection

Mechanism:

Urban: Bulk waste (approx. 30% of total waste) will be lifted by using 3 dumpers 5 m³ and Tractor Loaders. Dedicated sets of Tractor Loader and 10 dumpers will be deployed in each tehsil to cater the bulk waste on daily basis to ensure zero waste in the entire tehsil. The machinery will be deployed as per schedule to attend all possible areas of the tehsil including open plots, open heaps, open dumps, dunghills, hotspots, debris etc. These dumpers will directly be unloaded into the nearby TCPs of the tehsil, for further disposal.

Rural: Bulk waste (45% of total waste) will be lifted by using Tractor Trolleys and Tractor Loaders. Dedicated sets of Tractor Loader and 10 trolleys will be deployed in each tehsil to cater the bulk waste on daily basis to ensure zero waste in the entire tehsil. The machinery will be deployed as per schedule to attend all possible areas of the tehsil including open plots, open heaps, open dumps, dunghills, hotspots, debris etc. These Trolleys will directly be unloaded into the nearby TCPs of the tehsil, for further disposal.

Table 10: Kind of Resources Required for the Bulk Waste Collection

<u>Resources</u>	<u>Urban</u>	<u>Rural</u>
Drivers		
Tractor Loaders		
Tractor Trolleys	×	
Dumpers 5m ³		×

Table 11: Main Parameters for the Bulk Waste Collection Activity

<u>Parameter</u>	<u>Urban</u>	<u>Rural</u>
Bulk Waste	30% of total waste	45% of total waste
Drivers	1 per Tractor Loader 1 per Dumper 5m ³	1 per Tractor Loader 1 per Dumper 5m ³ 1 per Tractor Trolley
Tractor Loader	1 per 2-3 Dumpers 5m ³	1 per 2-3 Dumpers 5m ³ 1 per 2-3 Trolleys
Dumper 5m ³	Designed Capacity 3.5 tons 5 trips	-
Tractor Trolley	-	Designed Capacity 2.5 tons 3 trips
Frequency	Daily (as per schedule)	Daily (as per schedule)

Contractor's Responsibility:

Identification of open plots, heaps, dunghills, hotspots, debris and illegal dumping points.

Formation of the schedule for the machinery sets for clearance of bulk waste on regular basis.

Microplanning
Provision of resources

The contractor will use a fleet of trolleys and dumpers, operating at a designed capacity, to transport bulk waste.

The contractor will cover the bulk waste with tarpaulins to prevent any spillage on roads during transportation.

To train and guide the sanitary worker on complete bulk waste clearance.

To ensure 100% bulk waste clearance as per given targets, resource mechanism and assumptions

D. Temporary Waste Storage

i. Waste Enclosures (WE)

For rural areas Waste Enclosures are proposed instead of the Mini dumpers. These Waste enclosures will not only save transportation time but will also save cost of trips of Mini dumpers. The machinery at Waste Enclosure is proposed on tonnage lifting basis. It is proposed to establish 03 Waste Enclosures in each Council of Rural areas.

Table 12: Kind of Resources Required for Waste Enclosures

<u>Resources</u>	<u>Rural</u>
Drivers	
Dumpers 5m³	
Tractor Loader	

Table 13: Main Parameters Required for Establishment of Waste Enclosures & Removal of Waste Activity from Enclosures

<u>Parameter</u>	<u>Rural</u>
Number of Enclosure	3 Enclosures per UC
Clearance Frequency	Twice a week
Area	5 - 7 Marlas
Specifications	RCC flooring Precast Planks
Dumpers 5m³ for waste enclosure	Capacity 3 tons 5 trips
Tractor Loader	1 per 2-3 Dumpers 5m ³

Contractor's Responsibility:

- Identification of sites for establishment of Waste Enclosures (WEs)
- Formulation of specifications of the WEs and approval from concerned client and authorities
- Establishment of Wes as per designed number and as per approved agreed specifications

ii. Temporary Collection Points (TCPs)

The farther the ultimate disposal site is from the collection area, the greater savings that can be realized from use of a Temporary Collection Point (TCP). The

minimum distance at which use of a TCP becomes economical depends on local economic conditions.

Mechanism:

The MSW and BW collected from entire tehsil through different modes and machinery will ultimately be collected at the Temporary collection points (TCPs). Waste collection vehicles will temporarily dump waste at TCPs from where it will be transported to dumpsite for controlled disposal on daily basis. The TCPs will be established in the tehsil as per requirement. The TCPs to be designed to cater at least 150 to 200 tons of solid waste on an area measuring 2 to 3 Kanals. The complete management of TCPs as per standard practices from establishment to clearance and maintenance would be the responsibility of respective contractor.

Table 14: Main Parameters for Establishment of TCPs & Removal of Waste from TCPs

Parameter	Urban	Rural
Areas	2 Kanals	2 Kanals
Capacity	150 to 200 tons	150 to 200 tons
Specifications	RCC flooring Precast Planks	RCC flooring Precast Planks
Clearance Frequency	Daily	Twice a week

Contractor’s Responsibility:

Formulation of specifications of the TCPs and their approval from concerned client and authorities

Establishment of TCPs as per designed number and as per approved and agreed specifications

The tentative list of TCPs for the tehsil is as under;

Table 15: List of Tentative TCPs

Urban + Rural (Joint)	
1	Lawa City

E. Secondary Waste Collection

Secondary Waste collection refers to transportation of waste from Temporary Collection Point (TCP) to disposal site. For the said secondary waste collection purposes dedicated machinery sets Dumpers and Front End Loaders are deployed at each TCP. The TCPs are cleared on daily basis to ensure Zero waste.

Table 16: Main Parameters Required for Establishment of TCPs

<u>Parameter</u>	<u>Urban</u>	<u>Rural</u>
Drivers	1 per Dumper 10m ³ 1 per Front End Loader	1 per Dumper 10m ³ 1 per Front End Loader
Dumpers 20m³	Capacity 15 tons 5 trips to DS Minimum 1 at each TCP	Capacity 15 tons 5 trips to DS Minimum 1 at each TCP
Front End Loader	1 per TCP	1 per TCP
TCP clearance Frequency	Daily	Daily

Contractor's Responsibility:

Deployment of resources as designed

TCPS management and maintenance on regular basis

To ensure waste clearance from TCPs as per given targets, resource mechanism and assumptions

Waste clearance frequency for joint TCP (urban and rural) on the urban schedule of daily clearance.

F. Waste Disposal

The contractor will establish a controlled dumpsite including Weigh Bridge

environmental and health hazard. A 3 feet thick clay lining will be installed on the foundation/embankment with a slope specified by the client based on existing ground conditions. The clay lining will have an acceptable permeability limit. The embankment will be designed to allow the flow by gravity to a designated collection point. This leachate will be collected with a gully sucker and regularly sprinkled on access roads and waste. Furthermore, fencing for access control, daily soil covering to prevent waste spread, pest scavenging, and fires, with staff and machinery to ensure proper waste handling. The List of resources is tabulated below. Moreover, the contractor will establish a controlled dumping site until then, the contractor will arrange to make shift arrangements for site dumping / disposal

Table 17: Kind of Resources Required for Controlled Dumpsite

<u>Parameter</u>	<u>Unit</u>	<u>Definition</u>
Design Area		
Design Life		
Pit less Weigh	□	

Bridge & its allied facilities		
Machinery		
Working Hours		
Human Resource		

Contractor's Responsibility: Installation of Weigh Bridge and allied facilities

Establishment of dumpsite as per approved designed standards by the client.

The contractor will establish a weighbridge of size 30 feet x 10 feet (30' x 10'), including its supporting structure made of steel with a size of 600 x 200mm x 9 feet 6 inches.

The cross girder (26 No.) will consist of, measuring 200 x 100mm x 9 feet 6 inches.

The supporting girder (02 No.) will be 200 x 100mm x 9 feet 6 inches, incorporating an MS plate of 12mm plate (30 x 10) feet

Junction box (01 No.) compatible.

The weighbridge will have a lane size of 30 x 10 feet and a weighing capacity of 60 tons.

All necessary accessories will be included, and fitting installations will be completed as part of the job. RFID System (complete trunk key solution) IP Cameras, UPS & Generator, Controller, Desktop Computer, AC, AVR (Automatic Voltage regulator) etc.

Rigid pavements (RCC slab, compacted base course etc.) of minimum 1 feet thickness & length approx. 15 feet on each side of Weigh Bridge as per client approved designed.

Additionally, the contractor will establish an operator room with minimum size of 20 x 12 feet, incorporating all necessary facilities such as a toilet, kitchen as per approved designed by client.

Contractor will build security guard room on top of operator room as per approved designed by the client.

Weigh bridge cost will be in the custody of client R/W/C.

Contractor will only establish and maintain R&M related works.

Contractor will deploy resources as per client designed criteria.

Dumpsite management and maintenance on regular basis as per designed criteria

- o Leveling, compacting and Soil Covering & sprinkling of collected leachate on dumped waste.

G. Zero Waste Activities

The contractor will conduct at least following zero waste activities;

- i. At the time of Tehsil take-over (once in the whole contract life)
- ii. A different times done within scope of work.

One Time Cleaning and Rehabilitation/Reclamation of Existing Dump site:

Client may ask to contractor to perform one time cleaning activity of all backlog of waste present in the area identified by the contractor for approval of the client. For the said activity the contractor will identify the hotspots carrying backlog waste, including open plots, open heaps, depressions etc. along with the coordinates. The contractor will get the list of these identified hotspots approved from the client and will get them cleaned accordingly.

Client may ask to contractor for rehabilitation/reclaiming of existing dumpsite with proposed mechanism identified by the client. The prices of the above two activities will be decided by the client and contractor and intimated to the contractor after the approval of the BOD of Client.

In the future, if GOPb establishes MRFs in the respective Tehsils, the contractor may be asked to segregate waste at TCPs. Further, its transportation

H. Revenue Collection

Contractor will be responsible for revenue collection in entire tehsil. Detailed mechanism of revenue collection is explained in sub heading 11.

I. Public Awareness Campaign

The contractor's plan will include a public awareness campaign, subject to prior approval from the client. The contractor will submit a detailed micro plan for the campaign, covering schools, residential areas, and commercial areas. Contractor will ensure proper branding of all containers, hand carts, waste drums and operational as per the design / specimen approved by the client.

5. Required Resources

5.1. Human Resource

Table 18: Required HR

Area	Description	Total Required
------	-------------	----------------

Urban	SW	61
	Supervisor	2
	Driver	12
	Helpers	4
Rural	SW	47
	Supervisor	2
	Driver	26
	Helpers	-
Total	SW	108
	Supervisor	4
	Driver	38
	Helpers	4

5.2. Machinery

Table 19: Required Machinery

Area	Type of Vehicle	Total Required
Urban	Mini Dumper	2
	Compactors (7m3)	1
	Armrolls	1
	Dumpers (5m3)	2
	Tractor Loader	1
	Dumper (20m3)	1
	FrontEnd Loader	1
	Mechanical Sweeper	1
	Tractor Water Bouzer	1
	Drain cleaner/Tractor with Hoe	1
Rural	Mini Dumper	21
	Dumpers (5m3)	2
	Tractor Loader	1
	Tractor Trolley	2

5.3. Tools & Equipment

Table 20: Required Tools & Equipment

Area	Description	Total Required
Urban	Containers (0.8m3)	51
	Containers (5m3)	4
	Hand Carts	31
Rural	Drums	77
	Hand Carts	23

5.4. Dumpsite Machinery

Table 21: Required Machinery for Dumpsite

Sr. #	Description	Total
1	Dumper(10m3)	1
2	Front End Loader	1
3	Gully Sucker (4000 Liters)	1
4	Excavator	1
5	Bulldozer	0
Total		4

Note: 1 Driver and 1 Helper of each of the above mentioned dumpsite machinery will be deployed.

6. Comparison

6.1. Human Resource

Table 22: Comparison of HR

HR		
Description	Designation	Quantity
Required	SW	108
	Supervisor	4
	Driver	38
	Helpers	4
Existing	SW	8
	Supervisor	1
	Driver	0
	Helpers	0
Additional	SW	100
	Supervisor	3
	Driver	38
	Helpers	4

6.2. Machinery

Table 23: Comparison of Machinery

Machinery (excluding Landfill Machinery)				
Area	Type of Vehicle	Required	Existing	Additional
Urban	Mini Dumper	2	0	2
	Compactors (7m3)	1	0	1
	Armrolls	1	0	1
	Dumpers (5m3)	2	0	2
	Tractor Loader	1	0	1
	Dumper (20m3)	1	0	1

	Front End Loader	1	0	1
	Mechanical Sweeper	1	0	1
	Tractor Water Bouzer	1	0	1
	Drain cleaner/Tractor with H	1	0	1
Rural	Mini Dumper	21	0	21
	Dumpers (5m3)	2	0	2
	Tractor Loader	1	0	1
	Tractor Trolley	2	1	1

6.3. Tools & Equipment

Table 24: Comparison of Tools & equipment

Tools & Equipment				
Area	Type of Vehicle	Required	Existing	Additional
Urban	Containers (0.8m3)	51	0	51
	Containers (5m3)	4	0	4
	Hand Carts	31	0	31
Rural	Drums	77	0	77
	HandCarts	23	0	23
Total		186	0	186

7. Special services on Special Events

The contractor will ensure special cleanliness services and availability of requisite resources for special events including;

- Monsoon
- Eid-ul-Fitr
- Ramadan
- Eid-ul-Adha
- Muharram
- Eid Miladul-Nabi
- Christmas
- Any other event or emergency

The contractor will prepare proper SWM plan prior to each event for execution accordingly. The SWM plan should cover;

- Standard Operating Procedure (SOPs)
- Hotspots as per the event
- Resource Required
- Deployment plan

8. Overall Monitoring of Operations

The client will develop a digital monitoring system, which will be used for measuring work progress for quality assurance and payment purposes. The Digital Monitoring System will report on predefined Key Performance Indicators (KPIs). It will be based and include field monitoring by the client's supervisory team, village/ward committee notified by the client (VTMS/Digital Monitoring Mechanism).

Moreover, *Work Satisfaction Stakeholder Committee (Village/Ward Committee)* will also be constituted. The committee will consist of representatives from the public, who will be asked to report on the work satisfaction from the public perspective and can be linked to the payment mechanism. The Stakeholder Committee will be set up by the client, and its members will be decided within a reasonable time from the contract signing. The role of the committee is purely voluntary and will not supersede the management's opinions. Further, the client will also nominate its committee to resolve any disputes regarding work verification.

In the case of the digital monitoring system being functional, the payment will be processed based on the submission of a verification report by the monitoring team to the client clearly based on the performance indicators.

9. Human Resource Management

For overall execution of Operations as per plan and its supervision, Sanitary Supervisors are proposed for the overall SMW management. One Supervisor is proposed for 25 Sanitary Workers in both Urban and Rural areas. Administration cost (2% of the cost) is included in the project cost.

10. Cost Estimates

Table 25: Costing Detail of tehsil Lawa*

Annual Estimated Cost (Rs. in Millions)	PKR 464.25 Million
Cost per Ton (Rs.)	Rs.20,979
Cost per Capita per Month (Rs.)	Rs.229

Note:

Life of 0.8m3 containers 2 Years
Life of 5m3 containers 3 years
HR Cost is tabulated below;

Particulars	HR Cost / Employee / Month
Sanitary workers	41,440
Supervisors	44,620
Helpers	41,440
Drivers	44,620

HR cost includes salary, social security, EOBI and GLI
HR cost of existing staff is not included in cost estimates. Only the deficit staff HR cost is included in Cost estimates.
Total cost including of all taxes
Escalation factor based on minimum wage of PKR 8000 per month as on 04/04/2024
Escalation factor based on high speed diesel price of PKR 457 per liter as per PSO as on July 04/2024
3% of operational cost per year is included for special events/ Eid Ul Azha/zero waste activity
1% of operational cost per year is included as contingency.
Rental cost of existing resources not included in cost estimates.
Fitness certificate & emission reports from transport department will be mandatory for all vehicles
Cost of Temporary collection points and waste enclosures is included in cost estimates
Janitorial material (broom, lime etc.), PPE (masks, Gloves etc.), uniform Hand carts cost is included in cost estimates
Cost of PKR 200,000 per month for public awareness also included in cost estimates
Hand cart life 1 year.
Cost estimates are based on 26 working days in a month
Monitoring cost of PKR 800,000/month (annual PKR 9,600,000) is included in cost estimates which will be recovered from the contractor after implementation
Waste Disposal cost is included.
All waste carrying/transportation vehicle should be covered properly to avoid littering.
Monitoring vehicle of 1300 cc will be provided by the contractor to the client till the project period for monitoring purposes and the cost of said vehicle will be borne by contractor.

11. FEE COLLECTION BY CONTRACTOR

I. Fee Collection Responsibilities:

The contractor providing sanitation services in the Tehsil shall also be responsible for collection from the households and commercial entities etc. on the prescribed rates by RWMC and based on the customer database to be provided by the client.

II. Administrative / Collection Charges:

The contractor will be entitled to administrative / collection charges at the incremental slab based ratios prescribed below in Table 11.1 for the amount of fee collected. However if the contractor fails to collect the fee target (25%, 40%, 60% for year 1, 2, 3 respectively), the contractor shall be penalized at the incremental / slab based ratios prescribed below in Table 11.2.

III. Fee Deposit and Payment Process:

- The Contractor shall deposit full amount (100%) of fee into the bank account provided by RWMC.
- The contractor will submit separate invoice for administration charges on the amount collected on monthly basis.

IV. Commencement of Fee Collection:

Fee collection from households and commercial entities etc. shall commence on a date specified by the client but not later than four months after the execution of the contract. However contractor will ensure zero billing to consumers in that period.

V. Digital Billing System:

RWMC will establish a digital billing system to facilitate the contractor in fee collection.

VI. Enforcement of Bill Recovery:

RWMC, local governments and the District Administration will enforce and facilitate the bill recovery mechanism under the powers granted to them by the Local Government Act and other applicable rules.

VII. Fee Charges Compliance:

The contractor is obligated to collect and submit fee charges according to the rates notified by the Government of Punjab (GOPb.).

Table-11.1: Admin. / Collection Charges Mechanism for Fee Collection

Fee Collection Target (of assessed value)	Fee Collected	Contractor Share / Admin. Charges
25% (1 st Year)	25%	10% of the Fee Collected
	25% to 50%	10% + 15% of the additional collection
	50% to 60%	10% + 15% of the additional 25% + 20% of remaining

	80% to 100%	10% + 15% of the additional 25% + 20% of additional 30% collection + 25% of the remaining
40% (2nd Year)	40%	10% of the Fee Collected
	40% to 60%	10% + 15% of the additional collection
	60% to 80%	10% + 15% of the additional 20% + 20% of remaining
	80% to 100%	10% + 15% of the additional 20% + 20% of additional 20% + 25% of the remaini
60% (3rd Year)	60%	10% of the Fee Collected
	60%to 80%	10% + 15% of the additional collection
	80% to 100%	10% + 15% of the additional 20% + 20% of remaining

Table-11.2: Penalty Mechanism for Below Fee Collection Target

Fee Collection Target (of assessed value)	Fee Collected	Contractor Penalty
25% (1st Year)	>20%to ≥5%	No Administrative / Collection Charge the Contractor, No penalty
	>15%	No Administrative / Collection Charge 1% deduction from the monthly Invoice the Contractor against SWM Services
	>10%to %	No Administrative / Collection Charge 2% deduction from the monthly Invoice the Contractor against SWM Services
	>5%to %	No Administrative / Collection Charge 5% deduction from the monthly Invoice the Contractor against SWM Services
	Less than 5%	Termination proceedings under the contract
40% (2nd Year)	>25%to<40%	No Administrative / Collection Charge the Contractor, No penalty
	>15%to %	No Administrative / Collection Charge 1% deduction from the monthly Invoice the Contractor against SWM Services
	>10%to %	No Administrative / Collection Charge 2% deduction from the monthly Invoice the Contractor against SWM Services
	>5%to %	No Administrative Charges 5% deduction from the monthly Invoice the Contractor against SWM Services
	Less than 5%	Termination proceedings under the contract
60% (3rd Year)	>30 %to<60%	No Administrative Charges to the Contractor, No penalty
	>20%to %	No Administrative Charges 1% deduction from the monthly Invoice the Contractor against SWM Services

	>10%to %	No Administrative Charges 2% deduction from the monthly Invoice the Contractor against SWM Services
	>5%to %	No Administrative Charges 5% deduction from the monthly Invoice the Contractor against SWM Services
	Less than 5%	Termination proceedings under the contract

12. PUBLIC AWARENESS CAMPAIGN

Contractor will ensure proper branding of all containers, hand carts, waste drums operational fleet as per the design / specimen approved by the client.

MILESTONES, TIMELINES, KPIs AND PENALTIES

DIGITAL PERFORMANCE MONITORING MECHANISM

Resource based contract pricing (based on HR, Fleet and Allied Equipment).

Proposed Payment Mechanism

HR will be monitored through Facial/Biometric/Recognition based Attendance System.

Waste Collection & Disposal through digital monitoring system at Landfill Site.

Machinery will be monitored through Artificial Intelligence based Fleet Management Software.

Container Clearance will be monitored through Digital Monitoring of Fleet and Tagging of Containers.

Manual Sweeping and Commercial Areas clearance will be monitored through Digital Monitoring System (pictorial evidence).

Complaint Management Response Time.

Execution of Weekly and Monthly plans.

Penalties will be applied through evidence based digital monitoring system in violation of the KPIs

- i. Digital Monitoring System for staff attendance, service delivery compliance and KPIs monitoring (Facial/Biometric Recognition, Tagging before after pics, field monitoring through evidence based real time information)
- i. Smart AI based Fleet Management System in all vehicles to check the compliance of each category of vehicle w.r.t operational p
- ii. RFID based Vehicle Weighing System at Landfill Site for actual waste collection value transported to disposal site.
- iii. Complaint Redresser System (CRS) through Help Line and Dastak App.

Contractor shall submit operational plans before execution of the same for client review and approval. Plans will be based on optimal utilization of resources for each activity with defined resources and timeline and to ensure the compliance of work as per SOPs/KPIs defined by the client.

Proposed Payment Mechanism – Tehsil Lawa

(The invoice calculation will be based on daily working w.r.t parameters evaluated)

Sr. No	Activity	% Value	Key Factors/Variables	KPIs	Numbers
1	Waste Collection (Tonnage Based value)	60	1. Waste Disposal through Digital Weigh System.	<ul style="list-style-type: none"> Real time VTCS Report / Counting Application. Contractor has to ensure minimum 75% transportation defined by the at dump site for safe disposal. 	40
			2. Container Collection/Clearance per KPIs.	<ul style="list-style-type: none"> Deduction of waste collection activity of that day in case of non-compliance complaints/observation/VTMS number increased to 10% of containers approved as per plan. 	3
			3. Deployment of Fleet per Plan and KPIs.	<ul style="list-style-type: none"> In case, deficiency number increased to 10% or a deduction of waste collection activity of that day. 	3
			4. Door to Door Waste Collection as per Plan and KPIs.	<ul style="list-style-type: none"> 90 % Compliance of approved plan is mandatory. Processing to be monitored through deployment of resources, area coverage verification by area office committee. 2 point deduction of activity in case coverage is between 15% - 20%. 5 point deduction in case coverage varies from 20% - 25%. Full deduction in case coverage increases above 25%. 	10
			6. Collection from Commercial Areas as per Plan and KPIs.	<ul style="list-style-type: none"> 1 point deduction of activity in case coverage is less than 10%. 2 point deduction in case coverage varies from 10% - 20%. Full deduction in case coverage increases above 20%. 	2
			7. Deployment of Containers as per Plan and KPIs.	<ul style="list-style-type: none"> In case, deficiency number increased to 10% or a deduction of waste collection activity of that day. Container repair and aesthetic to be ensured by contractor. 	2
			2	Manual Sweeping (Number of Workers per plan / Actual Present)	15

		2. Street Sweep (Residential commercial) Clearance as per KPIs	<ul style="list-style-type: none"> Deduction of manual sweep activity of that day in case increased to 100 complaints/observations per day. 	05
		3. Street Sweep (Commercial) Clearance as per KPIs	<ul style="list-style-type: none"> Deduction of manual sweep activity of that day in case increased to complaints/observations/day 	1

4. Workers Presence
Beats in duty hours

			3. Collection of Bulk Waste as per Plan, SOPs and KPIs	<ul style="list-style-type: none"> Deduction of waste collected in case of unapproved vehicle/entry by client. 	03
7	Dumpsite Management	05	1. Availability of Machinery and HR as per plans, SOPs and KPIs.	<ul style="list-style-type: none"> Deduction of waste disposal activity of that day in case of deficiency number increased to 10% of total number of workers deployed/day. 	02
			2. Environment friendly disposal of waste as per plan, SOPs and KPIs.	<ul style="list-style-type: none"> Deduction of waste disposal activity of that day in case of non-compliance observed. 	03
8	De-Silting	05	1. Deployment of Resources as per plan and KPIs	<ul style="list-style-type: none"> In case, deficiency number increased to 10% or above, deduction of Desilting activity for that day 	2
			2. Work done/completed as per Plan and KPIs	<ul style="list-style-type: none"> Work deduction in case of activity impact is not as per SOPs. 	3
Total		100			100

Key Notes: Mechanism to verify DTD area collection, Dump Site Management for environment friendly disposal of waste, silting activity, TCP management, Bulk waste collection etc part of operational plan submitted by the contractor for approval of client based on SOPs / devised by client.

OPERATIONAL PLANS

Contractor will submit the operational plans against each BIMCO with approval after reviewing the plans before execution of services under the contract. Any change / modification in plan after execution of contract shall be approved by the Client (With consent / approval of Board of Directors)

Frequency	Plans	Bidder to Specify (Compliance)*
Weekly	Plan of Washing Containers	
	Plan of Repairing of Containers	
	Deployment plan for Emergency Response Gang/Complaints/VVIP Movement	
Monthly	Contractor will submit GIS based UC II operational model/plan with resources covering Door to Door & Container bay collection, manual sweeping and waste transportation based on GIS Mapping.	
	De-silting Plan with deployment of resources both HR and Mechanical ensuring removal of DeSilted material.	
	Sunday/Friday Market Cleaning Plan	
	Mosque/Church/Imam Bazar/Grove Yards cleaning/Washing Plan	
	City Furniture Washing Plan	
	Plot Clearance Plan	
	Mechanical Sweeping and Mechanical Washing Plan	
Biannually	Distribution Plan of Uniforms and PPE	
	Health and Safety Training Programs	
	Plans of Counselling of field workers	
Yearly	Execution Plan	
	Procurement Plan	
	Waste Recycling and Recovery Plan	
	HSE Plan	
	Ramzan Bazar Cleaning Plan	
	Eid-ul Fitar & Eid ul Azha Plan	
	Eid Milad Nabi Plan	
	9 th & 10 th Muharram	
	Monsoon Plan	
	Kashmir Day (5 th February), Defence Day (1 st September), 2 nd December, 3 rd December / 1 st January (New Year).etc	

PROPOSED MONITORING MECHANISM

Sr. No.	Minimum Service Level	Monitoring Frequency	Measuring/Monitoring Procedures	Minimum Acceptable Level & Penalty
Waste Collection				
1	Submission of operational plan of each activity i.e. DTD, CBC, Mech. Sweeping Washing, TCP Clearance etc.	At the time of execution of operations	The Client shall review these operational plans once received by Client. Client Approval is mandatory for execution of the plan.	<ol style="list-style-type: none"> 1. The service provider will submit the plans 7 days before the execution. 1lac/day penalty will be charged for delay. 2. In case of failure, termination of the contract will be issued.
2	Deployment of vehicles for each activity as per Plan approved by the client. (number and type of vehicles as per the activity schedule time)	Daily	VTMS and/or RFID System at Workshops (as per execution plan).	<ol style="list-style-type: none"> 1. 10,000/vehicle/day in case of failure to deploy. 2. 2,000/vehicle/hour for delay in deployment. 3. In case, the deficiency number increased to 10% or above, 5% deduction of Invoice that day.
	Contractor will ensure the best working condition of all vehicles by all means	Daily	IT based as well as filed monitoring by the Client supervisory persons/the party notified by the client. VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. 5,000/vehicle/day in case of breakdown in field. 2 hours resolution time after intimation will be observed for compliance. 2. 2,000/vehicle/day for delay in improvement of aesthetics of vehicle. 3. 5,000/vehicle/incident for uncovered transportation of waste.
4	Contractor will place at least (270) 0.8cm x 0.7m x 0.5cm Containers per Tehsil (Area) operational plan with good aesthetic and working condition by all means.	Daily	IT based as well as filed monitoring by the Client supervisory persons/the party notified by the client. VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. 5,000/container/day in case of failure/shortage. 2. 2,000/container/day delay in repair. 3. 2,000/container/day delay in improvement of aesthetics of container. 4. In case, deficiency number increased to 10% or above, 2% deduction of invoice.

				that day.
5	Door to Door collection from Residential Area	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client through VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 2000/incident for non-compliance observed by supervisory officer, UC/Ward Committee or public Complaints. In case of citizen complaint, 3 hours resolution time after intimation will be observed for compliance. Deduction of 10% of invoice of that day in case number of observations/non-compliance/complaint increased to 100 per day.
7	Ensure collection of all other waste (i.e. Green Waste, animal waste, bulk waste etc.) Dedicated vehicles to be deployed.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client through VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 10,000/vehicle/day in case of failure to deploy. 2,000/vehicle/hour of delay in deployment after intimation to the contractor.
8	Ensure no waste scattered around bins	Daily	Field based monitoring by the Client/third party notified by the client through Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 2,000/container/incident. 2 hours resolution time after intimation will be observed for compliance. 3% deduction of Invoice of that day in case number increases to 10% of total containers approved per plan.
9	Special Occasion waste collection (Eid and other public holidays) Deployment of Resources as per	On Special Occasions	Client shall through Digital Monitoring Mechanism as well field monitoring through its employees/third party notified by the client on daily basis.	<ol style="list-style-type: none"> 50,000/vehicle/day in case of failure to deploy. 10,000/vehicle/hour delay in deployment. Deduction of 50% of

	plan issued by the Client			invoice of that month case contractor failed to execute at least 80% compliance of plan.
10	Completion of manual sweeping on main roads/commercial markets should be completed before 9:00am	Daily	IT based as well as filed monitoring by the Client supervisory persons/the party notified by the client Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. 5,000/incident after hours intimation to contractor. 2. In case of citizen complaint, 3 hours resolution time after intimation will be observed for compliance. 3. 5% deduction of waste collection/manual sweeping activity of that day in case number increased to 50 complaints/observation/Town/day regarding absent of worker or non-compliance of manual sweeping.
11	Completion of manual sweeping in residential areas should be completed before 10:00 AM.		IT based as well as filed monitoring by the Client supervisory persons/the party notified by the client Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. 2,000/incident. After hours intimation to contractor. 2. In case of citizen complaint, 3 hours resolution time after intimation will be observed for compliance. 3. 5% deduction of waste collection/manual sweeping activity of that day in case number increased to 100 complaints/observation/Town/day regarding absent of worker or non-compliance of manual sweeping.
12	Sweeping and collection of waste from Sunday/ Friday Markets within one hour after its closure and	Weekly	IT based as well as filed monitoring by the Client supervisory persons/the party notified by the client VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. 50,000/incident/month

	before 06:00 AM on Monday/ Saturday.			
13	Ensure agreed number of manual sweepers available in each UCs as per plan approved by the client.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 2,000/worker/day in case of absence. 5% deduction of Invoice of that day in case number increases to 50 complaints/observation/Town/day
14	Presence of staff in Sunday/ Friday markets as per plan.	Weekly	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 5,000/worker/incident in case of absence and 1 hour of intimation contractor.
15	Dedicated vehicles (vehicle dually approved by the Company for each trip) for Collection of C&D /GW/Animal Waste as per plan.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 10,000/vehicle/incident in case of non deployment of resources. 100% deduction of waste collection in case of unapproved vehicle/trip by client. 2% deduction of Invoice of that day in case number increases to 10% of total number to be deployed/violation/day

Machinery & Allied Equipment				
1	Contractor will ensure 100% availability of vehicles along with backup vehicles for each activity.	Before the execution of the contract/services	Contractor will submit copies of documents for each vehicle registered with Excise and Taxation.	<ol style="list-style-type: none"> The service provider will submit the documents 15 days before execution. 1lac/day penalty will be charged for delay. In case of failure, termination the contract will be terminated.
2	Operational Number of Vehicles per day shall not less than 90% of the agreed quantity	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 10,000/vehicle/day in number increased to 50%. 50,000/vehicle/day in case number increased from 10% 15%. 100,000/vehicle/day in case number increased from 15% 20%.

3	Placement of total number of containers / Bins as per approved plan by the client within 15 days of execution of the contract. Placement plan should be submitted 15 days before the execution of the contract.	Daily	IT based as well as field monitoring by the Client supervisor persons/third party notified by the client by VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. The service provider will submit the manufacturing/fabrication/procurement evidence 15 days before execution. 1lac/day penalty will be charged for delay. 2. 5000/container/day will be applied in case of non-placement of container is less than 10% of the total number. 3. Deduction of 1% of invoice in case deficiency number increased to 10% . Termination of Contract may lead if deficiency increased from 30%
4	Relocation of waste bins placed at improper places within 24 hours of intimation/complaint.	Daily	IT based as well as field monitoring by the Client supervisor persons/third party notified by the client by VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. 2000/container/day
5	Aesthetic of Container Paint/Washing / cleaning	Daily	Field based monitoring by the Client/third party notified by the client by Digital Monitoring Mechanism	<ol style="list-style-type: none"> 1. 5000/container/day 2. Deduction of 1% of invoice in case observations number increased to 10%
6	Deployment/Provision of total number of Hand carts as per approved plan by client within 15 days of execution of the contract. Provision plan should be submitted 15 days before execution of the contract.	Daily	IT based as well as field monitoring by the Client supervisor persons/third party notified by the client by VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 1. The service provider will submit the manufacturing/fabrication/procurement evidence 15 days before execution. 1lac/day penalty will be charged for delay. 2. 5000/handcart/day will be applied in case of non-provision of Hand cart.
7	Collection vehicle shall be spillage proof. In case of spillage on the roads while transportation. The Company shall be penalized.	Daily	Field-based monitoring by the Client/third party notified by the client by Digital Monitoring Mechanism	<ol style="list-style-type: none"> 1. 10,000/incident.
8	100% Clearance of Fly Tipping	Daily	Field based monitoring by the Client/third party notified by the client by Digital Monitoring Mechanism	<ol style="list-style-type: none"> 1. 10,000/incident.

			Mechanism	
9	Aesthetic of vehicle Paint/Washing/ cleaning.	Daily	Field based monitoring by the Client/third party notified by the client by Digital Monitoring Mechanism	1. 25,000/vehicle/day
12	Deployment/Provision of allied equipment (Uniform Brooms, Shoes, Gloves, Jackets, Bags, Lime, Pher Scrapping Tools etc) as approved plan by the client within 15 days of execution of the contract. Provision plan should be submitted 15 days before the execution of the contract.	Daily	IT based as well as field monitoring by the Client supervisory persons/third party notified by the client by VTMS/Digital Monitoring Mechanism.	1. The service provider will submit the manufacturing/fabrication/procurement evidence 15 days before execution. 1lac/day penalty to be charged for delay. 2. 2000/incident/item/day will be applied in case of non-provision. 3. 2% Work deduction of manual sweeping activity in case number of complaints/observations increased to 100 individually/collectively.
13	Contractor will ensure fitness certificates of each vehicle from concerned Govt. Department/Agency on annual basis. Certificate must be submitted in 1st quarter of each calendar	Daily	Provision of Certificates by the Contractor	1. 10,000/vehicle/day in case of non-compliance.

Mechanical Sweeping & Washing				
1	100% of the tanks of the mechanical sweepers/Washer should be full of water before vehicles departs from the workshop.	Daily	Field based monitoring by the Client/third party notified by the client by Digital Monitoring Mechanism	1. 10,000 / incident
2	Completion of the task by each vehicle as per schedule approved by the Client.	Daily	IT based as well as field monitoring by the Client supervisory persons/third party notified by the client. VTMS/Digital Monitoring Mechanism	1. 10,000 / incident/ over speed working 2. 2% deduction of total invoice of that day in case activity impact is not as per the SOPs.
3	There should be zero dust load on the road after Mech. Sweeping/Washing	Daily	Field based monitoring by the Client/third party notified by the client by Digital Monitoring Mechanism	1. 3% deduction of total invoice of that day in case of activity impact is not as per the SOPs.
4	Brushes should in acceptable condition to ensure quality sweeping.	Daily	Field based monitoring by the Client/third party notified by the client by Digital Monitoring	1. 10,000 / incident

			Mechanism	
5	Emptying of mechanical sweeper at notified disposal points.	Daily	Field based monitoring the Client/third party notified by the client b Digital Monitoring Mechanism	1. 20,000 / incident
6	Mechanical sweeping should be completed before 05:00 AM in case of night operation. .	Daily	IT based as well as file monitoring by the Client supervisory persons/th party notified by the client. VTMS/Digital Monitoring Mechanism	1. 20,000 / incident
7	The working speed of mechanical sweeper not more than 15 kilometres per hour	Daily	IT based as well as file monitoring by the Client supervisory persons/th party notified by the client. VTMS/Digital Monitoring Mechanism	1. 10,000 / incident
8	Helpers should be present with vehicle as per plan	Daily	Field based monitoring the Client/third party notified by the client b Digital Monitoring Mechanism	1. 10,000 / incident
9	In case of complaint deployment of required number of vehicle within 02 hour.	Daily	Field based monitoring the Client/third party notified by the client b Digital Monitoring Mechanism	20,000 / incident

Waste Transfer and Transportation				
1	The transfer station will be operational 24/7 except maintenance days. In case it is non-operative the Company has to make it operational within 24 Hrs of Client Notification.	Daily	IT based as well as file monitoring by the Client supervisory persons/th party notified by the client VTMS/Digital Monitoring Mechanism.	1. 100,000 / incident/
2	Keep the Transfer Station zero on daily basis.	Daily	IT based as well as file monitoring by the Client supervisory persons/th party notified by the client Digital Monitoring Mechanism.	1. 5% deduction of total invoice of that day in case of non-completion observed.
3	Transfer Stations must be covered (10ft high walls) surrounding covered by plantation.	Daily	IT based as well as file monitoring by the Client supervisory persons/th party notified by the client Digital Monitoring Mechanism.	1. 5% deduction of total invoice of that day in case of non-completion observed.

4	Platform of Transfer Station must be solid, to avoid any digging of soil/ensuring ground contamination.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client Digital Monitoring Mechanism.	1. 5% deduction of total invoice of that day in case of non-completion observed.
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Human Resource

1	Attendance of the Workers should not be less than 75% of the workforce (As per the activity plan)	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 5,000 / worker/day Deduction of manual sweeping activity of that day in case number increased to 50 complaints/day regarding absence of worker. 10% deduction of invoice of that day in case of number exceeded from 25% absents.
2	Attendance of Supervisory and management staff should not be less than 90% in any case	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client VTMS/Digital Monitoring Mechanism.	<ol style="list-style-type: none"> 25,000 / staff/day 10% deduction of invoice of that day in case of number exceeded from 25% absents.
3	100% workers of all categories shall wear uniform.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client VTMS/Digital Monitoring Mechanism.	1. 5,000 / worker/day
4	Attendance of workers should be completed before 6:00 A.M (at designated time & location approved by the client at the designated locations.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client VTMS/Digital Monitoring Mechanism.	1. 25,000 / incident/day
5	Sweeping staff should be working in their respective beats.	Daily	IT based as well as filed monitoring by the Client supervisory persons/third party notified by the client VTMS/Digital Monitoring Mechanism.	1. 5,000 / worker/day